

## Academic Program Description Form

University Name: AL- Hamdaniya.

Faculty/Institute: Education for Pure Sciences

Scientific Department: Physics

Academic or Professional Program Name:

Final Certificate Name: Bachelor's of Physics

Academic System: Annual

Description Preparation Date: 1/9/2025

File Completion Date: 22/9/2025

Signature:

Head of Department Name:

Dr. Abdulrahman Ismael Ahmed

Date: 23/9/2025



Signature:

Scientific Associate Name:

Muhmmad Abbas Kazim

Date: 23/9/2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Ilham Matti Yaqoub

Date: 23/9/2025

Signature:

الاستاذ الدكتور  
شاهين صالح  
Approval of the Dean



### 1. Program Vision

Our vision for the Physics Department is to excel at both the local and global levels by providing high-quality education, advancing scientific research, and providing an advanced scientific environment that meets international standards. This enhances students' understanding of physical principles and concepts, and thus prepares well-qualified graduates to serve the community and drive national development forward.

### 2. Program Mission

Our mission in the Physics Department is to build and establish students scientifically by providing competent professors and appropriate infrastructure to advance the educational process, which will positively impact society by providing it with highly qualified graduates to work in the state's educational institutions.

### 3. Program Objectives

- Refining the student's scientific and practical character, enabling him to serve and develop society.
- Empowering the student scientifically and practically and deepening his knowledge in various branches of physics.
- Raising the academic and skill level of students, enabling them to face and overcome future challenges.
- Training students and enabling them to conduct practical experiments in primary and advanced laboratories and write theoretical and experimental scientific research.
- Encouraging students to uphold the ethics of the teaching profession.
- Preparing distinguished graduates qualified to work in the educational and academic fields.
- Supporting graduate programs and providing the appropriate requirements to



enable students to obtain master's and doctoral degrees.

#### 4. Program Accreditation

In the application stage for program accreditation according to the national standards for accreditation of programs of the educational group's colleges.

#### 5. Other external influences

Observation and application in schools for each semester – field visits – scientific consultations

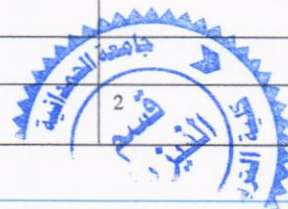
#### 6. Program Structure

| Program Structure        | Number of Courses | Credit hours | Percentage | Reviews* |
|--------------------------|-------------------|--------------|------------|----------|
| Institution Requirements | 8                 | 16           | %9.75      |          |
| College Requirements     | 10                | 34           | %20.73     |          |
| Department Requirements  | 21                | 114          | %69.52     |          |
| Summer Training          | nothing           |              |            |          |
| Other                    |                   |              |            |          |

\* This can include notes whether the course is basic or optional.

#### 7. Program Description

| Year/Level  | Course Code | Course Name                   | Credit Hours |           |
|-------------|-------------|-------------------------------|--------------|-----------|
|             |             |                               | theoretical  | practical |
| First Stage | PHY107      | Mechanics                     | 3            | 2         |
|             | PHY110      | Heat and Properties of Matter | 2            |           |
|             | PHY109      | Mathematics                   | 3            |           |
|             | UOH104      | Computer Science I            | 1            |           |
|             | PHY108      | Electricity and Magnetism     | 3            | 2         |





|              |        |                                           |   |   |
|--------------|--------|-------------------------------------------|---|---|
|              | EPS105 | Developmental and Educational Psychology  | 2 |   |
|              | EPS106 | Principles of Education                   | 1 |   |
|              | UOH101 | Arabic Language                           | 1 |   |
|              | UOH103 | Democracy and Human Rights                | 1 |   |
|              | UOH102 | English Language                          | 1 |   |
| Second Stage | PHY208 | Optics                                    | 3 | 2 |
|              | PHY212 | Astronomy                                 | 2 |   |
|              | PHY210 | Electricity and Magnetism II              | 2 | 2 |
|              | PHY211 | Sound and Wave Motion                     | 2 |   |
|              | UOH204 | Computers II                              | 1 |   |
|              | EPS206 | Teaching Thinking                         | 1 |   |
|              | EPS205 | Leadership and Educational Administration | 2 |   |
|              | EPS207 | Curriculum and School Books               | 1 | 2 |
|              | PHY209 | Mathematics II                            | 3 |   |
|              | UOH201 | Arabic Language                           | 1 |   |
|              | UOH202 | English Language                          | 1 |   |
|              | UOH203 | Crimes of the Ba'ath Regime in Iraq       | 1 |   |
| Third Stage  | PHY303 | Atomic Physics                            | 3 | 3 |
|              | PHY305 | Thermodynamics                            | 2 | 1 |
|              | PHY304 | Electronics                               | 3 | 3 |
|              | PHY306 | Analytical Mechanics                      | 2 | 1 |
|              | PHY307 | Complex Functions                         | 2 |   |
|              | PHY308 | Elective (Solar Energy)                   | 2 |   |
|              | EPS301 | Counseling and Mental Health              | 2 |   |
|              | EPS302 | Curricula and Teaching Methods            | 1 | 2 |
| Fourth Stage | PHY404 | Nuclear                                   | 3 | 3 |
|              | PHY408 | Laser                                     | 2 |   |
|              | PHY405 | Solid                                     | 2 | 1 |
|              | PHY406 | Quantum Mechanics                         | 2 | 1 |
|              | PHY407 | Electromagnetism                          | 2 | 1 |
|              | EPS401 | Measurement and Evaluation                | 2 |   |
|              | PHY409 | Educational Laboratory                    |   | 3 |
|              | EPS402 | Observation and Application               | 1 | 2 |
|              | EPS403 | Graduation Research Project               | 2 |   |



## 8. Expected learning outcomes of the program

### Knowledge

- Knowledge of teaching methods and techniques
- Writing scientific research
- Teaching various physics subjects
- Students' ability to distinguish between individual differences

### Skills

- Preparing teaching staff in physics
- Preparing researchers in physics
- Preparing teachers capable of working in science laboratories
- Preparing teachers with leadership and scientific skills

### Ethics

- Graduate students' commitment to maintaining professional ethics.
- Graduates' performance of assigned tasks with integrity, in keeping with the community and environment around them.
- Graduates' ability to work as a team.
- Graduates' ability to love knowledge, science, and progress.

## 9. Teaching and Learning Strategies

- 1- Theoretical lectures
- 2- Practical experiments





- 3- Practicing academic discussions
- 4- Conducting exams (daily, midterm, and final)
- 5- Conducting academic research in the field of specialization
- 6- Using appropriate and diverse teaching methods that are appropriate to the nature of the course

## 10. Evaluation methods

- 1 - Daily exams
- 2 - Mid year exams
- 3 - End of year exams
- 4 - Professors' evaluation of students through daily discussions
- 5 - Academic and practical reports and graduation research

## 11. Faculty

### Faculty Members

| Academic Rank                       | Specialization |                 | Special Requirements/Skills (if applicable) |  | Number of the teaching staff |          |
|-------------------------------------|----------------|-----------------|---------------------------------------------|--|------------------------------|----------|
|                                     | General        | Special         |                                             |  | Staff                        | Lecturer |
| Prof. Dr. Malik Hussein Kheder      | Physics        | Nuclear Physics |                                             |  | √                            |          |
| Prof. Hanaa Nafie Aziz              | Physics        | Nuclear Physics |                                             |  | √                            |          |
| Prof. Mona Yohanna Saliwa           | Physics        | Medical Physics |                                             |  | √                            |          |
| Asst. Prof. Dr. Zulfiqar Ali Zakkar | Physics        | Lasers          |                                             |  | √                            |          |
| Asst. Prof. Ban Abdulmasih Badr     | Physics        | Lasers          |                                             |  | √                            |          |
| Asst. Prof. Raja Abdullah Bashir    | Physics        | Solar Energy    |                                             |  | √                            |          |



|                                        |                        |                            |  |  |   |  |
|----------------------------------------|------------------------|----------------------------|--|--|---|--|
| Asst. Prof. Dr. Siham Jassim Abdullah  | Physics                | Solid State                |  |  | √ |  |
| Asst. Prof. Dr. Ali Hussein Ahmed      | Civil Engineering      | Hydrology                  |  |  | √ |  |
| Lect. Dr. Abdulrahman Ismael Ahmed     | Physics                | Nanomaterials Technologies |  |  | √ |  |
| Asst. Lect. Ahmed Turki Abdulhamid     | Physics                | Physics                    |  |  | √ |  |
| Asst. Lect. Islam Nasser Yousef        | Physics                | Physics                    |  |  | √ |  |
| Asst. Lect. Malak Jaafar Ali           | Physics                | Physics                    |  |  | √ |  |
| Asst. Lect. Ahmed Sobhi Ali            | Physics                | Physics                    |  |  | √ |  |
| Asst. Lect. Mohammed Basil Abduljabbar | Physics                | Physics                    |  |  | √ |  |
| Asst. Lect. Shaima Haitham Zaki        | Physics                | Physics                    |  |  | √ |  |
| Asst. Lect. Sura Mohammed Mohi Eldin   | Chemistry              | Physical Chemistry         |  |  | √ |  |
| Asst. Lect. Sanar Faraj Shamoun        | Physics                | Physics                    |  |  | √ |  |
| Asst. Lect. Juliana Aouni Orah         | Electronic Engineering | Electronic Engineering     |  |  | √ |  |

## Professional Development

### Mentoring new faculty members

The head of the department urges new lecturers to develop their academic abilities, adhere to lecture times, and develop their skills in dealing with students.

### Professional development of faculty members

The head of the department urges the instructors to adhere to lecture times, record student absences, pay attention to taking exams periodically, follow scientific methods in dealing with students, and practice classroom and extracurricular activities.

## 12. Acceptance Criterion





Central admission according to the instructions of the Ministry of Higher Education and Scientific Research

**13. The most important sources of information about the program**

- Prescribed Textbooks
- Central and Virtual Libraries and Reputable Academic Websites
- External Academic Resources

**14. Program Development Plan**

- Holding courses and seminars for faculty members to properly implement the academic program.
- Applying theoretical and practical physics concepts.



| Program Skills Outline |             |                                          |                   |                                    |    |    |    |        |    |    |    |        |    |    |    |   |
|------------------------|-------------|------------------------------------------|-------------------|------------------------------------|----|----|----|--------|----|----|----|--------|----|----|----|---|
|                        |             |                                          |                   | Required program Learning outcomes |    |    |    |        |    |    |    |        |    |    |    |   |
| Year/Level             | Course Code | Course Name                              | Basic or optional | Knowledge                          |    |    |    | Skills |    |    |    | Ethics |    |    |    |   |
|                        |             |                                          |                   | A1                                 | A2 | A3 | A4 | B1     | B2 | B3 | B4 | C1     | C2 | C3 | C4 |   |
| First Stage            | PHY107      | Mechanics                                | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | PHY110      | Heat and Properties of Matter            | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | PHY109      | Mathematics                              | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | UOH104      | Computer Science I                       | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | PHY108      | Electricity and Magnetism                | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | EPS105      | Developmental and Educational Psychology | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | EPS106      | Principles of Education                  | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | UOH101      | Arabic Language                          | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | UOH103      | Democracy and Human Rights               | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
|                        | UOH102      | English Language                         | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |
| Second Stage           | PHY208      | Optics                                   | Basic             | ✓                                  | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓      | ✓  | ✓  | ✓  | ✓ |













## نموذج وصف البرنامج الأكاديمي

اسم الجامعة: الحمدانية

الكلية/المعهد: كلية التربية للعلوم الصرفة

القسم العلمي: الفيزياء

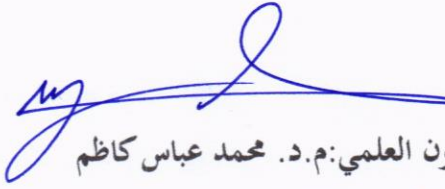
اسم البرنامج الأكاديمي او المهني: بكالوريوس

اسم الشهادة النهائية: بكالوريوس في الفيزياء

النظام الدراسي: سنوي

تاريخ اعداد الوصف: 2025/9/1

تاريخ ملء الملف: 2025/9/22

التوقيع:   
اسم المعاون العلمي: م.د. محمد عباس كاظم

التاريخ: 2025/9/23

التوقيع:   
اسم رئيس القسم: م.د. عبدالرحمن إسماعيل احمد

التاريخ: 2025/9/23

دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي: م.الهام متي يعقوب

التاريخ: 2025/9/23

التوقيع: 

  
الاستاذ الدكتور  
نشات م.الحماد  
مصادقة السيد العميد  
رئيس جامعة الحمدانية







### 1. رؤية البرنامج

نظرنا لقسم الفيزياء هو التميز على المستويين المحلي والعالمي من خلال تقديم تعليم بجودة عالية والارتقاء بمستوى البحوث العلمية وتوفير بيئة علمية متطورة ومواكبة للمعايير العالمية لتعزيز فهم الطلبة للمبادئ والمفاهيم الفيزيائية وبالتالي اعداد خريجين مؤهلين بشكل جيد لخدمة المجتمع ودفع عجلة التنمية الوطنية الى الامام .

### 2. رسالة البرنامج

رسالتنا في قسم الفيزياء هي العمل على بناء وتأسيس الطلبة علمياً من خلال توفير اساتيد أكفاء وبنى تحتية مناسبة للنهوض بالعملية التعليمية مما ينعكس ايجاباً على المجتمع من خلال رفده بالخريجين ذوي الكفاءات العالية للعمل في مؤسسات الدولة التربوية والتعليمية .

### 3. اهداف البرنامج

- صقل شخصية الطالب العلمية والتطبيقية , ليكون قادراً على خدمة المجتمع و تطويره.
- تمكين الطالب علمياً وعملياً وتعميق معرفته في فروع الفيزياء المتنوعة .
- رفع المستوى العلمي والمهاري للطلبة ، ليكونو قادرين على مواجهة التحديات المستقبلية والتغلب عليها .
- تدريب الطالب وجعله قادر على إجراء التجارب العملية في المختبرات الاولى والمتقدمة وكتابة البحوث العلمية النظرية والتجريبية .
- تشجيع الطلبة في الحفاظ على أخلاقيات مهنة التدريس.
- إعداد خريجين متميزين مؤهلين للعمل في المجال التربوي والاكاديمي .
- دعم برامج الدراسات العليا وتوفير المستلزمات المناسبة لتمكين الطلبة من الحصول على شهادة الماجستير والدكتوراه.





|                                                                                                        |
|--------------------------------------------------------------------------------------------------------|
| 4. الاعتماد البرامجي                                                                                   |
| في مرحلة التقديم للاعتماد البرامجي وفق المعايير الوطنية لاعتماد برامج كليات المجموعة التربوية العلمية. |

|                                                                                   |
|-----------------------------------------------------------------------------------|
| 5. المؤثرات الخارجية الأخرى                                                       |
| المشاهدة والتطبيق في المدارس لكل منهم فصل دراسي - زيارات ميدانية - استشارات علمية |

| 6. هيكلية البرنامج |              |             |                |           |
|--------------------|--------------|-------------|----------------|-----------|
| هيكل البرنامج      | عدد المقررات | وحدة دراسية | النسبة المئوية | ملاحظات * |
| متطلبات المؤسسة    | 8            | 16          | 9.75%          |           |
| متطلبات الكلية     | 10           | 34          | 20.73%         |           |
| متطلبات القسم      | 21           | 114         | 69.52%         |           |
| التدريب الصيفي     | لا يوجد      |             |                |           |
| أخرى               |              |             |                |           |

\* ممكن ان تتضمن الملاحظات فيما اذا كان المقرر أساسي او اختياري .

| 7. وصف البرنامج              | المسئ / المستوى | رمز المقرر أو المساق | اسم المقرر أو المساق       | الساعات المعتمدة |
|------------------------------|-----------------|----------------------|----------------------------|------------------|
|                              |                 |                      |                            | نظري             |
| المرحلة الاولى<br>2026-2025  |                 | PHY107               | الميكانيك                  | 3                |
|                              |                 | PHY110               | الحرارة وخواص المادة       | 2                |
|                              |                 | PHY109               | الرياضيات I                | 3                |
|                              |                 | UOH104               | الحاسوب I                  | 1                |
|                              |                 | PHY108               | الكهربائية والمغناطيسية I  | 3                |
|                              |                 | EPS105               | علم النفس النمو والتربوي   | 2                |
|                              |                 | EPS106               | اصول التربية والتعليم      | 1                |
|                              |                 | UOH101               | اللغة العربية              | 1                |
|                              |                 | UOH103               | الديمقراطية وحقوق الانسان  | 1                |
|                              |                 | UOH102               | اللغة الانكليزية           | 1                |
|                              |                 | PHY208               | بصريات                     | 3                |
|                              |                 | PHY212               | فلك                        | 2                |
| المرحلة الثانية<br>2026-2025 |                 | PHY210               | الكهربائية والمغناطيسية II | 2                |
|                              |                 | PHY211               | الصوت والحركة الموجية      | 2                |
|                              |                 | UOH204               | حاسوب II                   | 1                |
|                              |                 | EPS206               | تعليم التفكير              | 1                |
|                              |                 | EPS205               | القيادة والإدارة التربوية  | 2                |
|                              |                 |                      |                            |                  |



|   |   |                            |        |                              |
|---|---|----------------------------|--------|------------------------------|
| 2 | 1 | المناهج والكتب المدرسية    | EPS207 |                              |
|   | 3 | رياضيات II                 | PHY209 |                              |
|   | 1 | اللغة العربية              | UOH201 |                              |
|   | 1 | اللغة الانكليزية           | UOH202 |                              |
|   | 1 | جرائم نظام البعث في العراق | UOH203 | المرحلة الثالثة<br>2026-2025 |
| 3 | 3 | فيزياء الذرية              | PHY303 |                              |
| 1 | 2 | ثرموداينمك                 | PHY305 |                              |
| 3 | 3 | الكترونيكا                 | PHY304 |                              |
| 1 | 2 | ميكانيك تحليلي             | PHY306 |                              |
|   | 2 | دوال معقدة                 | PHY307 |                              |
|   | 2 | اختياري (طاقة شمسية)       | PHY308 |                              |
|   | 2 | الارشاد والصحة النفسية     | EPS301 |                              |
| 2 | 1 | مناهج وطرق تدريس           | EPS302 |                              |
| 3 | 3 | نوية                       | PHY404 | المرحلة الرابعة<br>2026-2025 |
|   | 2 | الليزر                     | PHY408 |                              |
| 1 | 2 | صلبة                       | PHY405 |                              |
| 1 | 2 | ميكانيك الكم               | PHY406 |                              |
| 1 | 2 | النظرية الكهرومغناطيسية    | PHY407 |                              |
|   | 2 | قياس وتقويم                | EPS401 |                              |
| 3 |   | المختبر التعليمي           | PHY409 |                              |
| 2 | 1 | المشاهدة والتطبيق          | EPS402 |                              |
|   | 2 | مشروع بحث التخرج           | EPS403 |                              |

| 8. مخرجات التعلم المتوقعة للبرنامج                                                            |  |
|-----------------------------------------------------------------------------------------------|--|
| المعرفة                                                                                       |  |
| معرفة طراق وأساليب التدريس                                                                    |  |
| كتابة البحوث العلمية                                                                          |  |
| تدريس مواد الفيزياء المختلفة                                                                  |  |
| قدرة الطالب على التمييز بين الفروق الفردية                                                    |  |
| المهارات                                                                                      |  |
| اعداد الكوادر التدريسية في علوم الفيزياء                                                      |  |
| اعداد باحثين في علوم الفيزياء                                                                 |  |
| اعداد مدرسين لهم القدرة على العمل في المختبرات العلمية                                        |  |
| اعداد مدرسين ذو مهارات قيادية وعلمية                                                          |  |
| القيم                                                                                         |  |
| التزام الطلبة الخريجين بالمحافظة على اخلاقيات المهنة                                          |  |
| تادية الطلبة الخريجين المهام المكلفين بها بكل امانة بما يتماشى مع المجتمع والبيئة المحيطة بهم |  |
| قدرة الطلبة الخريجين على العمل بروح الفريق                                                    |  |
| قدرة الخريجين على حب المعرفة والعلم والتطور                                                   |  |

| 9. استراتيجيات التعلم والتعليم |
|--------------------------------|
|--------------------------------|





|                                                                  |
|------------------------------------------------------------------|
| 1- المحاضرات النظرية                                             |
| 2- التجارب العملية                                               |
| 3- ممارسة المناقشات العلمية                                      |
| 4- اجراء الامتحانات (اليومية والفصلية والنهائية)                 |
| 5- اجراء بحوث علمية في مجال التخصص                               |
| 6- استخدام طرائق تدريس مناسبة ومتنوعة بما يتلاءم مع طبيعة المقرر |

| 10. طرائق التقييم                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 - امتحانات يومية<br>2 - امتحانات نصف السنة<br>3 - امتحانات نهاية السنة<br>4 - تقويم الاساتذة للطلبة من خلال المناقشات اليومية<br>5- تقارير العلمية والعملية وبحوث التخرج |

| 11. الهيئة التدريسية      |            |            |                        |                                      |       |
|---------------------------|------------|------------|------------------------|--------------------------------------|-------|
| أعضاء هيئة التدريس        |            |            |                        |                                      |       |
| الرتبة العلمية            |            | التخصص     |                        | المتطلبات/المهارات الخاصة (ان وجدت ) |       |
|                           |            |            |                        | اعداد الهيئة التدريسية               |       |
|                           |            |            |                        | ملاك                                 | محاضر |
| د. د. مالك حسين خضر       | فيزياء     | عام        | خاص                    | √                                    |       |
| د. هناء نافع عزيز         | فيزياء     | فيزياء     | فيزياء النووية         | √                                    |       |
| د. منى يوحنا صليوه        | فيزياء     | فيزياء     | فيزياء طبية            | √                                    |       |
| د. د. ذوالفقار علي زكر    | فيزياء     | فيزياء     | ليزر                   | √                                    |       |
| د. بان عبدالمسيح بدر      | فيزياء     | فيزياء     | ليزر                   | √                                    |       |
| د. رجاء عبدالله بشير      | فيزياء     | فيزياء     | طاقة شمسية             | √                                    |       |
| د. سهام جاسم عبدالله      | فيزياء     | فيزياء     | صلبة                   | √                                    |       |
| د. علي حسين احمد          | هندسة مدني | هندسة مدني | هيدرولوجي              | √                                    |       |
| د. عبدالرحمن اسماعيل احمد | فيزياء     | فيزياء     | تقنيات المواد النانوية | √                                    |       |
| د. م. احمد تركي عبدالحسين | فيزياء     | فيزياء     | فيزياء                 | √                                    |       |





|                           |                 |                 |   |  |  |
|---------------------------|-----------------|-----------------|---|--|--|
| م. م. اسلام ناصر يوسف     | فيزياء          | فيزياء          | ✓ |  |  |
| م. م. ملاك جعفر علي       | فيزياء          | فيزياء          | ✓ |  |  |
| م. م. احمد صبحي علي       | فيزياء          | فيزياء          | ✓ |  |  |
| م. م. محمد باسل عبدالجبار | فيزياء          | فيزياء          | ✓ |  |  |
| م. م. شيماء هيثم زكي      | فيزياء          | فيزياء          | ✓ |  |  |
| م. م. سرى محمد محي الدين  | كيمياء          | كيمياء فيزيائية | ✓ |  |  |
| م. م. سنر فرج شمعون       | فيزياء          | فيزياء          | ✓ |  |  |
| م. م. جوليانا عوني اوراها | هندسة الكترونيك | هندسة الكترونيك | ✓ |  |  |

|                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| التطوير المهني                                                                                                                                                                              |
| توجيه أعضاء هيئة التدريس الجدد                                                                                                                                                              |
| يحث رئيس القسم التدريسين الجدد بضرورة تنمية قدراتهم العلمية والالتزام بأوقات المحاضرات وتنمية مهاراتهم في التعامل مع الطلبة                                                                 |
| التطوير المهني لأعضاء هيئة التدريس                                                                                                                                                          |
| يحث رئيس القسم التدريسين بالالتزام بتوقيات المحاضرات وتسجيل غيابات الطلبة والاهتمام بأداء الاختبارات بشكل دوري واتباع الأساليب العلمية في التعامل مع الطلبة وممارسة الأنشطة الصفية والاصفية |

|                                                               |
|---------------------------------------------------------------|
| 12. معيار القبول                                              |
| القبول المركزي حسب تعليمات وزارة التعليم العالي والبحث العلمي |

|                                                                                       |
|---------------------------------------------------------------------------------------|
| 13. أهم مصادر المعلومات عن البرنامج                                                   |
| الكتب المقررة                                                                         |
| المكتبات المركزية والافتراضية والمواقع العلمية الرصينة لشبكة الانترنت                 |
| المصادر العلمية الخارجية                                                              |
|  |

إقامة الدورات والندوات لأعضاء الهيئة التدريسية للعمل على البرنامج الأكاديمي بالشكل الصحيح  
تطبيق المفاهيم الفيزيائية النظرية والعملية



| مخطط مهارات البرنامج               |    |    |    |          |    |    |    |         |    |    |    |                 |            |
|------------------------------------|----|----|----|----------|----|----|----|---------|----|----|----|-----------------|------------|
| مخرجات التعلم المطلوبة من البرنامج |    |    |    |          |    |    |    |         |    |    |    |                 |            |
| القيم                              |    |    |    | المهارات |    |    |    | المعرفة |    |    |    | اسمي أم اختياري | اسم المقرر |
| 4ج                                 | 3ج | 2ج | 1ج | 4ب       | 3ب | 2ب | 1ب | 4ا      | 3ا | 2ا | 1ا | اسمي أم اختياري | اسم المقرر |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY107     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY110     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY109     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH104     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY108     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | EPS105     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | EPS106     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH101     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH103     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH102     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY208     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY212     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY210     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY211     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH204     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | EPS206     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | EPS205     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | EPS207     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY209     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH201     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH202     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | UOH203     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY303     |
| ✓                                  | ✓  | ✓  | ✓  | ✓        | ✓  | ✓  | ✓  | ✓       | ✓  | ✓  | ✓  | اسمي            | PHY305     |







## Course Description Form

|                                                                                          |                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                     |
| General Arabic language                                                                  |                                                                                                                                                                                                                                                                                                                                                     |
| <b>2. Course Code:</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                     |
| UOH101                                                                                   |                                                                                                                                                                                                                                                                                                                                                     |
| <b>3. Semester / Year:</b>                                                               |                                                                                                                                                                                                                                                                                                                                                     |
| 2025-2026 First Stage                                                                    |                                                                                                                                                                                                                                                                                                                                                     |
| <b>4. Description Preparation Date:</b>                                                  |                                                                                                                                                                                                                                                                                                                                                     |
| 18-9-2025                                                                                |                                                                                                                                                                                                                                                                                                                                                     |
| <b>5. Available Attendance Forms:</b>                                                    |                                                                                                                                                                                                                                                                                                                                                     |
| In-person teaching                                                                       |                                                                                                                                                                                                                                                                                                                                                     |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>                       |                                                                                                                                                                                                                                                                                                                                                     |
| 30 hours / 2 units                                                                       |                                                                                                                                                                                                                                                                                                                                                     |
| <b>7. Course administrator's name (mention all, if more than one name)</b>               |                                                                                                                                                                                                                                                                                                                                                     |
| Name: Assistant Lecturer Mahmood Jumaa Suhail<br>Email: mahmod.suhail@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                     |
| <b>8. Course Objectives</b>                                                              |                                                                                                                                                                                                                                                                                                                                                     |
| <b>Course Objectives</b>                                                                 | <p>1- Introduce students to the importance of the Arabic language and its literature, and help them understand Arabic grammar.</p> <p>2. Develop students' language skills.</p> <p>3. Enable students to acquire the necessary skills to understand syntactic and semantic structures.</p> <p>4. Foster students' pride in the Arabic language.</p> |
| <b>9. Teaching and Learning Strategies</b>                                               |                                                                                                                                                                                                                                                                                                                                                     |
| <b>Strategy</b>                                                                          | <p>1. Provide students with knowledge and concepts of the Arabic language, preparing qualified cadres for work in institutions.</p> <p>2. Teach students how to apply general Arabic grammar in their writing.</p> <p>3. Discuss with students and conduct assessments to address common linguistic and expressive errors.</p>                      |





## 10. Course Structure

| Week | Hours | Required Learning Outcomes | Unit or subject name                                          | Learning method                                                  | Evaluation method |
|------|-------|----------------------------|---------------------------------------------------------------|------------------------------------------------------------------|-------------------|
| 1    | 1     | Koran                      | Surah Al-Hajj - Verse (5)                                     | Reading and interpretation of the Surah                          | Direct questions  |
| 2    | 1     | The Noble Prophet's Hadith | I was sent only to perfect good morals.                       | Explanation of the hadith and its meanings                       | Direct questions  |
| 3    | 1     | Arabic literature          | Selections of poetry from the pre-Islamic era / Al-Mu'allaqat | Reading the text and analyzing it technically and linguistically | Direct questions  |
| 4    | 1     | Arabic literature          | The poem of Al-Afwah Al-Awdi in the rule                      | Reading and analyzing the text at several levels                 | Direct questions  |
| 5    | 1     | <b>Morphology</b>          | Morphological                                                 | Lecture and practical applications                               | Direct questions  |
| 6    | 1     | <b>Morphology</b>          | conjugation                                                   | Lecture and practical applications                               | Direct questions  |
| 7    | 1     | First month exam           |                                                               |                                                                  |                   |





|    |   |                             |                                                                  |                                       |                  |
|----|---|-----------------------------|------------------------------------------------------------------|---------------------------------------|------------------|
| 8  | 1 | Language skills             | Alphabets                                                        | Lecture and practical applications    | Direct questions |
| 9  | 1 | punctuation marks           | Rules for writing punctuation marks                              | Lecture and practical applications    | Direct questions |
| 10 | 1 | Rules for writing the hamza | First, medium, extreme, connection and disconnection             | Lecture and practical applications    | Direct questions |
| 11 | 1 | Arabic dictionaries         | Dictionary Words (Definition, Importance, Types of Dictionaries) | Lecture and practical applications    | Direct questions |
| 12 | 1 | Arabic dictionaries         | The (eye foundation) method knowledge extracting words           | Lecture and practical applications    | Direct questions |
| 13 | 1 | Common linguistic errors    | Common mistakes in contemporary language                         | Lecture and practical applications    | Direct questions |
| 14 | 1 | Second month exam           |                                                                  |                                       |                  |
| 15 | 1 | Koran                       | Surah Baqarah Verses 263                                         | Interpretation and analysis of verses | Direct questions |



|    |   |                                                |                                                                              |                                    |                  |
|----|---|------------------------------------------------|------------------------------------------------------------------------------|------------------------------------|------------------|
| 16 | 1 | The Noble Prophet's Hadith                     | The best among you is he who learns the Qur'an and teaches it                | Explanation of the hadith          | Direct questions |
| 17 | 1 | Arabic literature                              | 7 verses from Rumi's Ba'iyyah                                                | Read and analyze                   | Direct questions |
| 18 | 1 | Human values in pre-Islamic and Islamic poetry | Kindness                                                                     | Lecture, discussion and dialogue   | Direct questions |
| 19 | 1 | Arabic grammar                                 | Parts Speech/Declension of the Built-in and Declined/Definite and Indefinite | Lecture, discussion and dialogue   | Direct questions |
| 20 | 1 | Sections of speech                             | Subject predicate                                                            | Lecture, discussion, dialogue      | Direct questions |
| 21 | 1 | Copiers                                        | He and his sisters                                                           | Lecture, discussion, dialogue      | Direct questions |
| 22 | 1 | First month exam                               |                                                                              |                                    |                  |
| 23 | 1 | Sections of speech                             | Subject deputy subject                                                       | Lecture and practical applications | Direct questions |
| 24 | 1 | Arabic rhetoric                                | Definition rhetoric language terminology/The relationship                    | Lecture and historical             | Direct questions |



|    |   |                          |                                                                                                |                                     |                  |
|----|---|--------------------------|------------------------------------------------------------------------------------------------|-------------------------------------|------------------|
|    |   |                          | rhetoric to Arabic language                                                                    | presentation                        |                  |
| 25 | 1 | Arabic rhetoric          | Definition statement and types                                                                 | Lecture and historical presentation | Direct questions |
| 26 | 1 | Arabic rhetoric          | Simile, truth and metaphor                                                                     | Lecture and historical presentation | Direct questions |
| 27 | 1 | Arabic rhetoric          | Linguistic metaphor definition, relationships, applications metaphor, definition applications) | Lecture and historical presentation | Direct questions |
| 28 | 1 | Mental metaphor          | Its definition relationships applications, metonymy, definition applications                   | Lecture and historical presentation | Direct questions |
| 29 | 1 | Second month exam        |                                                                                                |                                     |                  |
| 30 | 1 | Common linguistic errors | Common mistakes television journalism                                                          |                                     | Direct questions |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

Required textbooks (curricular books, if any)      None.





|                                                                    |                                                                                                                                   |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Main references (sources)                                          | Ibn Aqil's Commentary on Ibn Malik's Alfiyyah/ Rhetoric and Application, Ahmed Matloub                                            |
| Recommended books and references (scientific journals, reports...) | Meanings of Grammar - Dr. Fadhel Al-Samarrai, Comprehensive Grammar - Abbas Hassan, Sufficient Morphology, Ayman Amin Abdul-Ghani |
| Electronic References, Websites                                    | Waqf Library, Al-Sharakh Archives, Central Library - University of Mosul                                                          |



## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1. Course name:                                            |
| Educational and Developmental Psychology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2. Course code:                                            |
| EPS105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3. Semester/Year:                                          |
| 2025-2026-1st                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4. Date of preparation of this description:                |
| 09/21/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5. Available forms of attendance:                          |
| In-person education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 6. Number of study hours (total) / Number of units (total) |
| 60 hours / (4) units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                            |
| 7. Name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                            |
| Name: T.A. Mohammed Qazi Jassim Email: <a href="mailto:mohammedalhadidi@uohamdaniya.edu.iq">mohammedalhadidi@uohamdaniya.edu.iq</a> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 8. Course objectives                                       |
| <p style="text-align: center;"><b>The course aims to introduce students to:</b></p> <p>Educational psychology, its concept and objectives. -1</p> <p>The concept of learning, its applications, theories and educational applications and role in the educational process. -2</p> <p>Information processing theory and its educational applications. -3</p> <p>Transfer of learning, its types, feedback and its importance for learners. -4</p> <p>Motivation: definition, functions, types, theories and Teaching. -5</p> <p>Problem solving, problem definition, learning problem solving skills. -6</p> <p>Historical background For Learning by computer programs, its principles and effectiveness in A Learning process. -7</p> <p>The concept of developmental psychology. -8</p> <p>with me A The stages of language development. -9</p> | <p><b>Course objectives</b></p>                            |



|                                                                           |                                       |                           |                                                                                                                                              |          |            |
|---------------------------------------------------------------------------|---------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|
| Stages of human cognitive development. -10                                |                                       |                           |                                                                                                                                              |          |            |
| Stages of the emergence of the A Human. -11                               |                                       |                           |                                                                                                                                              |          |            |
| theDistinguish between branches of developmental psychology. -12          |                                       |                           |                                                                                                                                              |          |            |
| 9. Teaching and learning strategies                                       |                                       |                           |                                                                                                                                              |          |            |
| The lecture. -                                                            |                                       |                           |                                                                                                                                              | Strategy |            |
| Discussion. -                                                             |                                       |                           |                                                                                                                                              |          |            |
| Brainstorming. -                                                          |                                       |                           |                                                                                                                                              |          |            |
| Cooperative groups. -                                                     |                                       |                           |                                                                                                                                              |          |            |
| Self-learning. -                                                          |                                       |                           |                                                                                                                                              |          |            |
| Homework and its submission in class by students -                        |                                       |                           |                                                                                                                                              |          |            |
| Use of educational tools: -                                               |                                       |                           |                                                                                                                                              |          |            |
| Science books, blackboard, colored pencils, slide projector (PowerPoint). |                                       |                           |                                                                                                                                              |          |            |
| 10. Course structure                                                      |                                       |                           |                                                                                                                                              |          |            |
| Evaluation method                                                         | Learning method                       | Name of the unit or topic | Required learning outcomes                                                                                                                   | hours    | week       |
| Feedback via direct questions                                             | Lecture and discussion                | Educational Psychology    | Introducing students to:<br>Educational Psychology: Definition, Historical Development<br>Goals, fields and topics of educational psychology | 2        | the first  |
| Feedback via direct questions                                             | Lecture, discussion                   | Educational Psychology    | Educational objectives, their levels, and their formulation<br>Learning and teaching: concept, nature of the learning process                | 2        | the second |
| Feedback via direct questions                                             | Lecture and discussion, brainstorming | Educational Psychology    | Its characteristics<br>The difference between learning and                                                                                   | 2        | the third  |





|                                      | methods                                             |                        | teaching                                                                                                                                                                                                                                    |   |            |
|--------------------------------------|-----------------------------------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------|
| Feedback via direct questions        | Lecture and discussion                              | Educational Psychology | AFactors affecting learning<br>NLearning and teaching theories and their educational applications                                                                                                                                           | 2 | Fourth     |
| Feedback via direct questions        | Lecture, discussion and brainstorming techniques    | Educational Psychology | Theories:Thorndike, Pavlov, Skinner, Gestalt                                                                                                                                                                                                | 2 | Fifth      |
| Feedback via direct questions        | Lecture and discussion, methods of scientific doubt | Educational Psychology | social learning theory<br>NCognitive learning theory                                                                                                                                                                                        | 2 | Sixth      |
| Feedback via direct questions        | Lecture, discussion and brainstorming techniques    | First month exam       | First month exam                                                                                                                                                                                                                            | 2 | Seven th   |
| Feedback through questionsDirect Rah | Lecture, discussion and brainstorming mental        | Educational Psychology | Remembering and forgetting<br>Memory and its types                                                                                                                                                                                          | 2 | The eighth |
| Feedback via direct questions        | Lecture and discussion brainstorming methods        | Educational Psychology | Theories explaining forgetting<br>Strategies to help with memorization and recall, applications in acquisition and retention                                                                                                                | 2 | Ninth      |
| Extracurricular activities           | Discussion sessions                                 | Educational Psychology | Information Processing Theory, Applications of Theory<br>Transfer of learning: definition and types                                                                                                                                         | 2 | tenth      |
| Feedback via direct questions        | Lecture, discussion and dialogue                    | Educational Psychology | His educational theories and applications, assistive technologiesNI<br>It is said after learning Learning concepts: definition of the concept, nature of its components, influencing factors<br>In concept acquisition, concept acquisition | 2 | eleven th  |





|                               |                                              |                          |                                                                                                                                                                                              |   |                  |
|-------------------------------|----------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------|
|                               |                                              |                          | theories.                                                                                                                                                                                    |   |                  |
| Feedback via direct questions | Lecture and discussion brainstorming methods | Educational Psychology   | Thinking, its concept, creative thinking, learning skills and habits, motivation and classroom interaction, feedback: its definition, types, educational applications, practical application | 2 | twelfth          |
| Feedback via direct questions | Lecture and discussion cooperative learning  | Educational Psychology   | Problem solving Programs for teaching problem solving, practical application                                                                                                                 | 2 | thirteenth       |
| Feedback via direct questions | Lecture and discussion                       | Second month exam        | Second month exam                                                                                                                                                                            | 2 | fourteenth       |
| Feedback via direct questions | Lecture and discussion                       | Educational Psychology   | Computerized e-learning                                                                                                                                                                      | 2 | fifteenth        |
| Feedback via direct questions | Lecture, discussion and dialogue             | Developmental Psychology | Developmental Psychology: Definition, Importance, Meaning of Development General laws (principles) of growth                                                                                 | 2 | Week 16          |
| Feedback via direct questions | Lecture, discussion and dialogue             | Developmental Psychology | Factors affecting growth Genetic factors - environmental factors                                                                                                                             | 2 | Seventeenth week |
| Feedback via direct questions | Lecture, discussion and dialogue             | Developmental Psychology | Research Methods in Developmental Psychology Research: longitudinal, cross-sectional, experimental, correlational.                                                                           | 2 | Eighteenth week  |
| Feedback via direct questions | Lecture, discussion and dialogue             | Developmental Psychology | Childhood its definition, importance, and stages                                                                                                                                             | 2 | Nineteenth week  |
| Feedback via direct questions | Lecture, discussion and dialogue             | Developmental Psychology | Mental and language development Social and Emotional Development - Moral Development                                                                                                         | 2 | Week twentieth   |





|                               |                                                  |                          |                                                                                                                                                                                 |   |                   |
|-------------------------------|--------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------|
| Feedback via direct questions | Brainstorming, discussion and lecture techniques | Developmental Psychology | The role of social institutions in the socialization of children<br>Family, school, peers, media                                                                                | 2 | Week twenty-one   |
| Feedback via direct questions | Monthly exam                                     | First month exam         | First month exam                                                                                                                                                                | 2 | Week twenty-two   |
| Feedback via direct questions | Discussion and dialogue                          | Developmental Psychology | Adolescence: Definition, Importance, Stages, and Mental Development<br>Cognitive, social and emotional development, moral development                                           | 2 | Week twenty-three |
| Feedback via direct questions | Discussion and dialogue                          | Developmental Psychology | Adolescent and society                                                                                                                                                          | 2 | Week twenty-four  |
| Feedback via direct questions | Discussion and dialogue                          | Developmental Psychology | Teenagers and Careers: The Importance of 'Work in Teenagers' Life.<br>The importance of choosing a career and the factors influencing it... Teenagers' compatibility with work. | 2 | Week twenty-five  |
| Feedback via direct questions | Discussion and dialogue                          | Developmental Psychology | Adolescent trends and tendencies<br>The importance of tendencies and trends                                                                                                     | 2 | Week 26           |
| Feedback via direct questions | Discussion and dialogue                          | Developmental Psychology | Sources of acquisition of tendencies and trends<br>Factors affecting adolescents' attitudes and tendencies                                                                      | 2 | Week 27           |
| Feedback via direct questions | Discussion and dialogue                          | Developmental Psychology | Some adolescent problems-academic delay                                                                                                                                         | 2 | Week 28           |
| Feedback via direct questions | Discussion and dialogue                          | Second month exam        | Second month exam                                                                                                                                                               | 2 | Week 29           |





|                                   |                         |                          |                                                 |   |         |
|-----------------------------------|-------------------------|--------------------------|-------------------------------------------------|---|---------|
| By evaluating a practical session | Discussion and dialogue | Developmental Psychology | -Aggressive behavior<br>-adolescent delinquency | 2 | Week 30 |
|-----------------------------------|-------------------------|--------------------------|-------------------------------------------------|---|---------|

## 11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

Learning and teaching resources:

1) Educational Psychology: Theories, Methods and Applications (2024) Nabil Ad Al-Hadi, Dar Al-Yazouri Scientific.

Scientific.

2) Educational Psychology: Theory and Application, Adnan Yousef Al-Atoum, Shafiq Falah Al-Alauna, and Abdul

Al-Nasser Diab Al-Jarrah and Muawiya Mahmoud Ghaly (2013), Dar Al-Masirah for Publishing and Distribution

Printing, Amman, Jordan.

3) Educational Psychology, Abdul Majeed Nashwaty(2003) Dar Al-Furqan for Publishing and Distribution, Jordan

4) Educational Psychology, Saleh Abu Jado. Ghazal Dar Al-Masirah for Publishing, Distribution and Printing, Amman.

Jordan.

5) Foundations of Child and Adolescent Psychology, Kuwait – Al-Falah Library. Masn, Paul, and others.

6) Evolutionary Psychology, Jordan – Amman, Majdalawi Publishing House. Arefej, Sami (1993).

7) Introduction to Evolutionary Psychology, Cairo – Arab House Library for Books. Alwan, Fadia.



## Course Description Form

|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Computer                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Course Code:                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| UOH104                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Semester / Year:                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Yearly\ first stage                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. Description Preparation Date:                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2025/3/10                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Available Attendance Forms:                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Attendance                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 30 HOURS/ 2 UNITS                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. Course administrator's name (mention all, if more than one name)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Name: alaa salim abd alrazzaq<br>Email :alaasalimabd161194@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course Objectives                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Course Objectives</b>                                                      | <ul style="list-style-type: none"> <li>Explain the concept of computers and identify their characteristics and different types.</li> <li>Explain the components of a computer and their functions.</li> <li>Explain the physical components of a computer and their different types.</li> <li>Provide a brief overview of computer software and its applications.</li> <li>Identify some application programs and enable them to print reports, prepare presentations, and spreadsheets.</li> <li>Learn how to use the Internet.</li> </ul> |
| 9. Teaching and Learning Strategies                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Strategy</b>                                                               | - Graduating individuals with a culture and knowledge of everything related to computers and the rapid developments in this field                                                                                                                                                                                                                                                                                                                                                                                                           |





- Educating students to become good computer users and enthusiasts of using them by highlighting the features they will enjoy through using the device.
- Building a generation that keeps pace with the computer age and loves it.
- Providing students with the opportunity to observe, reflect, and implement practical and applied knowledge in the field of computers.

## 10. Course Structure

## 11.

| Week | Hours | Required Learning Outcomes | Unit or subject name               | Learning method                                     | Evaluation method        |
|------|-------|----------------------------|------------------------------------|-----------------------------------------------------|--------------------------|
| 1    | 1     | Gain knowledge             | Introduction to Computers          | Lecture and use data show ,discussion and dialogue  | Homework                 |
| 2    | 1     | Gain knowledge             | Computer Hardware                  | Lecture and use data show ,discussion and dialogue  | Discussion and questions |
| 3    | 1     | Gain knowledge             | Computer Components 2 Software     | Lecture and use data show , discussion and dialogue | Discussion and questions |
| 4    | 1     | Gain knowledge             | Computer Storage Units and Devices | Lecture and use data show ,discussion and dialogue  | Discussion and questions |
| 5    | 1     | Performance evaluation     | Previous Lecture Test              | Lecture and use data show ,discussion and dialogue  | Test                     |
| 6    | 1     | Gain knowledge             | Computer Security                  | Lecture and use data show ,discussion and dialogue  | Discussion and questions |
| 7    | 1     | Gain knowledge             | Computer Software Licenses         | Lecture and use data show ,discussion and dialogue  | Questions and discussion |
| 8    | 1     | Gain knowledge             | Computer Networks                  | Lecture and use data show ,discussion and dialogue  | Questions and discussion |
| 9    | 1     | Performance evaluation     | Previous Lecture Test              | Lecture and use data show ,discussion and dialogue  | Test                     |

|    |   |                        |                                          |                                                    |                          |
|----|---|------------------------|------------------------------------------|----------------------------------------------------|--------------------------|
| 10 | 1 | Gain knowledge         | Internet                                 | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 11 | 1 | Gain knowledge         | Websites                                 | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 12 | 1 | Gain knowledge         | Email                                    | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 13 | 1 | Gain knowledge         | Operating System Basics                  | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 14 | 1 | Gain knowledge         | Operating System Basics 2                | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 15 | 1 | Performance evaluation | Theoretical Exam (Midterm)               | Lecture and use data show ,discussion and dialogue | Test                     |
| 16 | 1 | Gain knowledge         | Definition of Microsoft Office Word      | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 17 | 1 | Gain knowledge         | Definition of the Home Page and Toolbars | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 18 | 1 | Gain knowledge         | Menu Bar: File Menu                      | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 19 | 1 | Gain knowledge         | Menu Bar: Main Menu                      | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 20 | 1 | Performance evaluation | Test                                     | Lecture and use data show ,discussion and dialogue | Test                     |
| 21 | 1 | Gain knowledge         | Menu Bar: Insert Menu                    | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 22 | 1 | Gain knowledge         | Design Menu                              | Lecture and use data show ,discussion and dialogue | Discussion and questions |



|    |   |                        |                                                            |                                                    |                          |
|----|---|------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------|
|    |   |                        |                                                            | ,discussion and dialogue                           |                          |
| 23 | 1 | Gain knowledge         | Page Layout Menu                                           | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 24 | 1 | Performance evaluation | Test                                                       | Lecture and use data show ,discussion and dialogue | Test                     |
| 25 | 1 | Gain knowledge         | Definition of PowerPoint Presentation Program              | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 26 | 1 | Gain knowledge         | Definition of the Home Page and Toolbars                   | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 27 | 1 | Gain knowledge         | Inserting, Deleting, and Duplicate Slides and Slide Design | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 28 | 1 | Performance evaluation | Test                                                       | Lecture and use data show ,discussion and dialogue | Test                     |
| 29 | 1 | Gain knowledge         | Animation Effects on Objects and Slide Transitions         | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 30 | 1 | Performance evaluation | Final Exam                                                 | Lecture and use data show ,discussion and dialogue | Test                     |

## 12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, quizzes

## 13. Learning and Teaching Resources

|                                                                    |                                                                                           |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | A lecture prepared by the lecturer                                                        |
| Main references (sources)                                          | أساسيات الحاسوب اعداد : الخضر علي الخضر بحث<br>مهارات الحاسوب :م.وسيم يوسف<br>ليلاس مظلوم |
| Recommended books and references (scientific journals, reports...) | Recommended mainstream books and references (scientific journals, reports)                |
| Electronic References, Websites                                    | Wikipedia                                                                                 |







## Course Description Template

|                                                            |                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Course Description Template                                |                                                                                                                                                                                                                                                                                                                                                                    |
| Course Name <i>Democracy and Human Rights</i>              |                                                                                                                                                                                                                                                                                                                                                                    |
| 1. Course Code                                             |                                                                                                                                                                                                                                                                                                                                                                    |
| UOH103                                                     |                                                                                                                                                                                                                                                                                                                                                                    |
| 2. Semester/Year                                           |                                                                                                                                                                                                                                                                                                                                                                    |
| 2025-2026                                                  |                                                                                                                                                                                                                                                                                                                                                                    |
| 3. Date of Description Preparation                         |                                                                                                                                                                                                                                                                                                                                                                    |
| 23/9/2025                                                  |                                                                                                                                                                                                                                                                                                                                                                    |
| 4. Date of Description Preparation                         |                                                                                                                                                                                                                                                                                                                                                                    |
| In-Person Education                                        |                                                                                                                                                                                                                                                                                                                                                                    |
| 2.Total Credit Hours / Total Units                         |                                                                                                                                                                                                                                                                                                                                                                    |
| 90hours                                                    |                                                                                                                                                                                                                                                                                                                                                                    |
| 2. Course Coordinator's Name (if more than one, list them) |                                                                                                                                                                                                                                                                                                                                                                    |
| Dr. Humam Mohammed Yaqoub                                  |                                                                                                                                                                                                                                                                                                                                                                    |
| Email:dr.humam.slama@uohamdaniya.edu.iq                    |                                                                                                                                                                                                                                                                                                                                                                    |
| Course Objectives                                          |                                                                                                                                                                                                                                                                                                                                                                    |
| Course Objectives                                          | (Defining fundamental human rights and explaining human rights in the constitution and Iraqi laws, discussing religious principles, providing students with information about their rights, and offering adequate information on human rights at both the national and international levels, as well as introducing democracy and its concepts, outlining types of |



|  |                                                                   |
|--|-------------------------------------------------------------------|
|  | democracy, and assessing the feasibility of applying it in Iraq). |
|--|-------------------------------------------------------------------|

### Teaching and Learning Strategies

Strategy

- Understanding rights in the context of modernity and development.
  - Familiarizing with laws and amendments related to human rights.
  - Equipping students with essential skills in rights and systems, including democracy.
  - Providing students with information on rights in the Iraqi constitution and laws.
- Offering students rights into rights in international treaties and agreements.

### Course Structure

| Assessment Method | Learning Method         | Unit or Topic Name                         | Required Learning Outcomes | hours | week      |
|-------------------|-------------------------|--------------------------------------------|----------------------------|-------|-----------|
|                   |                         |                                            | Required Learning Outcomes | hours | week      |
| Clarification     | Theoretical Explanation | Definition of Human Rights<br>1            | Basic Definitions          | 2     | The First |
| Clarification     | Theoretical Explanation | The Historical Development of Human Rights | Historical Development     | 2     | The       |





|                                                     |                         |                                                             |                                                                   |   |                |
|-----------------------------------------------------|-------------------------|-------------------------------------------------------------|-------------------------------------------------------------------|---|----------------|
|                                                     |                         | in the Mesopotamian Valley                                  |                                                                   |   | Second         |
| Clarification                                       | Theoretical Explanation | Human Rights in Islam, Christianity, and Judaism            | Students' Definition of Human Rights in Religions                 | 2 | The Third      |
| Clarification, Discussion, and Daily Exam           | Theoretical Explanation | Types of Rights and Their Characteristics                   | Students' Definition of Types of Rights and Their Characteristics | 2 | The Fourth     |
| Clarification, Discussion, and Daily Quiz           | Theoretical Explanation | The Iraqi Constitution of 2005                              | Human Rights in the Iraqi Constitution                            | 2 | The Fifth      |
| Discussion and Dialogue                             | Theoretical Explanation | Continuation of the Texts of the Iraqi Constitution of 2005 | Human Rights in the Iraqi Constitution                            | 2 | The Sixth      |
| Discussion and Dialogue                             | Theoretical Explanation | Supplement to the Texts of the Iraqi Constitution of 2005   | Human Rights in the Iraqi Constitution                            | 2 | The Seventh    |
| Clarification                                       | Theoretical Explanation | Human Rights in International Agreements                    | Human Rights in International Laws and Agreements                 | 2 | The Eighth     |
| Clarification                                       | Theoretical Explanation | Human Rights in International Organizations                 | Human Rights in International Laws and Agreements                 | 2 | The Ninth      |
| Clarification and Discussion                        | Theoretical Explanation | Human Rights in Global Organizations                        | Human Rights in International Laws and Agreements                 | 2 | The Tenth      |
| Clarification and Discussion                        | Theoretical Explanation | Human Rights in Regional Organizations                      | Human Rights in International Laws and Agreements                 | 2 | The Eleventh   |
| Clarification and Discussion                        | Theoretical Explanation | Labor and Social Security Law                               | Human Rights in Some Iraqi Laws                                   | 2 | The Twelfth    |
| Clarification, Discussion, Dialogue, and Daily Quiz | Theoretical Explanation | Personal Status Law                                         | Human Rights in Some Iraqi Laws                                   | 2 | The Thirteenth |
| Clarification and Discussion                        | Theoretical Explanation | Student Discipline Guidelines                               | Human Rights in Some Iraqi Laws                                   | 2 | The Fourteenth |
| Questions, Answers, and                             | Theoretical Explanation | Student Discipline                                          | Student Discipline Regulations                                    | 2 | The Fifteenth  |



| Discussion                         |                         | Guidelines                                                    |                                                 |   |                    |
|------------------------------------|-------------------------|---------------------------------------------------------------|-------------------------------------------------|---|--------------------|
| Questions, Answers, and Discussion | Theoretical Explanation | Human Rights in Iraqi Legislation                             | General Review                                  | 2 | The Sixteenth      |
| Discussion and Daily Exam          | Theoretical Explanation | Human Rights in Iraqi Laws                                    | General Review                                  | 2 | The Seventeenth    |
| Clarification                      | Theoretical Explanation | General Definitions of Democracy                              | Definitions of Democracy                        | 2 | The Eighteenth     |
| Clarification                      | Theoretical Explanation | Basic Concepts in the Democratic System                       | Basic Concepts in the Democratic System         | 2 | The Nineteenth     |
| Clarification                      | Theoretical Explanation | Forms of Democracy in Iraq                                    | Types of Democracy                              | 2 | The Twentieth      |
| Clarification and Discussion       | Theoretical Explanation | Advantages and Disadvantages of Democracy                     | Evaluation of the Democratic System             | 2 | The Twenty-First   |
| Clarification and Discussion       | Theoretical Explanation | The Feasibility of Implementing the Democratic System in Iraq | Implementation of the Democratic System in Iraq | 2 | The Twenty-Second  |
| Clarification and Discussion       | Theoretical Explanation | Examples and Models                                           | Global Governance Systems                       | 2 | The Twenty-Third   |
| Clarification and Discussion       | Theoretical Explanation | Examples and Models                                           | Democracy in Middle Eastern Countries           | 2 | The Twenty-Fourth  |
| Clarification and Discussion       | Theoretical Explanation | Examples, Models, and Cases                                   | Democracy in the Iraqi Context                  | 2 | The Twenty-Fifth   |
| Clarification and Daily Exam       | Theoretical Explanation | Definitions, Evolution, and Types of Democratic Systems       | General Review                                  | 2 | The Twenty-Sixth   |
| Reclarification                    | Theoretical Explanation | Human Rights                                                  | General Review of the Curriculum                | 2 | The Twenty-Seventh |
| Reclarification                    | Theoretical Explanation | Human Rights                                                  | General Review of the Curriculum                | 2 | The Twenty-Eighth  |
| Reclarification                    | Theoretical Explanation | Democracy                                                     | General Review of the Curriculum                | 2 | The Twenty-Ninth   |





| Reclarification                                                                                                                                                                     | Theoretical and Practical Explanation | Democracy                                                                | General Review of the Curriculum | 2 | The Thirtieth |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------|----------------------------------|---|---------------|
| 1. Course Evaluation                                                                                                                                                                |                                       |                                                                          |                                  |   |               |
| "Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, monthly exams, written exams, and reports, etc." |                                       |                                                                          |                                  |   |               |
| 2. Learning and Teaching Resources                                                                                                                                                  |                                       |                                                                          |                                  |   |               |
| 1. Prof. Dr. Riyad Aziz Human Rights and Democracy                                                                                                                                  |                                       | Required textbooks (methodology, if applicable)                          |                                  |   |               |
| 2- Omar MA., 1975, Elementary solid state physics, principles and applications, Addison-Wesley Publishing Company.                                                                  |                                       |                                                                          |                                  |   |               |
| 3. Solid State Physics, Mueid Gabriel Part One and Part Two                                                                                                                         |                                       |                                                                          |                                  |   |               |
| 4. Solid State Physics, Yahya Al-Jam                                                                                                                                                |                                       |                                                                          |                                  |   |               |
| Human Rights (Dr. Hamid Hanoon)                                                                                                                                                     |                                       | Essential References (Sources)                                           |                                  |   |               |
| Human Rights (Prof. Dr. Ali Youssef Al-Shukri)                                                                                                                                      |                                       | Recommended Standard Books and References (Scientific Journals, Reports) |                                  |   |               |
| Websites of Human Rights Organizations                                                                                                                                              |                                       | Electronic References, Internet Websites                                 |                                  |   |               |



## Course Description Form for the Second Stage

|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Course Title:                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                    |
| Heat and Properties of the Material/Stage I                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                    |
| Course Code:                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                    |
| PHY110                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                    |
| Semester/Year:                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                    |
| 2025-2026                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                    |
| Date of creation of this description:                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                    |
| 9/23/2025                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                    |
| Available Attendance Formats:                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                    |
| Attendance                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                    |
| Number of Hours of Study (Total) / Number of Units (Total):                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                    |
| 60 Hours                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                    |
| Name of the course administrator (if more than one name is mentioned):                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                    |
| Eng. Mowaffaq Moussa Mansour                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                    |
| Email: muwaffaq1968@gmail.com                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                    |
| <b>Course Objectives</b>                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                    |
| <ul style="list-style-type: none"> <li>Teaching students to study the basic concepts of heat and the amount of heat and its effect on the thermal properties of the material. It also studies the kinetic theory of gases and the laws that are subject to them, the mechanical properties of matter such as stress and compliance of all kinds, Junk's law, and the electrical and magnetic properties of solids in particular.</li> </ul> | <div style="display: flex; justify-content: space-between; align-items: center;"> <div>Course Objectives</div> <div>9</div> </div> |
| <b>Teaching and Learning Strategies</b>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                    |





|                                                                                                                                                                                                                                                                                                                                                |          |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----|
| <p>1- Directing the attention of students to know the mechanisms of heat transfer.</p> <p>2- Develop the student's ability to interpret phase shifts that occur in the material.</p> <p>3- Motivating students to participate in the lecture.</p> <p>Develop the student's skills in solving mathematical problems related to the subject.</p> | Strategy | 10 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----|



## 9. Course Outcomes, Teaching, Learning and Assessment Methods

### Course Outcomes:

- Explains the basic principles and concepts of heat.
- The student distinguishes between temperature and temperature.
- The student will learn about the methods of finding the specific heat of solids.
- Mentions the most important practical applications of Pascal's base.
- The student connects the scientific facts and data to derive Torcelli's equation.
- Enable the student to understand the mathematical laws in solving gas problems.
- Distinguishes between conductive and insulating materials.
- Identifies the factors affecting the amount and type of deformation that occurs in the solid.
- Enumerates the properties of paramagnetic materials.

### B. Skill Objectives of the Course:

- The student is introduced to the basic laws of heat, gases, and liquids.
- Develop the student's abilities to understand the laws of gases and the kinetic theory of gases.
- The student discovers the properties of fluids in both stillnesses and motion.
- The student compares different magnetic materials and the extent to which heat affects them.

### Teaching and Learning Methods

Lecture, Discussion, Dialogue and Analysis

### Evaluation Methods





|                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>- Daily and quarterly questions.</li> <li>- Homework.</li> <li>- Direct questions addressed to students during the lecture.</li> </ul>                                                                                                                                                                                                                  |
| <p>C. Emotional and Values Goals:</p> <p>A1- Directing students' attention to know the mechanisms of heat transfer.</p> <p>C2- Developing the student's ability to interpret the phase shifts that occur in the subject.</p> <p>A3- Motivating students to participate in the lecture.</p> <p>C4- Developing the student's skills in solving mathematical problems related to the subject.</p> |
| Teaching and Learning Methods                                                                                                                                                                                                                                                                                                                                                                  |
| Lecture , discussion, dialogue and analysis.                                                                                                                                                                                                                                                                                                                                                   |
| Evaluation Methods                                                                                                                                                                                                                                                                                                                                                                             |
| Written and oral tests                                                                                                                                                                                                                                                                                                                                                                         |
| <p>d. Transferable general and qualifying skills (other skills related to employability and personal development).</p> <ul style="list-style-type: none"> <li>- Access to scientific sources</li> <li>- Reviewing the latest studies in the specialization.</li> <li>- Follow scientific websites using the Internet</li> </ul>                                                                |



| 10. Course Structure |                                   |                          |                                                                                                                                                                                   |       |          |
|----------------------|-----------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----------|
| Evaluation Method    | Teaching Method                   | Module Name / or Subject | Required Learning Outcomes                                                                                                                                                        | Hours | The week |
| Direct Questions     | Lecture, Discussion and Dialogue  | temperature              | Temperature, Temperature Measurement Bases, Temperature Gauges and Conversion Between Them, Types of Diapers                                                                      | 2     | First    |
|                      | Lecturer, Discussion and Dialogue | temperature              | Seal Staging, Fixed-Volume Gas Heater, Thermocouple Thermodynamic, Electrical Resistance, Effect of Temperature on Material States, Thermal Expansion - Expansion of Solid Bodies | 2     | Second   |
|                      | Lecturer, Discussion and Dialogue | temperature              | Fluid Expansion, Gas Expansion, Heat Transfer Mechanisms, Conductivity                                                                                                            | 2     | Third    |
|                      | Lecture, Discussion and Dialogue  | temperature              | Radiation, Low Temperatures, Heat Energy Sources, Energy-Matter Relationship, Solved Examples                                                                                     | 2     | Fourth   |
|                      | Lecture, Discussion and Dialogue  | temperature              | Solving questions                                                                                                                                                                 | 2     | V        |
| Daily exam           | Lecture, Discussion and Dialogue  | Heat                     | Heat and its effects, amount of heat, specific heat, methods of measuring specific heat, phase concept, phase shifts                                                              | 2     | Sixth    |
|                      | Lecture, Discussion and Dialogue  | Heat                     | Phase diagram, water triple point, state transformations of matter, evaporation, fusion, boiling, sublimation                                                                     | 2     | Seventh  |
|                      | Lecture, Discussion and Dialogue  | Heat                     | The first law of thermodynamics, solving examples.                                                                                                                                | 2     | Eighth   |





|              |                                  |        |                                                                                                                       |   |                 |
|--------------|----------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------|---|-----------------|
|              | Lecture, Discussion and Dialogue | Heat   | Solving questions.                                                                                                    | 2 | Ninth           |
| Daily exam   | Lecture, Discussion and Dialogue | Gases  | Ideal Gas and Real Gas, Kinetic Theory of Gases, Avocadora Number, Gas Law, Boyle's Law, Charles' Law, Gas Constant   | 2 | X               |
|              | Lecture, Discussion and Dialogue | Gases  | The Ideal Gas Law, Vandervase's Equation, The Internal Energy of the Gas                                              | 2 | Eleventh        |
|              | Lecture, Discussion and Dialogue | Gases  | Specific Heat of Gases CV, CP Relationship between CV, CP Calculation of CV, CP of Ideal Gas , Work Done by Ideal Gas | 2 | Twelfth         |
|              | Lecture, Discussion and Dialogue | Gases  | Ideal Gas Pressure, Solved Examples                                                                                   | 2 | Thirteenth      |
|              | Lecture, Discussion and Dialogue | Gases  | Solving questions                                                                                                     | 2 | Fourteenth      |
| Monthly exam | Lecture, Discussion and Dialogue | Gases  | Solving questions                                                                                                     | 2 | Fifteenth       |
|              | Lecture, Discussion and Dialogue | fluids | Density and specific weight, capillary property, surface tensile, liquid surface, contact angle                       | 2 | Sixteenth week  |
|              | Lecture, Discussion and Dialogue | fluids | Viscosity, Pressure in Liquids, Pascal Base, Archimedes Base                                                          | 2 | Week Seventeen  |
|              | Lecture, Discussion and Dialogue | fluids | Flowflow Regular, Poisselle Equation, Bernoulli's Equation, Torchley's Equation                                       | 2 | Week Eighteenth |
|              | Lecture, Discussi                | fluids | Flow meters, venturi meter, petut tube, solved examples                                                               | 2 | Week Nineteen   |



|            |                                  |                                 |                                                                                                                                                                                                    |   |                   |
|------------|----------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------|
|            | on and Dialogue                  |                                 |                                                                                                                                                                                                    |   |                   |
|            | Lecture, Discussion and Dialogue | fluids                          | Solving questions                                                                                                                                                                                  | 2 | Week 20           |
| Daily exam | Lecture, Discussion and Dialogue | Mechanical properties of solids | Stress and its types, Adaptability and its types, Stress curve, Adaptability, Flexibility coefficient,                                                                                             | 2 | Week 21           |
|            | Lecture, Discussion and Dialogue | Mechanical properties of solids | Junk's coefficient, an experiment to measure the Junk coefficient, the Poisson ratio, an experiment to measure the Poisson ratio                                                                   | 2 | Week 22           |
|            | Lecture, Discussion and Dialogue | Mechanical properties of solids | The relationship between mechanical properties and temperature, the effect of temperatures on all properties, the thermal treatment of the material at high and low temperatures, solving examples | 2 | Week Twenty Three |
|            | Lecture, Discussion and Dialogue | Mechanical properties of solids | Solving questions                                                                                                                                                                                  | 2 | Week Twenty Four  |
|            | Lecture Discussion and Dialogue  | Magnetic properties of solids   | Magnetic Moment of Electron, Angular Momentum of Electron, Relationship between Magnetic Moment and Angular Momentum, Magnetic Effect                                                              | 2 | Week Twenty Five  |
|            | Lecture, Discussion and Dialogue | Magnetic properties of solids   | Classification of Magnetic Materials, Diamagnetic Materials, Paramagnetic Materials, Ferromagnetic Materials                                                                                       | 2 | Week twenty sixth |
| Daily exam | Lecture, Discussion and Dialogue | Magnetic properties of solids   | Antiferromagnetic materials, ferromagnetic materials, magnetic elements,                                                                                                                           | 2 | Week twenty seven |





|  |                                  |                                 |                                                                                                                                                                                                   |   |                   |
|--|----------------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------|
|  | Lecture, Discussion and Dialogue | Electrical properties of solids | Electrical conductivity, insulators and conductors, semiconductors, insulators, electrical resistivity, electrical conductivity and its relationship to temperature, superconductivity phenomenon | 2 | Week Twenty Eight |
|  | Lecture, Discussion and Dialogue | Electrical properties of solids | Critical magnetic field, Thermal electro-breakdown, Insulators affecting electrical breakdown, Issues                                                                                             | 2 | Week twenty ninth |
|  | Lecture, Discussion and Dialogue | Plasma                          | Plasma, Plasma Generation, Plasma Study, Plasma and Electric Field, Plasma Containment, Geomagnetic Field and Cosmic Plasma, Questions                                                            | 2 | Week 30           |

| 11. Infrastructure                                                                                                                                                                                                                               |                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1- Heat and properties of the material. (Dr. Kazim Ahmed)<br>2- Thermodynamics (Dr. Sami Mazloun, Dr. Amjad Karjeh, Dr. Abdellatif Ibrahim)<br>3- Mechanic, Heat and Sound, By: Sears.<br>4- Physics ( part 1 ), By: R. Resuich and D. Halliday. | 1- Required Textbooks                                                       |
|                                                                                                                                                                                                                                                  | 2- Main References (Sources)                                                |
|                                                                                                                                                                                                                                                  | A) Recommended books and references ( scientific journals, reports , .....) |
| Various websites and locations about heat and properties of materials online.                                                                                                                                                                    | B) Electronic References, Websites, .....                                   |



## Course Description Form

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                    |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 1. | <b>:Course Name</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                    |
|    | Fundamentals of Education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Fundamentals of Education                                          |
| 2. | <b>:Course Code</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                    |
|    | .EPS106                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                    |
| 3. | <b>:Semester/Year</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                    |
|    | 2026-2005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                    |
| 4. | <b>:Date of preparation of this description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                    |
|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2025-9-18                                                          |
| 5. | <b>:Available Forms of Attendance</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                    |
|    | Face-to-face education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                    |
| 6. | <b>(Number of Hours (Total) / Number of Units (Total))</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                    |
|    | Academic Hours/2 Units 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                    |
| 7. | <b>Course administrator name (if more than one name is mentioned)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                    |
|    | الاية                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Name: Eng. Muhannad Ahmed Sultan<br>mohand.1993@uohamdaniya.edu.iq |
| 8. | <b>Course Objectives</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                    |
|    | <p>Increasing students' awareness of the importance of linking the .1 scientific aspect with the practical, especially if it is related to improving aspects of daily life, through which society is reformed, .serving the country, and living that achieves happiness for all</p> <p>Increasing the student's understanding of the educational and .2 social reality throughout the ages and the awareness of the</p>                                                                                                                                          | <b>Course Objectives</b>                                           |
| 9. | <b>Teaching and Learning Strategies</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                    |
|    | <p style="text-align: right;">Dialogue and discussion .1</p> <p style="text-align: right;">.Brainstorming and problem-solving .2</p> <p style="text-align: right;">Measurement and Induction .3</p> <p style="text-align: right;">Collaborative Learning.Dialogue and discussion .4</p> <p style="text-align: right;">.Brainstorming and problem-solving .5</p> <p style="text-align: right;">Measurement and Induction .6</p> <p style="text-align: right;">.Collaborative learning .7</p> <p style="text-align: right;">."Educational seminars "Seminar .8</p> | <b>Strategy</b>                                                    |





|                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>The Five Pillars Strategy and Linking to the Reality of Students' Daily Life to Consolidate What They Have Learned</p> <p>.10 Blended learning</p> <p>.11 Assignments and Class Activities</p> <p>.12 "Educational seminars "Seminar</p> <p>.13 The Five Pillars Strategy and Linking to the Reality of Students' Daily Life to Consolidate What They Have Learned</p> <p>.14 Blended learning</p> <p>.15 Assignments and class activities</p> |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

#### 10. Course Structure

| طريقة التقييم            | Teaching Method   | Unit Name or Subject                                                                                                                 | Required Learning Outcomes                                                            | Hours | Week |
|--------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|------|
| Oral and written testing | Dialog Discussion | <b>The meaning of education and its objectives are necessary</b><br><b>The meaning of education and its objectives are necessary</b> | Students should explain the meaning of education and its objectives and its necessity | 2     | 1    |
| Oral and written testing | Dialog Discussion | <b>Theories, Fields</b>                                                                                                              | Students should distinguish between their theories and fields                         | 2     | 2    |
| Oral and written testing | Dialog Discussion | <b>The Historical Basis of Education</b>                                                                                             | Students should be introduced to the historical basis of education                    | 2     | 3    |
| Oral and written testing | Dialog Discussion | <b>The Historical Basis of Education</b>                                                                                             | To understand the ancient education                                                   | 2     | 4    |



|                          |                   |                                          |                                                                                                                                              |   |    |
|--------------------------|-------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---|----|
| Oral and written testing | Dialog Discussion | <b>The Historical Basis of Education</b> | To summarize how to raise Chinese                                                                                                            | 2 | 5  |
| Oral and written testing | Dialog Discussion | <b>The Historical Basis of Education</b> | Explain Greek Education                                                                                                                      | 2 | 6  |
| Oral and written testing | Dialog Discussion | <b>The Historical Basis of Education</b> | Illustrate Medieval Education                                                                                                                | 2 | 7  |
| Oral and written testing | Dialog Discussion | <b>The Historical Basis of Education</b> | To compare Arab education before Islam and after Islam                                                                                       | 2 | 8  |
| Oral and written testing | Dialog Discussion | <b>The Historical Basis of Education</b> | Students should distinguish between the challenges that hinder them and the factors that contribute to the application of modern ..education | 2 | 9  |
| Oral and written testing | Dialog Discussion | <b>The Social Basis of Education</b>     | Shows the relationship between education and society                                                                                         | 2 | 10 |
| Oral and written testing | Dialog Discussion | <b>The Social Basis of Education</b>     | Summarizes the relationship between the individual and the environment                                                                       | 2 | 11 |
| Oral and written testing | Dialog Discussion | <b>The Social Basis of Education</b>     | To practice moral education                                                                                                                  | 2 | 12 |
| Oral and written testing | Dialog Discussion | <b>The Social Basis of Education</b>     | Students should apply family ,education                                                                                                      | 2 | 13 |
| Oral and written testing | Dialog Discussion | <b>The Social Basis of Education</b>     | Students should apply civic ,education                                                                                                       | 2 | 14 |





|                          |                   |                                                                                  |                                                                                        |   |    |
|--------------------------|-------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---|----|
| Oral and written testing | Dialog Discussion | <b>The Social Basis of Education</b>                                             | Students should apply health education                                                 | 2 | 15 |
| Oral and written testing | Dialog Discussion | <b>The Economic Basis of Education</b><br><b>The Economic Basis of Education</b> | Illustrates education and its impact on economic development                           | 2 | 16 |
| Oral and written testing | Dialog Discussion | <b>The Economic Basis of Education</b>                                           | To enumerate natural resources and how to invest them                                  | 2 | 17 |
| Oral and written testing | Dialog Discussion | <b>The Scientific Basis of Education</b>                                         | Demonstrate education and methodology in research                                      | 2 | 18 |
| Oral and written testing | Dialog Discussion | <b>National and Social Foundations</b>                                           | National and Social Foundations                                                        | 2 | 19 |
| Oral and written testing | Dialog Discussion | <b>Education in the Perspective of Islam</b>                                     | Education in the Islamic Perspective                                                   | 2 | 20 |
| Oral and written testing | Dialog Discussion | <b>Educational Renewal in Iraq</b>                                               | Explains the Comprehensive School                                                      | 2 | 21 |
| Oral and written testing | Dialog Discussion | <b>Educational Renewal in Iraq</b>                                               | Understands Systematic Education                                                       | 2 | 22 |
| Oral and written testing | Dialog Discussion | <b>Educational Renewal in Iraq</b>                                               | Expresses the importance of acceleration schools                                       | 2 | 23 |
| Oral and written testing | Dialog Discussion | <b>Primitive Education</b>                                                       | The individual accepts the primitive environment and how the education itself is woven | 2 | 24 |
| Oral and written testing | Dialog Discussion | <b>Social Education</b>                                                          | Students have a specific social need                                                   | 2 | 25 |



|                          |                   |                                                      |                                                                                                           |   |    |
|--------------------------|-------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---|----|
| Oral and written testing | Dialog Discussion | <b>Education throughout history</b>                  | Finding the Relationship of Harmony between Civilizations                                                 | 2 | 26 |
| Oral and written testing | Dialog Discussion | <b>Islamic Education</b>                             | I mean symmetry and consistency in thinking and acting according to our religion                          | 2 | 27 |
| Oral and written testing | Dialog Discussion | <b>Community Educational Applications</b>            | Students should apply the most prominent educational and awareness programs that serve the .community     | 2 | 28 |
| Oral and written testing | Dialog Discussion | <b>Educational Methodological Applications</b>       | Students should be able to understand the foundations on which the methodological applications are .based |   | 29 |
| Oral and written testing | Dialog Discussion | <b>Challenges of Social and National Foundations</b> | Students should contribute to reducing obstacles facing societal and national progress                    | 2 | 30 |





|                                                                                                                                                                                                                                                                                                                                  |                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| <b>11. Course Evaluation</b>                                                                                                                                                                                                                                                                                                     |                                                                |
| Distribution of the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly written tests, reports.... etc                                                                                                                                                               |                                                                |
| <b>12. Teaching and Learning Resources</b>                                                                                                                                                                                                                                                                                       |                                                                |
|                                                                                                                                                                                                                                                                                                                                  | (Required Textbooks (Methodology, if any)                      |
| <p><b>.1 Ibn Rushd and his Philosophy between Heritage and Modernity, Al-Asam, Abd al-Amir, vol. 1 Bayt al-Hikma, Baghdad, 1999</b></p> <p><b>.2 Dr. Ibrahim Nasser, Foundations of Education, Dar Al-Tali'a, Amman, 2004</b></p> <p><b>.3 The Republic, Plato, translated by Hanna Khabbaz, Dar al-Turath, Beirut, 1969</b></p> | (Primary References                                            |
| <p><b>.4 Dr. Maher Al-Jaafari, Foundations of Education, Dar Ammar, Amman, 1998</b></p> <p><b>.5 Dr. Ibrahim Othman, Education, Dar Kazma, Kuwait, 1983</b></p> <p><b>.6 Dr. Mahmoud El-Sayed, Studies in Education and</b></p>                                                                                                  | Recommended Books and References (Scientific Journals, Reports |



|                                                            |                      |
|------------------------------------------------------------|----------------------|
| <p><b>Society, Al-Nadim, Cairo,</b></p> <p><b>1988</b></p> |                      |
|                                                            | References, Websites |





## Course Description Template

|                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Title</b>                                                                                                                          |                                                                                                                                                                                                                                                                                                                 |
| <b>Mathematics I</b>                                                                                                                            |                                                                                                                                                                                                                                                                                                                 |
| <b>2. Course Code</b>                                                                                                                           |                                                                                                                                                                                                                                                                                                                 |
| <b>PHY109</b>                                                                                                                                   |                                                                                                                                                                                                                                                                                                                 |
| <b>3. Semester / Academic Year</b>                                                                                                              |                                                                                                                                                                                                                                                                                                                 |
| <b>First Year / 2025-2026</b>                                                                                                                   |                                                                                                                                                                                                                                                                                                                 |
| <b>4. Date of Preparation of this Description</b>                                                                                               |                                                                                                                                                                                                                                                                                                                 |
| <b>1 / 9 / 2025</b>                                                                                                                             |                                                                                                                                                                                                                                                                                                                 |
| <b>5. Available Attendance Modes</b>                                                                                                            |                                                                                                                                                                                                                                                                                                                 |
| <b>Face-to-Face Instruction</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                 |
| <b>6. Total Study Hours / Total Credit Units</b>                                                                                                |                                                                                                                                                                                                                                                                                                                 |
| <b>90 hours / 6 units</b>                                                                                                                       |                                                                                                                                                                                                                                                                                                                 |
| <b>7. Name of Course Coordinator (If more than one, list all)</b>                                                                               |                                                                                                                                                                                                                                                                                                                 |
| <b>Lecturer : Shahab Ahmed Hassan</b><br><b>Email: <a href="mailto:shahab19862023@uohamdaniya.edu.iq">shahab19862023@uohamdaniya.edu.iq</a></b> |                                                                                                                                                                                                                                                                                                                 |
| <b>8. Course Objectives</b>                                                                                                                     |                                                                                                                                                                                                                                                                                                                 |
| <b>Subject Learning Objectives</b>                                                                                                              | <ul style="list-style-type: none"> <li>To equip and train the student in the principles and methods of ordinary differentiation and its applications, as well as methods of ordinary integration and their utilisation within the advanced differentiation course in the second year; to prepare the</li> </ul> |



|  |                                                                                                                                                                                                      |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>student to solve ordinary and partial differential equations and to relate these to other topics. Lectures on differentiation and integration are delivered for 5 theoretical hours per .week</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 9. Teaching and Learning Strategies

|                        |                                                                                                                                                                                                                                                                                |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Strategy</b></p> | <ul style="list-style-type: none"> <li>• Managing the lecture in a manner that emphasises the importance of time</li> <li>• Assigning students group tasks</li> <li>• Assigning students to gather sources and references and prepare a report on the lecture topic</li> </ul> |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## 10.Course Structure

| Week | Hours | Required Learning Outcomes                 | Unit or Topic Name                                                                                            | Teaching Method                                               | Assessment Method |
|------|-------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------|
| 1    | 3     | Theoretical Knowledge and Applied Analysis | Definition of number sets and intervals, including examples, inequalities, absolute value, and its properties | According to the teaching and learning methods outlined above | Direct questions  |
| 2    | 3     | Theoretical Knowledge and Applied Analysis | Function composition and its properties                                                                       | According to the teaching and learning methods outlined above | Direct questions  |
| 3    | 3     | Theoretical Knowledge and Applied Analysis | Types of functions (constant, identity, absolute, quadratic, polynomial)                                      | According to the teaching and learning methods outlined above | Direct questions  |
| 4    | 3     | Theoretical Knowledge and Applied Analysis | Types of functions (square root, even and odd, sign function, rational, greatest integer function)            | According to the teaching and learning methods outlined above | Direct questions  |





|    |   |                                            |                                                                                                                         |                                                               |                  |
|----|---|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|
| 5  | 3 | Theoretical Knowledge and Applied Analysis | Trigonometric functions with proofs                                                                                     | According to the teaching and learning methods outlined above | Direct questions |
| 6  | 3 | Theoretical Knowledge and Applied Analysis | Limits and continuity of functions.                                                                                     | According to the teaching and learning methods outlined above | Direct questions |
| 7  | 3 | Theoretical Knowledge and Applied Analysis | Limits using definition and finding limits from one side + mid-course exam                                              | According to the teaching and learning methods outlined above | Direct questions |
| 8  | 3 | Theoretical Knowledge and Applied Analysis | Continuity (definition of continuity, conditions of continuity) with various examples                                   | According to the teaching and learning methods outlined above | Direct questions |
| 9  | 3 | Theoretical Knowledge and Applied Analysis | Explaining the relationship between limit and continuity through various examples and solving exercises and assignments | According to the teaching and learning methods outlined above | Direct questions |
| 10 | 3 | Theoretical Knowledge and Applied Analysis | Solve various questions about limit and continuity based on students' questions                                         | According to the teaching and learning methods outlined above | Direct questions |
| 11 | 3 | Theoretical Knowledge                      | Defining the derivative                                                                                                 | According to the teaching                                     | Direct questions |



|    |   |                                            |                                                                                                          |                                                               |                  |
|----|---|--------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|
|    |   | and Applied Analysis                       | mathematically and physically with a graph and finding the derivative using the definition with examples | and learning methods outlined above                           |                  |
| 12 | 3 | Theoretical Knowledge and Applied Analysis | Derivation of trigonometric functions with various examples                                              | According to the teaching and learning methods outlined above | Direct questions |
| 13 | 3 | Theoretical Knowledge and Applied Analysis | Laws of hyperbolic functions, higher-order derivatives, and implicit differentiation                     | According to the teaching and learning methods outlined above | Direct questions |
| 14 | 3 | Theoretical Knowledge and Applied Analysis | L'Hopital's rule with various examples                                                                   | According to the teaching and learning methods outlined above | Direct questions |
| 15 | 3 | Theoretical Knowledge and Applied Analysis | Chain rule with various examples                                                                         | According to the teaching and learning methods outlined above | Direct questions |
| 16 | 3 | Theoretical Knowledge and Applied Analysis | Rules of slope and tangent with examples                                                                 | According to the teaching and learning methods outlined above | Direct questions |
| 17 | 3 | Theoretical Knowledge and Applied Analysis | Integration rules with examples and integration of trigonometric functions                               | According to the teaching and learning methods outlined above | Direct questions |





|    |   |                                            |                                                                                                                     |                                                               |                  |
|----|---|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|
| 18 | 3 | Theoretical Knowledge and Applied Analysis | Finding the area under and above a curve and the area between two curves using definite integration                 | According to the teaching and learning methods outlined above | Direct questions |
| 19 | 3 | Theoretical Knowledge and Applied Analysis | Inverse functions and finding the domain and codomain of inverse functions                                          | According to the teaching and learning methods outlined above | Direct questions |
| 20 | 3 | Theoretical Knowledge and Applied Analysis | Derivative of inverse trigonometric functions and integral of inverse trigonometric functions with various examples | According to the teaching and learning methods outlined above | Direct questions |
| 21 | 3 | Theoretical Knowledge and Applied Analysis | Derivative of hyperbolic functions, integration of hyperbolic functions and their rules with examples               | According to the teaching and learning methods outlined above | Direct questions |
| 22 | 3 | Theoretical Knowledge and Applied Analysis | Integration methods (UDV method, trigonometric substitution method) With examples                                   | According to the teaching and learning methods outlined above | Direct questions |
| 23 | 3 | Theoretical Knowledge and                  | Compensation method with various examples                                                                           | According to the teaching and learning                        | Direct questions |





|    |   |                                            |                                                                                                                                                           |                                                               |                  |
|----|---|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|
|    |   | Applied Analysis                           | + daily exam                                                                                                                                              | methods outlined above                                        |                  |
| 24 | 3 | Theoretical Knowledge and Applied Analysis | Partition Fractions Method (first case + second case with examples)                                                                                       | According to the teaching and learning methods outlined above | Direct questions |
| 25 | 3 | Theoretical Knowledge and Applied Analysis | Finding integration using the method $\sqrt[3]{ax+b}$ + the division method with examples + the mid-course exam                                           | According to the teaching and learning methods outlined above | Direct questions |
| 26 | 3 | Theoretical Knowledge and Applied Analysis | Transcendental functions (definition of the natural logarithm function, its graph and properties with various examples)                                   | According to the teaching and learning methods outlined above | Direct questions |
| 27 | 3 | Theoretical Knowledge and Applied Analysis | Derivative of the natural logarithm function and its integral with various examples                                                                       | According to the teaching and learning methods outlined above | Direct questions |
| 28 | 3 | Theoretical Knowledge and Applied Analysis | Definition of the exponential function, its graph and properties with examples, and the derivative and integral of the exponential function with examples | According to the teaching and learning methods outlined above | Direct questions |



|    |   |                                            |                                                                                               |                                                               |                  |
|----|---|--------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------|
| 29 | 3 | Theoretical Knowledge and Applied Analysis | Properties and derivative (exponential function to base a and logarithmic function to base a) | According to the teaching and learning methods outlined above | Direct questions |
| 30 | 3 | Theoretical Knowledge and Applied Analysis | Solve exercises, assignments and examples based on the student's weakness                     | According to the teaching and learning methods outlined above | Direct questions |

### 11.Course Assessment

15 marks / Monthly Exams

25 marks / Midterm Exam

60 marks / Final Exam

### 12.Learning Resources

|                                                                                  |                                                                                      |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Required Textbooks (Methodology, if available)                                   | Calculus                                                                             |
| Primary References (Sources)                                                     | Calculus theory                                                                      |
| Recommended Supporting Books and References (Scientific Journals, Reports, etc.) | Calculus I,II,III –Jerrold Marsdon & Alan Weinstein (2 <sup>nd</sup> edition , 2003) |
| Electronic References, Websites                                                  | YouTube                                                                              |

### 13.Curriculum Development Plan

- Add contemporary topics:
- Applications in economics (compound interest calculation, rates of change).



- Applications in Physics (Motion, Work, Energy)
- Introduction to differential equations as a natural extension of integration
- Active learning: Introducing interactive classroom activities and group problems.
- Relying on programs such as: GeoGebra, Desmos to illustrate graphs and derivations.
- Relying on modern sources in teaching the course, such as:
  - Thomas calculus–George B,2024.
  - Calculus Volume 1–Edwin Jed Herman, 2020.





## Course Description Form

1. Course Name:

Electricity and Magnetism

2. Course Code:

PHY108

3. Semester / Year:

2025-2026

4. Description Preparation Date:

21 / 9 / 2025

5. Available Attendance Forms:

Face-to-face learning

6. Number of Credit Hours (Total) / Number of Units (Total)

90 (Theoretical) + 90 (Practical) / 8 Units

7. Course administrator's name (mention all, if more than one name)

Name: Asst. Lect. Ahmed Subhi Ali Hussein

Email: ahmed.subhi.ali@uohamdaniya.edu.iq

8. Course Objectives

Course Objectives

- Introduce students to the fundamentals of electricity and magnetism and their importance in our lives, integrating physical concepts with mathematical derivations, and broadening students' horizons toward scientific theories and applications.
- Enable students to understand the basics of physics.
- Enable students to interpret physical phenomena from a mathematical perspective.
- Provide students with knowledge and understanding of scientific laws in physics, practical applications, logical and scientific analysis, and interpretation of physical phenomena.
- Develop students' thinking skills and enable them to understand and solve scientific problems related to physical laws.





|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | <ul style="list-style-type: none"> <li>• .....</li> <li>• .....</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>9. Teaching and Learning Strategies</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                            | <ol style="list-style-type: none"> <li>1. Enabling students to acquire knowledge and understanding of electricity and magnetism.</li> <li>2. Providing knowledge about charges and the electric field.</li> <li>3. Understanding the equations of the electric and magnetic fields, and electric current.</li> <li>4. Linking capacitors and understanding the effect of dielectric materials.</li> <li>5. Understanding how DC circuits work.</li> <li>6. Solving numerical problems related to current in electric networks.</li> <li>7. Deeper and more comprehensive understanding of mathematical aspects related to resistors and capacitors.</li> </ol> |

### **10. Course Schedule (Translated)**

| Week | Hours | Intended Learning Outcomes                                               | Unit / Topic   | Teaching Method                      | Assessment Method                      |
|------|-------|--------------------------------------------------------------------------|----------------|--------------------------------------|----------------------------------------|
| 1    | 3     | Prove Coulomb's law and solve problems related to the inverse square law | Coulomb's Law  | Lecture, discussion, problem-solving | Direct questions and daily assignments |
| 2    | 3     | Verify Coulomb's law, nucleus of the atom in Rutherford's experiment     | Coulomb's Law  | Lecture, discussion, problem-solving | Direct questions                       |
| 3    | 3     | Electric field intensity                                                 | Electric Field | Lecture, discussion, problem-solving | Direct questions                       |
| 4    | 3     | Electric field lines                                                     | Electric Field | Lecture, discussion, problem-solving | Direct questions                       |
| 5    | 3     | Applications on                                                          | Electric Field | Lecture, discussion,                 | Direct questions                       |



|    |   |                                        |                          |                                      |                  |
|----|---|----------------------------------------|--------------------------|--------------------------------------|------------------|
|    |   | calculating electric field intensity   |                          | problem-solving                      |                  |
| 6  | 3 | Electron charge                        | Electric Field           | Lecture, discussion, problem-solving | Monthly exam     |
| 7  | 3 | Electric flux                          | Gauss's Law              | Lecture, discussion, problem-solving | —                |
| 8  | 3 | Electric field between parallel plates | Gauss's Law              | Lecture, discussion, problem-solving | —                |
| 9  | 3 | Electric potential                     | Electric Potential       | Lecture, discussion, problem-solving | Monthly exam     |
| 10 | 3 | Applications on electric potential     | Electric Potential       | Lecture, discussion, problem-solving | Direct questions |
| 11 | 3 | Electric potential energy              | Electric Potential       | Lecture, discussion, problem-solving | Direct questions |
| 12 | 3 | Van de Graaff generator                | Electric Potential       | Lecture, discussion, problem-solving | Direct questions |
| 13 | 3 | Capacitance                            | Capacitors & Dielectrics | Lecture, discussion, problem-solving | Direct questions |
| 14 | 3 | Calculating capacitance                | Capacitors & Dielectrics | Lecture, discussion, problem-solving | Direct questions |
| 15 | 3 | Importance of insulators in capacitors | Capacitors & Dielectrics | Lecture, discussion, problem-solving | —                |
| 16 | 3 | Capacitors in series and parallel      | Capacitors & Dielectrics | Lecture, discussion, problem-solving | Direct questions |
| 17 | 3 | Practical applications of capacitors   | Capacitors & Dielectrics | Lecture, discussion, problem-solving | Direct questions |
| 18 | 3 | Stored                                 | Capacitors &             | Lecture,                             | Direct           |

|    |   |                                                            |                          |                                      |                  |
|----|---|------------------------------------------------------------|--------------------------|--------------------------------------|------------------|
|    |   | energy in capacitors                                       | Dielectrics              | discussion, problem-solving          | questions        |
| 19 | 3 | Variable capacitors                                        | Capacitors & Dielectrics | Lecture, discussion, problem-solving | Direct questions |
| 20 | 3 | Theoretical and applied knowledge, problem-solving ability | Capacitors & Dielectrics | Lecture, discussion, problem-solving | Direct questions |
| 21 | 3 | Electric current                                           | Current & Resistance     | Lecture, discussion, problem-solving | Direct questions |
| 22 | 3 | Resistance and resistivity                                 | Current & Resistance     | Lecture, discussion, problem-solving | Direct questions |
| 23 | 3 | Problems on resistivity                                    | Current & Resistance     | Lecture, discussion, problem-solving | —                |
| 24 | 3 | Temperature coefficient of resistivity                     | Current & Resistance     | Lecture, discussion, problem-solving | Direct questions |
| 25 | 3 | Practical types of resistors                               | Current & Resistance     | Lecture, discussion, problem-solving | —                |
| 26 | 3 | Color code of resistors                                    | Current & Resistance     | Lecture, discussion, problem-solving | Monthly exam     |
| 27 | 3 | Ohm's Law                                                  | Current & Resistance     | Lecture, discussion, problem-solving | Direct questions |
| 28 | 3 | Power dissipation in resistors                             | Current & Resistance     | Lecture, discussion, problem-solving | Direct questions |
| 29 | 3 | Joule's Law                                                | Current & Resistance     | Lecture, discussion, problem-solving | Direct questions |
| 30 | 3 | Problem solving                                            | Current & Resistance     | Lecture, discussion, problem-        |                  |



### 11. Course Assessment:

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily quizzes, oral and written exams, monthly exams, reports, etc.

### 12. Learning and Teaching Resources

|                                                                      |                                                                                                                                                                                         |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prescribed Textbooks (if available)                                  | <i>Fundamentals of Electricity and Magnetism</i> by Yahya Abdul-Hamid Al-Hajj Ali                                                                                                       |
| Main References (sources)                                            | <i>Electricity and Magnetism, Part I</i> , translated by Dr. Hazem Falah Sakeek                                                                                                         |
| Recommended Textbooks and References (scientific journals, reports): | <ul style="list-style-type: none"> <li>Following electronic references and the internet, including reliable websites and library portals of some international universities.</li> </ul> |





## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Mechanics</b>                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| PHY107                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Yearly                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. Description Preparation Date:                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 20/9/2025                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Attendance                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 90 HOURS/ 7 UNITS                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Name: Dr. Ali H. Ahmed Suliman                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Email: dr.aha.suliman@uohamdaniya.edu.iq                            |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Course Objectives                                                   | <p>The course aims to provide students with information and skills about mechanics, the relationship and movement of bodies, and the properties of matter</p> <p>Which the student will benefit from for the advanced university stage and which can qualify him for postgraduate studies in science</p> <p>Physics, building a strong background for those who will continue to study mechanics and properties of matter.</p> |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                |



|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategy</b> | <p>Enabling students to obtain knowledge and understanding of the topics of body mechanics, movement, and properties subject.</p> <p>2- Enabling students to obtain knowledge and understanding of body mechanics applications and to conduct experiments with different processes.</p> <p>3- Enabling students to obtain knowledge and understanding of the use of basic physical laws in mechanics and use it to solve problems.</p> |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week | Hours    | Required Learning Outcomes                                       | Unit or subject name             | Learning method | Evaluation method |
|------|----------|------------------------------------------------------------------|----------------------------------|-----------------|-------------------|
| 1    | 3 Theor  | Unit System and Dimensions                                       | Vectors Introduction             | Attendance      | Quiz              |
| 2    | 3 Theor  | Vectors and scalar                                               | Vectors Introduction             | Attendance      | Quiz              |
| 3    | 3 Theor  | Vector algebra                                                   | Vectors Introduction             | Attendance      | Homework          |
| 4    | 3 Theor  | Vector products (dot and cross)                                  | Vectors Introduction             | Attendance      | Quiz              |
| 5    | 3 Theor  | Triple products                                                  | Vectors Introduction             | Attendance      | Quiz              |
| 6    | 3 Theor  | Application of vectors                                           | Vectors Introduction             | Attendance      | Homework          |
| 7    | 3 Theory | Solution of Problems                                             | Vectors Introduction             | Attendance      | Homework          |
| 8    | 3 Theory | Position                                                         | Motion in a straight line Motion | Attendance      | Quiz              |
| 9    | 3 Theory | Average velocity                                                 | Motion in a straight line Motion | Attendance      | Quiz              |
| 10   | 3 Theory | city, Instantaneous velocity, Average Instantaneous acceleration | Motion in a straight line Motion | Attendance      | Quiz              |





|    |             |                                                                                     |                                                          |            |          |
|----|-------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|------------|----------|
| 11 | 3<br>Theory | Motion with constant acceleration                                                   | Motion in a straight line<br>Motion                      | Attendance | Quiz     |
| 12 | 3<br>Theory | Freely falling bodies                                                               | Motion in a straight line<br>Motion                      | Attendance | Quiz     |
| 13 | 3<br>Theory | Solution of Problems                                                                | Motion in a straight line<br>Motion                      | Attendance | Homework |
| 14 | 3<br>Theory | Motion in three dimensions                                                          | Motion in a plane<br>Motion in two dimensions<br>(plane) | Attendance | Quiz     |
| 15 | 3<br>Theory | Component of acceleration, and motion of projectile                                 | Motion in a plane<br>Motion in two dimensions<br>(plane) | Attendance | Quiz     |
| 16 | 3<br>Theory | Trajectory of a projectile                                                          | Motion in a plane<br>Motion in two dimensions<br>(plane) | Attendance | Homework |
| 17 | 3<br>Theory | Application on a projectile motion                                                  | Motion in a plane<br>Motion in two dimensions<br>(plane) | Attendance | Quiz     |
| 18 | 3<br>Theory | Solution of Problems                                                                | Motion in a plane<br>Motion in two dimensions<br>(plane) | Attendance | Quiz     |
| 19 | 3<br>Theory | Mass, Weight, Friction (Statics and dynamics), and Friction laws                    | Forces<br>Newton's laws                                  | Attendance | Quiz     |
| 20 | 3<br>Theory | Application of force                                                                | Forces<br>Newton's laws                                  | Attendance | Quiz     |
| 21 | 3<br>Theory | Center mass, and Equilibrium.                                                       | Forces<br>Newton's laws                                  | Attendance | Homework |
| 22 | 3<br>Theory | work done by varying force, work and kinetic energy, Gravitational potential energy | Work and Energy<br>Work done                             | Attendance | Quiz     |





|    |          |                                                                                                                                                                                                      |                                                       |            |          |
|----|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------|----------|
|    |          |                                                                                                                                                                                                      | by constant force                                     |            |          |
| 23 | 3 Theory | Elastic potential energy, Power, Power and velocity.                                                                                                                                                 | Work and Energy<br>Work done by constant force        | Attendance | Quiz     |
| 24 | 3 Theory | Angular velocity, Angular acceleration, Rotation with constant linear velocity, Kinetic energy of rotation, moment Inertia, Calculation of moment, Inertia of bodies (Cylinder, Sphere, Ring, Disc), | Rotation of Rigid Bodies<br>Introduction              | Attendance | Quiz     |
| 25 | 3 Theory | Radius of gyration, Energy of a body rolling on a horizontal plane, Work and power rotational motion, and the Torque.                                                                                | Rotation of Rigid Bodies<br>Introduction              | Attendance | Homework |
| 26 | 3 Theory | Conservation law of linear momentum, Angular momentum and impulse                                                                                                                                    | Momentum and Impulse<br>Momentum and linear impulsive | Attendance | Quiz     |
| 27 | 3 Theory | Relation between momentum and impulse in linear and rotational motion, Energy of Rotational motion of body.                                                                                          | Momentum and Impulse<br>Momentum and linear impulsive | Attendance | Quiz     |
| 28 | 3 Theory | Elastic Collisions in one-dimension, Inelastic collision, and Collisions in two dimensions                                                                                                           | Collisions                                            | Attendance | Quiz     |
| 29 | 3 Theory | Conservation and non-Conservation force, Conservation energy, and Potential energy curve                                                                                                             | Conservation of Energy<br>Conservation laws           | Attendance | Homework |
| 30 | 3 Theor  | Newton's law of gravitation, Definition of gravitation, Gravitation field, Gravitation potential, Intensity of gravitation, Kepler's law, and Artificial satellite orbital and escape velocity.      | Universal Gravitation<br>Meaning of gravitation       | Attendance | Quiz     |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, quizzes

| No. | Evaluation method | Marks | % Grads |
|-----|-------------------|-------|---------|
| 1   | Lab. Exam         | 10    | %10     |



|   |                          |     |      |
|---|--------------------------|-----|------|
| 2 | Quizzes                  | 10  | %10  |
| 3 | Term Exam                | 20  | %20  |
| 4 | Final Exam(experimental) | 10  | %10  |
| 5 | Final Exam (Theory)      | 50  | %50  |
|   | sum                      | 100 | %100 |

## 12. Learning and Teaching Resources

|                                                                    |                                                                                                                             |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | University Physics by Francis W. Sears, Mark W. Zemansky and Hugh D. Young, 1982.                                           |
| Main references (sources)                                          | Introduction to Physics by John D. Cutnell, Kenneth W. Johnson 8th.Ed., 2010.                                               |
| Recommended books and references (scientific journals, reports...) | Zainul Huda. <i>Metallurgy for Physicists and Engineers-Fundamentals, Applications, and Calculations</i> . CRC Press, 2020. |
| Electronic References, Websites                                    | Wikipedia                                                                                                                   |





## Course Description Form

| 1. Course Name:                                                                   |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
|-----------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|
| English Language                                                                  |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 2. Course Code:                                                                   |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| UOH102                                                                            |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 3. Semester / Year:                                                               |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Annual                                                                            |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 4. Description Preparation Date:                                                  |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 2025                                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 5. Available Attendance Forms:                                                    |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Daily Attendance                                                                  |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                       |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 1 Hour and 2 Credits                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 7. Course administrator's name (mention all, if more than one name)               |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Name: Ari Dakheel Abdal                                                           |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Email: <a href="mailto:aridasi@uohamdaniya.edu.iq">aridasi@uohamdaniya.edu.iq</a> |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 8. Course Objectives                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Course Objectives                                                                 |       |                                                                                                                                                                                                                                                                                                                                                                                                              | 1-Enriching and developing students' English language skills<br>2-Developing students' language abilities and skills |                                                                                                          |                               |
| 9. Teaching and Learning Strategies                                               |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Strategy                                                                          |       | 1. Develop students' ability to recognize the most important vocabulary and linguistic terms in the English language.<br>2. Enrich students' vocabulary.<br>3. Understand the importance of learning English and its impact on learning other subjects.<br>4- Developing students' English language skills.<br>5- Developing reading and writing skills.<br>6- Developing students' English-speaking skills. |                                                                                                                      |                                                                                                          |                               |
| 10. Course Structure                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Week                                                                              | Hours | Required Learning Outcomes                                                                                                                                                                                                                                                                                                                                                                                   | Unit or subject name                                                                                                 | Learning method                                                                                          | Evaluation method             |
| 1 <sup>st</sup>                                                                   | 1     | Theoretical knowledge and practical educational application                                                                                                                                                                                                                                                                                                                                                  | Unit one<br>Verbs to be/<br>Questions word                                                                           | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 2 <sup>nd</sup>                                                                   | 1     | Theoretical knowledge and practical educational application                                                                                                                                                                                                                                                                                                                                                  | Unit Two<br>Possessive adjective/ Plural nouns                                                                       | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |





|                  |   |                                                             |                                                              |                                                                                                          |                               |
|------------------|---|-------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|
| 3 <sup>rd</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Three<br>Questions with question words/Yes-No questions | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 4 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Three<br>Verbs to be/positive and negative              | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 5 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Four<br>Have/ Has                                       | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 6 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Four<br>Plural nouns                                    | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 7 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Four<br>Possessive pronoun                              | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 8 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Five<br>Possessive adjective                            | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 9 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Five<br>Present simple                                  | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 10 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Five<br>a-an/ Adjective noun                            | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 11 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Six<br>Present simple                                   | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 12 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Six<br>Adverbs of frequency                             | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 13 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit seven<br>Question words                                 | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |

|                  |   |                                                             |                                    |                                                                                                          |                               |
|------------------|---|-------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|
| 14 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Seven<br>Pronouns             | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 15 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Seven<br>This & That          | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 16 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Eight<br>There is & There are | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 17 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Eight<br>Some & Any           | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |

#### 11.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

#### 12.Learning and Teaching Resources

|                                                                    |                                                                                                                                                      |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | New Headway Plus for Beginners.                                                                                                                      |
| Main references (sources)                                          |                                                                                                                                                      |
| Recommended books and references (scientific journals, reports...) |                                                                                                                                                      |
| Electronic References, Websites                                    | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |





## Course Description Form

|                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Computer                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Course Code:                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| UOH104                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Semester / Year:                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Yearly\ first stage                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. Description Preparation Date:                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2025/9/1                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Available Attendance Forms:                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Attendance                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 30 HOURS/ 2 UNITS                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. Course administrator's name (mention all, if more than one name)           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Name: alaa salim abd alrazzaq<br>Email :alaasalimabd161194@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course Objectives                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Course Objectives</b>                                                      | <ul style="list-style-type: none"> <li>Explain the concept of computers and identify their characteristics and different types.</li> <li>Explain the components of a computer and their functions.</li> <li>Explain the physical components of a computer and their different types.</li> <li>Provide a brief overview of computer software and its applications.</li> <li>Identify some application programs and enable them to print reports, prepare presentations, and spreadsheets.</li> <li>Learn how to use the Internet.</li> </ul> |
| 9. Teaching and Learning Strategies                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Strategy</b>                                                               | - Graduating individuals with a culture and knowledge of everything related to computers and the rapid developments in this field.                                                                                                                                                                                                                                                                                                                                                                                                          |





- Educating students to become good computer users and enthusiasts of using them by highlighting the features they will enjoy through using the device.
- Building a generation that keeps pace with the computer age and loves it.
- Providing students with the opportunity to observe, reflect, and implement practical and applied knowledge in the field of computers.

## 10. Course Structure

## 11.

| Week | Hours | Required Learning Outcomes | Unit or subject name               | Learning method                                     | Evaluation method        |
|------|-------|----------------------------|------------------------------------|-----------------------------------------------------|--------------------------|
| 1    | 1     | Gain knowledge             | Introduction to Computers          | Lecture and use data show ,discussion and dialogue  | Homework                 |
| 2    | 1     | Gain knowledge             | Computer Hardware                  | Lecture and use data show ,discussion and dialogue  | Discussion and questions |
| 3    | 1     | Gain knowledge             | Computer Components 2 Software     | Lecture and use data show , discussion and dialogue | Discussion and questions |
| 4    | 1     | Gain knowledge             | Computer Storage Units and Devices | Lecture and use data show ,discussion and dialogue  | Discussion and questions |
| 5    | 1     | Performance evaluation     | Previous Lecture Test              | Lecture and use data show ,discussion and dialogue  | Test                     |
| 6    | 1     | Gain knowledge             | Computer Security                  | Lecture and use data show ,discussion and dialogue  | Discussion and questions |
| 7    | 1     | Gain knowledge             | Computer Software Licenses         | Lecture and use data show ,discussion and dialogue  | Questions and discussion |
| 8    | 1     | Gain knowledge             | Computer Networks                  | Lecture and use data show ,discussion and dialogue  | Questions and discussion |
| 9    | 1     | Performance evaluation     | Previous Lecture Test              | Lecture and use data show ,discussion and dialogue  | Test                     |

|    |   |                        |                                          |                                                    |                          |
|----|---|------------------------|------------------------------------------|----------------------------------------------------|--------------------------|
| 10 | 1 | Gain knowledge         | Internet                                 | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 11 | 1 | Gain knowledge         | Websites                                 | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 12 | 1 | Gain knowledge         | Email                                    | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 13 | 1 | Gain knowledge         | Operating System Basics                  | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 14 | 1 | Gain knowledge         | Operating System Basics 2                | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 15 | 1 | Performance evaluation | Theoretical Exam (Midterm)               | Lecture and use data show ,discussion and dialogue | Test                     |
| 16 | 1 | Gain knowledge         | Definition of Microsoft Office Word      | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 17 | 1 | Gain knowledge         | Definition of the Home Page and Toolbars | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 18 | 1 | Gain knowledge         | Menu Bar: File Menu                      | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 19 | 1 | Gain knowledge         | Menu Bar: Main Menu                      | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 20 | 1 | Performance evaluation | Test                                     | Lecture and use data show ,discussion and dialogue | Test                     |
| 21 | 1 | Gain knowledge         | Menu Bar: Insert Menu                    | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 22 | 1 | Gain knowledge         | Design Menu                              | Lecture and use data show ,discussion and dialogue | Discussion and questions |



|    |   |                        |                                                            |                                                    |                          |
|----|---|------------------------|------------------------------------------------------------|----------------------------------------------------|--------------------------|
|    |   |                        |                                                            | ,discussion and dialogue                           |                          |
| 23 | 1 | Gain knowledge         | Page Layout Menu                                           | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 24 | 1 | Performance evaluation | Test                                                       | Lecture and use data show ,discussion and dialogue | Test                     |
| 25 | 1 | Gain knowledge         | Definition of PowerPoint Presentation Program              | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 26 | 1 | Gain knowledge         | Definition of the Home Page and Toolbars                   | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 27 | 1 | Gain knowledge         | Inserting, Deleting, and Duplicate Slides and Slide Design | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 28 | 1 | Performance evaluation | Test                                                       | Lecture and use data show ,discussion and dialogue | Test                     |
| 29 | 1 | Gain knowledge         | Animation Effects on Objects and Slide Transitions         | Lecture and use data show ,discussion and dialogue | Discussion and questions |
| 30 | 1 | Performance evaluation | Final Exam                                                 | Lecture and use data show ,discussion and dialogue | Test                     |

## 12. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, quizzes

## 13. Learning and Teaching Resources

|                                                                    |                                                                                        |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | A lecture prepared by the lecturer                                                     |
| Main references (sources)                                          | أساسيات الحاسوب اعداد : الخضر علي الخضر بحث<br>مهارات الحاسوب :م.وسيم يوسف ليلان مظلوم |
| Recommended books and references (scientific journals, reports...) | Recommended mainstream books and references (scientific journals, reports)             |
| Electronic References, Websites                                    | Wikipedia                                                                              |







100

## Course Description Form

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------------------|-----------------|-------------------|
| <b>1. Course Name:</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Computer/Phase II                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| <b>2. Course Code:</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| UOH204                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| <b>3. Semester / Year:</b>                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| 2026-2025                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| <b>4. Description Preparation Date:</b>                                                            |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| 1/9/2025                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| <b>5. Available Attendance Forms:</b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Physical Description                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Two hours alone                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| <b>7. Course administrator's name (mention all, if more than one name)</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Ass. Prof. Dr. Riad Mubarak Abdullah                                                               |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Email : <a href="mailto:drriyad_mubarak@uohamdaniva.edu.ig">drriyad_mubarak@uohamdaniva.edu.ig</a> |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| <b>8. Course Objectives</b>                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Course Objective                                                                                   | <ul style="list-style-type: none"> <li>Understand the principles and techniques of computer human intelligence simulation.</li> <li>Developing the student's critical and creative thinking skills to deal with artificial intelligence</li> <li>Learn to troubleshoot your computer.</li> <li>Learn security, networking, and e-commerce.</li> </ul>                                          |                            |                      |                 |                   |
| <b>9. Teaching and Learning Strategies</b>                                                         |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Strategy                                                                                           | <ul style="list-style-type: none"> <li>Reading books and lectures related to the curriculum.</li> <li>Exercises and activities during and outside the lecture.</li> <li>Presentations on the topics of the lecture.</li> <li>Lecture, discussion, dialogue, and applied analysis.</li> <li>Theoretical and practical lecture, dialogue and discussions, oral questions and reports.</li> </ul> |                            |                      |                 |                   |
| <b>1. Course Structure</b>                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                |                            |                      |                 |                   |
| Week                                                                                               | Hours                                                                                                                                                                                                                                                                                                                                                                                          | Required Learning Outcomes | Unit or subject name | Learning method | Evaluation method |





|                   |   |                          |                                                                                                |                                  |                                                              |
|-------------------|---|--------------------------|------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------|
| First             | 1 | Gain knowledge           | Security & Networks:<br>What is a Network?<br>Network types, basic<br>network components       | Explanation and<br>Discussion    | Awarding<br>Degrees to<br>Participants                       |
| Second            | 1 | Skills acquisition       | Network Security<br>Basics                                                                     | Skills Training                  | Providing<br>incentives for<br>encouragement                 |
| Third             | 1 | Gain knowledge           | Network<br>troubleshooting                                                                     | Explain, Discuss and<br>Apply    | Awarding<br>Degrees to<br>Participants                       |
| Fourth            | 1 | Knowledge<br>Measurement | Conducting a daily<br>exam with previous<br>lectures                                           | Questions and Quizzes            | Applying<br>Scientific and<br>Practical Testing<br>Standards |
| V                 | 1 | Gain knowledge           | E-commerce: Concepts<br>of e-banking including<br>online banking,                              | Explain, Discuss and<br>Apply    | Awarding<br>Degrees to<br>Participants                       |
| Sixth             | 1 | Skills acquisition       | ATM & Debit Card<br>Services                                                                   | Skills Training                  | Providing<br>incentives for<br>encouragement                 |
| Seventh           | 1 | Gain knowledge           | SMS Banking                                                                                    | Explain,<br>Discuss and<br>Apply | Awarding<br>Degrees to<br>Participants                       |
| Eighth            | 1 | Skills acquisition       | Electronic Alerts &<br>Mobile Banking                                                          | Skills Training                  | Providing<br>incentives for<br>encouragement                 |
| Ninth             | 1 | Knowledge<br>Measurement | Conducting a daily<br>exam with previous<br>lectures                                           | Questions and Quizzes            | Applying<br>Scientific and<br>Practical Testing<br>Standards |
| X                 | 1 | Skills acquisition       | Troubleshooting                                                                                | Skills Training                  | Providing<br>incentives for<br>encouragement                 |
| Eleventh          | 1 | Gain knowledge           | Identify and resolve<br>common hardware and<br>software problems<br>faced by computer<br>users | Explain, Discuss and<br>Apply    | Awarding<br>Degrees to<br>Participants                       |
| Twelfth           | 1 | Skills acquisition       | Basic Techniques and<br>Tools for Diagnosing<br>and Solving Problems                           | Skills Training                  | Providing<br>incentives for<br>encouragement                 |
| Thirteenth        | 1 | Knowledge<br>Measurement | Conducting a daily<br>exam with previous<br>lectures                                           | Questions and Quizzes            | Applying<br>Scientific and<br>Practical Testing<br>Standards |
| Fourteenth        | 1 | Knowledge<br>Measurement | Quarterly Theoretical<br>Test                                                                  | Questions and Quizzes            | Applying<br>Scientific and<br>Practical Testing<br>Standards |
| Fifteenth         | 1 | Measuring skills         | Semester Practical<br>Exam                                                                     | Presenting projects              | Applying<br>Scientific and<br>Practical Testing<br>Standards |
| Sixteenth<br>week | 1 | Gain knowledge           | Introduction to Artificial<br>Intelligence                                                     | Explain, Discuss and<br>Apply    | Awarding<br>Degrees to<br>Participants                       |
| Week<br>Seventeen | 1 | Gain knowledge           | Definition of Artificial<br>Intelligence, its<br>History, Techniques<br>and Methodology        | Skills Training                  | Providing<br>incentives for<br>encouragement                 |



|                   |   |                       |                                                                                    |                            |                                                     |
|-------------------|---|-----------------------|------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------|
| Week Eighteenth   | 1 | Gain knowledge        | Challenges and Ethical Considerations of Artificial Intelligence                   | Explanation and Discussion | Awarding Degrees to Participants                    |
| Week Nineteen     | 1 | Skills acquisition    | Artificial Intelligence in Our Daily Life                                          | Skills Training            | Providing incentives for encouragement              |
| Week 20           | 1 | Skills acquisition    | Artificial Intelligence Applications                                               | Explain, Discuss and Apply | Awarding Degrees to Participants                    |
| Week 21           | 1 | Knowledge Measurement | Conducting a daily exam with previous lectures                                     | Questions and Quizzes      | Applying Scientific and Practical Testing Standards |
| Week 22           | 1 | Gain knowledge        | Artificial Intelligence and Society                                                | Explanation and Discussion | Awarding Degrees to Participants                    |
| Week Twenty Three | 1 | Gain knowledge        | Its impact on social and international relations and the future of humanity        | Explanation and Discussion | Providing incentives for encouragement              |
| Week Twenty Four  | 1 | Gain knowledge        | Challenges in Artificial Intelligence                                              | Explanation and Discussion | Awarding Degrees to Participants                    |
| Week Twenty Five  | 1 | Gain knowledge        | Privacy & Monitoring                                                               | Skills Training            | Providing incentives for encouragement              |
| Week twenty sixth | 1 | Gain knowledge        | The Impact of Artificial Intelligence on the Labor Market                          | Explanation and Discussion | Awarding Degrees to Participants                    |
| Week twenty seven | 1 | Gain knowledge        | The Future of Artificial Intelligence                                              | Explanation and Discussion | Awarding Degrees to Participants                    |
| Week Twenty Eight | 1 | Skills acquisition    | Future Trends in Artificial Intelligence Modern Research and Emerging Technologies | Skills Training            | Providing incentives for encouragement              |
| Week twenty ninth | 1 | Knowledge Measurement | Quarterly Theoretical Test                                                         | Questions and Quizzes      | Applying Scientific and Practical Testing Standards |
| Week 30           | 1 | Measuring skills      | Semester Practical Exam                                                            | Presenting projects        | Applying Scientific and Practical Testing Standards |

## 2. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports... etc

## 3. Learning and Teaching Resources

|                                               |                                                                                                                                                                                       |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | <ul style="list-style-type: none"> <li>Adel Abdel Nour, "Introduction to the World of Artificial Intelligence", 2005.</li> <li>Lectures that include curriculum vocabulary</li> </ul> |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



|                                                                    |                                                                                                           |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Main references (sources)                                          | Ahmed Banafa," Introduction to Artificial Intelligence (AI)", 1 st Edition (2024)                         |
| Recommended books and references (scientific journals, reports...) | David L. Poole & Alan K. Mackworth," Artificial Intelligence: Foundations of Computational Agents" (2017) |
| Electronic References, Websites                                    | <a href="https://www.csail.mit.edu">https://www.csail.mit.edu</a>                                         |





## Course Description Form

|                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Curricula and Textbooks                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2. Course Code:                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| EPS207                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. Semester / Year:                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2025-2026                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. Description Preparation Date:                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 23/9/2025                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5. Available Attendance Forms:                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| In-person                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 28 hours                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7. Course administrator's name (mention all, if more than one name)                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Name: M.M Elham Abdul Samad Muhammad<br>Email: <a href="mailto:elhamabdulsamad@uohamdaniya.edu.iq">elhamabdulsamad@uohamdaniya.edu.iq</a>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 8. Course Objectives                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Course Objectives</p> <div style="text-align: center; margin-top: 100px;">  </div> | <ul style="list-style-type: none"> <li>• General objective:<br/>Introduce students to the importance, the foundations of their approval of their design, textbooks, and how to design them.</li> <li>• Specific Objective:<br/> <ol style="list-style-type: none"> <li>1) To introduce students to concept of curricula.</li> <li>2) Types of curricula.</li> <li>3) Foundations of their design.</li> <li>4) Curriculum evaluation.</li> <li>5) Textbooks</li> <li>6) Textbook analysis.</li> <li>7) Textbook design criteria.</li> <li>8) E-books practical exercises</li> </ol> </li> </ul> |

|                                     |                                                                                                    |
|-------------------------------------|----------------------------------------------------------------------------------------------------|
|                                     | activities.                                                                                        |
| 9) Teaching and Learning Strategies |                                                                                                    |
| Strategy                            | Lecture- Questioning- discussion- Induction- cooperative learning- brainstorming- Active learning. |

#### 10) Course Structure

| Week | Hours | Required Learning Outcomes                                                                                                   | Unit or subject name                                                    | Learning method                      | Evaluation method      |
|------|-------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------|------------------------|
|      |       | Curricula: conc characteristics, importance                                                                                  | curricula                                                               | Lecture                              | Daily exa              |
|      |       | Foundations curricula: philosophical<br>- (intellectua foundation<br>- Cultural (social) psychological (developm al) foundat | Foundations curricula                                                   | Lecture- discussion                  | Question and discussio |
|      |       | Elements of the sch curriculum: educational objectives- educational conten                                                   | Elements of curriculum                                                  | Lecture- brainstorm                  | Oral exa               |
|      |       | Practical activ objectives of teach general and behavi mathematics                                                           | Practical vitality                                                      | Cooperativ learning- Active learning | Group reports          |
|      |       | Types of curric subject curricul activity- curricul core curriculum                                                          | Types of curricula                                                      | Lecture-1 Induction                  | Classroom interacti    |
|      |       | Collaborative pract activity                                                                                                 | Design a unit for mathematics curriculum accordin one of the design typ | Cooperativ learning                  | Reports                |
|      |       | Written test Curriculum evaluation: concept of<br>- Curriculum evaluation curriculum evaluation objectives                   | Written test Curriculum evalua Academic                                 | Lecture- brainstorm                  | Individu assignme      |



|  |  |                                                                                                                                                                                                                                                             |                        |                       |                       |
|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|-----------------------|
|  |  | evaluation criteria, evaluation methods, and evaluation steps                                                                                                                                                                                               |                        |                       |                       |
|  |  | Individual practical activity: evaluation first-year individual practical activity evaluating                                                                                                                                                               | Practical Activity     | Active learning       | Individual assignment |
|  |  | Individual practical activity for evaluation second-intermediate                                                                                                                                                                                            | Practical Activity     | Active learning       | Individual assignment |
|  |  | Individual practical activity for evaluation third-year individual practical activity evaluating                                                                                                                                                            | Practical Activity     | Active learning       | Individual assignment |
|  |  | Individual practical activity for evaluation fourth-year science curricula                                                                                                                                                                                  | Practical Activity     | Active learning       | Individual assignment |
|  |  | Individual practical activity for evaluation fifth-year science curricula                                                                                                                                                                                   | Practical Activity     | Active learning       | Individual homework   |
|  |  | Individual practical activity: evaluation sixth grade science curricula                                                                                                                                                                                     | Practical Activity     | Active learning       | Individual homework   |
|  |  | Curriculum development and models: concepts curriculum development <ul style="list-style-type: none"> <li>- Motivation for curriculum development</li> <li>- principles of curriculum development</li> <li>- basic models curriculum development</li> </ul> | Curriculum development | Lecture1: Questioning | Daily test            |
|  |  | Group practical activity: developing mathematics curriculum                                                                                                                                                                                                 | Practical activity     | Active learning       | Individual homework   |





|  |  |                                                                                 |                                                               |                              |                     |
|--|--|---------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------|---------------------|
|  |  | for the intermed stage                                                          |                                                               |                              |                     |
|  |  | Group pract activity: develop mathematics curri for the preparat stage          | Practical Activity                                            | Active learning              | Individu homewo     |
|  |  | International experiences curriculum development                                | Presentation Experiences                                      | Cooperativ learning. Lecture | Joint reports       |
|  |  | Training                                                                        | Comparison betw some internat curriculum and local curriculum | Cooperativ learning          | Joint reports       |
|  |  | Textbook: its cons and importance pa curriculum evalua textbook and development | Textbook                                                      | Lecture-discussion           | Daily tes           |
|  |  | Practical activ analysis intermediate books                                     | Practical Activity                                            | Active learning              | Individu homewo     |
|  |  | Practical activ second intermed books                                           | Practical Activity                                            | Active learning              | Individu homewo     |
|  |  | Practical activ analysis th intermediate books                                  | Practical Activity                                            | Active learning              | Individu homewo     |
|  |  | Practical activ analysis for intermediate books                                 | Practical Activity                                            | Active learning              | Individu homewo     |
|  |  | Practical activ analysis intermediate books                                     | Practical Activity                                            | Active learning              | Individu homewo     |
|  |  | Practical activ analysis s intermediate books                                   | Practical Activity                                            | Active learning              | Individu homewo     |
|  |  | The E-book: importance advantages disadvantages development                     | The E- Book                                                   | Lecture-discussion           | Classroom interacti |
|  |  | Proactivity activity books for intermediate stage                               | The E- Book                                                   | Lecture-discussion           | Classroom interacti |
|  |  | Written test                                                                    | Written test                                                  | Lecture-discussion           | Classroom interacti |

### 11) Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12) Learning and Teaching Resources

Required textbooks (curricular books, if any)

Main references (sources)

Recommended books and references (scientific

Recommended mainstream



|                                 |                                                                |
|---------------------------------|----------------------------------------------------------------|
| journals, reports...)           | books and references<br>(scientific journals, reports<br>etc.) |
| Electronic References, Websites | Electronic references, websites                                |



## Course Description Form

This course description provides a necessary summary of the most important characteristics of the course, the course outputs, and the learning outcomes expected of the student to achieve and prove whether he has benefited from the available learning opportunities. It must be linked to the description of the program;

**1. Course Name**

**Teaching Thinking**

**2. Course Code**

**EPS206**

**3. Semester/Year**

**2025-2026**

**4. Date of Preparation of this description**

**21/9/2025**

**5. Forms of attendance available**

**Face-to-face education**

**6. Number of study hours (total/number of units (total)**

**30 Hours – 1 Unit**

**7. Name of the course administrator (if more than one name is mentioned)**

**Name: Eng. Mariam Yalda Email : [maryamyaldoka@uohamdaniya.edu.iq](mailto:maryamyaldoka@uohamdaniya.edu.iq)**

**8. Course Objectives**

1. Introducing students to the importance of teaching thinking
2. Introducing students to the goals of teaching thinking
3. Enable students to know the types of thinking
4. Recognize thinking skills

Course Objectives

**9- Teaching and Learning Strategies**

- 1- Dialogue, discussion, ideas and questions
- 2- Collaborative Education
- 3- Seminars
- 4- Group Education
- 5- Individual training for students on basic skills
- 6- Liberative testing

Strategy





## 7- Assignment and Class Activities

### 10. Course Structure

| Evaluation Method                      | Teaching Method                  | Unit Name or Subject                             | Required Learning Outcomes                                                              | Hours    | The week |
|----------------------------------------|----------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------|----------|----------|
| Group discussions and direct questions | Discussion and exchange of views | The Historical Development of Thinking Education | Introducing the student to thinking                                                     | One hour | 1        |
| Group discussions and direct questions | Discussion and exchange of views | Definition and function of thinking              | Introducing the student to global thinking standards                                    | One hour | 2        |
| Group discussions and direct questions | Discussion and exchange of views | Characteristics and types of the thought process | Introducing the student to the importance of thinking and the mechanisms of remembering | One hour | 3        |
| Group discussions and direct questions | Discussion and exchange of views | The Importance of Teaching Thinking              | Introducing the student to the barriers to thinking                                     | One hour | 4        |
| Group discussions and direct questions | Discussion and exchange of views | Thinking Education Trends                        | Introduce the student to the types of thinking                                          | One hour | 5        |
| Group discussions and direct questions | Discussion and exchange of views | Basic Teaching Skills                            | Empowering students with teaching thinking methods                                      | One hour | 6        |
| Group discussions and direct questions | Discussion and exchange of views | Thought Processes                                | The Importance of the Concept of Thinking Skills                                        | One hour | 7        |
| Group discussions and direct questions | Discussion and exchange of views | Factors for the success of thinking education    | Introducing students to how to classify thinking teaching skills                        | One hour | 8        |
| Group discussions and                  | Discussion and exchange of views | Barriers to Teaching Thinking                    | Introducing the student to thinking                                                     | One hour | 9        |



|                                        |                                  |                                             |                                                                                                                                       |          |    |
|----------------------------------------|----------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------|----|
| direct questions                       |                                  |                                             |                                                                                                                                       |          |    |
| Group discussions and direct questions | Discussion and exchange of views | A Method and Method for Developing Thinking | Introducing the student to global thinking standards                                                                                  | One hour | 10 |
| Group discussions and direct questions | Discussion and exchange of views | Thinking Teaching Trends and Strategies     | Introducing the student to the importance of thinking and the mechanisms of remembering                                               | One hour | 11 |
| Group discussions and direct questions | Discussion and exchange of views | Thought Patterns                            | Introducing the student to the barriers to thinking                                                                                   | One hour | 12 |
| Group discussions and direct questions | Discussion and exchange of views | Critical Thinking                           | Introduce the student to the types of thinking                                                                                        | One hour | 13 |
| Group discussions and direct questions | Discussion and exchange of views | Creative Thinking and Problem Solving       | Empowering students with teaching thinking methods<br>The Importance of the Concept of Thinking Skills                                | One hour | 14 |
| Group discussions and direct questions | -----                            | -----                                       | First Semester Exam                                                                                                                   | One hour | 15 |
| Group discussions and direct questions | Discussion and exchange of views | Sound Thinking                              | Thinking, what is thinking, how the thinking process works, components (reality, brain, senses, information and previous experiences) | One hour | 16 |
| Group discussions and direct questions | Discussion and exchange of views | Epistemic Thinking                          | Standards of global thinking (Clarity, Accuracy, Accuracy, Relationship, Depth, Breadth, Logic)                                       | One hour | 17 |
| Group discussions and direct questions | Discussion and exchange of views | Product Thinking                            | The Importance of Thinking and Mechanisms of Remembering                                                                              | One hour | 18 |
| Group discussions and                  | Discussion and exchange of views | Thinking Teaching Programs                  | Barriers to thinking                                                                                                                  | One hour | 19 |





|                                        |                                  |                                            |                                                                                                                                       |          |    |
|----------------------------------------|----------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------|----|
| direct questions                       |                                  |                                            |                                                                                                                                       |          |    |
| Group discussions and direct questions | Discussion and exchange of views | Kurdish Program                            | Thinking, what is thinking, how the thinking process works, components (reality, brain, senses, information and previous experiences) | One hour | 20 |
| Group discussions and direct questions | Discussion and exchange of views | The Six Hats Program                       | Standards of global thinking (Clarity, Accuracy, Accuracy, Relationship, Depth, Breadth, Logic)                                       | One hour | 21 |
| Group discussions and direct questions | Discussion and exchange of views | Trees Program                              | The Importance of Thinking and Mechanisms of Remembering                                                                              | One hour | 22 |
| Group discussions and direct questions | Discussion and exchange of views | Ways and Methods to Develop Thinking       | Types of Thinking (Convergent, Distant, Inductive, Deductive, Logical, Felt, Innovative, Critical, Creative 000000)                   | One hour | 23 |
| Group discussions and direct questions | Discussion and exchange of views | Thinking Activities Style Gardens of Ideas | Methods of Teaching Thinking                                                                                                          | One hour | 24 |
| Group discussions and direct questions | Discussion and exchange of views | Practical Applications                     | Introduce the student to the types of thinking skills                                                                                 | One hour | 25 |
| Group discussions and direct questions | Discussion and exchange of views | Brainstorming - Practical Application      | Introducing the student to the skill of fluency                                                                                       | One hour | 26 |
| Group discussions and direct questions | Discussion and exchange of views | Damaged Diaspora                           | Introducing the student to the skill of problem-solving                                                                               | One hour | 27 |
| Group discussions and direct questions | Discussion and exchange of views | Practical Applications                     | Introduce the student to the skill of evidence assessment                                                                             | One hour | 28 |
| Group discussions and                  | Discussion and exchange of views | Mind Maps                                  | Introducing the Student's Personal Options Skills                                                                                     | One hour | 29 |





|                                                                                                                                                                         |       |       |                                                                 |          |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-----------------------------------------------------------------|----------|----|
| direct questions                                                                                                                                                        |       |       |                                                                 |          |    |
| -----                                                                                                                                                                   | ----- | ----- | Final Semester Exam                                             | One hour | 30 |
| 11. Evaluation of the Course                                                                                                                                            |       |       |                                                                 |          |    |
| Distribution of the score out of 100 according to the tasks assigned to the student, such as:<br>Daily Preparation Daily, Oral, Monthly, Written Exams and Reports..... |       |       |                                                                 |          |    |
| 12. Teaching and Learning Resources                                                                                                                                     |       |       |                                                                 |          |    |
| Abu Jado, Saleh, Nofal, Mohammad Bakr, 2007, Teaching Thinking – Theory and Practice, Al-Masirah Publishing House.                                                      |       |       | Required Textbooks                                              |          |    |
| Teaching thinking Sama Turki Dakhil and others                                                                                                                          |       |       | Main References (Sources)                                       |          |    |
| Fathi Abdel Rahman, 11th Edition, 2020, Teaching Thinking - Concepts and Applications, Dar Al-Fikr - Publishers - Beirut.                                               |       |       | Books and References Recommended (Scientific Journals, Reports) |          |    |
|                                                                                                                                                                         |       |       | Electronic References – Websites                                |          |    |



## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Course Name .1</b>                                                           |
| <b>Educational Leadership and Management</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Course Code .2</b>                                                           |
| <b>EPS205</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Semester/Year .3</b>                                                         |
| <b>2026- 2025</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Date of Preparation of This Row .4</b>                                       |
| <b>18/9/2025</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Available Forms of Attendance .5</b>                                         |
| <b>Came</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Number of Hours (Total) / Number of Units (Total) .6</b>                     |
| <b>2 / Total Number ( 50 ) (4)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Name of the course administrator) if more than one name is .7 mentioned)</b> |
| الایم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Muhannad Ahmed Sultan م. م.</b><br><b>mohand.1993@uohamdaniya.edu.iq</b>     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Course Objectives .8</b>                                                     |
| <p>Introducing students to the importance of educational administration</p> <p>Introducing students to the principles of educational administration</p> <p>Enabling students in educational administration, educational administration, school administration, classroom management, educational supervision and administrative processes</p> <p>Identifying Recent Trends in Educational Administration</p> <p>Introducing students to the importance of educational administration</p> <p>Introducing students to the principles of educational administration</p> <p>Enabling students in educational administration, educational administration, school administration, classroom management, educational supervision and administrative processes</p> <p>Identifying Recent Trends in Educational Administration</p> |                                                                                 |

### Teaching and Learning Strategy .9

1. Discussion, presentation of ideas, proverbs, lecture method.
2. Preparing for the process of giving lectures by students and preparing reports on the subject.
3. Collaborative learning, then implementing the critically friendly strategy.
4. Blended Learning
5. Exploration, induction, and brainstorming.

### Course Structure .10

| Evaluation Method        | Teaching Method | Topic Name                    | Required Learning Outcomes                                                                                           | Hours | Week |
|--------------------------|-----------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------|-------|------|
| Oral and written testing | Lecture         | Types of Departments          | Students should be able to understand meaning of Ultra Management and educational                                    | 2     | 1    |
| test Oral and Written    | Lecture         | History of the administration | Students' knowledge of importance of educational administration to clarify Student Duties Educational Administration | 2     | 2    |



|                          |                   |                                |                                                                                                                                       |   |    |
|--------------------------|-------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---|----|
| Oral and written testing | Dialog Discussion | Difference Between Departments | Differentiation between Educational Administration and Educational Differentiation between Educational Administration and educational | 2 | 3  |
| Oral and written testing | Dialog Discussion | العمليات الإدارية              | How its importance and need es in solving their problems                                                                              | 2 | 4  |
| Oral and written testing | Dialog Discussion | Planning Educational           | Knowledge of its concept and types identify his most important duties                                                                 | 2 | 5  |
| Oral and written testing | Dialog Discussion | marshalling Administrative     | Clarification of its concept and types knowledge of its concept and types                                                             | 2 | 6  |
| Oral and written testing | Dialog Discussion | Administrative Guidance        | Knowledge of its concept and types Recognizing His Duties                                                                             | 2 | 7  |
| Oral and written testing | Dialog Discussion | Relations Humanity             | able to build meaningful relationships within the elements of the educational process whether teachers or students                    | 2 | 9  |
| Oral and written testing | Dialog Discussion | Incentives and Communication   | Learn how to use oral or material incentives                                                                                          | 2 | 9  |
| Oral and written testing | Dialog Discussion | valuation & Evaluation         | التعرف على الفرق بين التقويم والتفويم، وكيف استخدامها                                                                                 | 2 | 10 |



|                          |                   |                         |                                                                                              |   |    |
|--------------------------|-------------------|-------------------------|----------------------------------------------------------------------------------------------|---|----|
| Oral and written testing | Dialog Discussion | Study Plan              | differentiate between the plan and planning to identify the conditions Successful Study Plan | 2 | 11 |
| Oral and written testing | Dialog Discussion | Study Plan              | difference Between Daily Plan and monthly and yearly.                                        | 2 | 12 |
| Oral and written testing | Dialog Discussion | Principal               | knowledge of the basics of management Successful School                                      | 2 | 13 |
| Oral and written testing | Dialog Discussion | Crisis Management       | understanding the Concept of Crisis and its causes.                                          | 2 | 14 |
| Oral and written testing | Dialog Discussion | Crisis Management       | Learn how confronting and resolving crises.                                                  | 2 | 15 |
| Oral and written testing | Dialog Discussion | Time Management         | understanding the concept of time how the importance of time management                      | 2 | 16 |
| Oral and written testing | Dialog Discussion | Management Theories     | Understanding management theories Public                                                     | 2 | 17 |
| Oral and written testing | Dialog Discussion | Theories Administrative | knowledge of classical theories                                                              | 2 | 18 |
| Oral and written testing | Dialog Discussion | Theories Administrative | knowledge of Humanistic Theories                                                             | 2 | 19 |
| Oral and written testing | Dialog Discussion | Theories Administrative | knowledge of behavioral theories                                                             | 2 | 20 |





|                                     |                   |                                                                                                                                                                                                                                                                                                                                                    |                       |    |
|-------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----|
| Oral and written testing            | Dialog Discussion | Theories of administrative knowledge of social theories                                                                                                                                                                                                                                                                                            | 2                     | 21 |
| Oral and written testing            | Dialog Discussion | Educational supervision cognize its concept and importance                                                                                                                                                                                                                                                                                         | 2                     | 22 |
| Oral and written testing            | Dialog Discussion | Educational supervision Learn about methods supervision and duties                                                                                                                                                                                                                                                                                 | 2                     | 23 |
| Oral and written testing            | Dialog Discussion | Educational Leadership getting to know its concept and Definitions                                                                                                                                                                                                                                                                                 | 2                     | 24 |
| Oral and written testing            | Dialog Discussion | Similarities between Leadership and Management Knowing Facets Likeness and the difference in detail                                                                                                                                                                                                                                                | 2                     | 25 |
|                                     |                   |                                                                                                                                                                                                                                                                                                                                                    | Course Evaluation .11 |    |
|                                     |                   | Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports.... etc                                                                                                                                                                                |                       |    |
| Learning and Teaching Resources .12 |                   |                                                                                                                                                                                                                                                                                                                                                    |                       |    |
|                                     |                   | Textbooks Methodology                                                                                                                                                                                                                                                                                                                              |                       |    |
|                                     |                   | <p>ources and Approved References/ Khaled Abdullah Dahmash (2016) (2), Educational Administration.</p> <p>dullah Ahmed Ahmed Amarat (2009) The perspective of Al-Kadba for Educational Administration</p> <p>sina Haram (2009) Educational Institutions Management</p> <p>med Battah (2006), Contemporary Issues in Educational Administration</p> |                       |    |





|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>med Mohammed Al Hubaishi (201)Sources</p> <p>1 Approved References/ Khaled Abdullah</p> <p>hmarsh (2016) (2), Educational</p> <p>Administration.</p> <p>dullah Ahmed Ahmed Amarat (2009) The</p> <p>spective of Al-Kadba for Educational</p> <p>Administration</p> <p>sina Haram (2009) Educational Institutions</p> <p>Management</p> <p>med Battah (2006), Contemporary Issues in</p> <p>Educational Administration</p> <p>Ahmed Mohammed Al Hubaishi (201)</p> |
|  | <p>Electronic References and</p> <p>Websites.Electronic References and</p> <p>Websites.</p>                                                                                                                                                                                                                                                                                                                                                                          |
|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 1. Course name:                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | Crimes of the Baath regime in Iraq                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 2. Course code:                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | UOH203                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 3. Semester/Year:                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 2025-2026                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 4. Date of preparation of this description:                |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 09/21/2025                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 5. Available forms of attendance:                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | In-person education                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 6. Number of study hours (total) / Number of units (total) |
|                                                                                                                                                                                                                                                                                                                                                                                                                 | 30 hours / (2) units                                       |
| 7. Name of the course administrator (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                        |                                                            |
| Name: Assistant Teacher. Dilshad Mohammed Zara. Email:<br>dilshad.harki@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                      |                                                            |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                            |                                                            |
| <p style="text-align: center;"><b>The course aims to introduce students to:</b></p> <p style="text-align: center;"><b>Educational psychology, its concept and objective.</b></p> <p>Introducing students to the crimes of the Baath regime in Iraq, such as the mass graves in Iraq before 2003. Providing the opportunity to understand the details of one of the darkest periods in modern Iraqi history.</p> | Course objectives                                          |
| 9. Teaching and learning strategies                                                                                                                                                                                                                                                                                                                                                                             |                                                            |
| <p>1. Understanding the nature of the ruling system during the rule of the Ba'ath Party in Iraq. 2. Informing students about the magnitude of the crimes committed by the Ba'ath Party in Iraq. 3. Developing students' knowledge about the darkest period in contemporary Iraqi history. B - The specific skills objectives of the course.</p>                                                                 | Strategy                                                   |

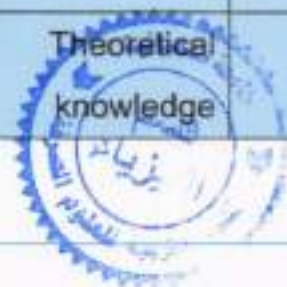


|                               |                                         |                                                                                                           | 10. Course structure       |       |            |
|-------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------|-------|------------|
| Evaluation method             | Learning method                         | Name of the unit or topic                                                                                 | Required learning outcomes | hours | week       |
| Feedback via direct questions | The lecture and discussion and dialogue | The crimes concepts and its classification                                                                | Theoretical knowledge      | 1     | the first  |
| Feedback via direct questions | The lecture and discussion and dialogue | The crimes classification and the Baath regime crimes according to the Iraqi Criminal Court documentation | Theoretical knowledge      | 1     | the second |
| Feedback via direct questions | The lecture and discussion and dialogue | The International Crimes Types                                                                            | Theoretical knowledge      | 1     | the third  |
| Feedback via direct questions | The lecture and discussion and dialogue | The Verdicts of the Iraqi Criminal Court regarding Halabja and Dijil Trials                               | Theoretical knowledge      | 1     | Fourth     |





|                                          |                                         |                                                                                                        |                          |   |            |
|------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------|---|------------|
| Feedback via direct questions            | The lecture and discussion and dialogue | Anfal<br>Genocides<br>crime and the<br>executions of<br>several Iraqi<br>Merchants                     | Theoretical<br>knowledge | 1 | Fifth      |
| Feedback via direct questions            | The lecture and discussion and dialogue | The oppression<br>of the<br>Shabbaniya<br>uprising and<br>the dismissal<br>of the religious<br>parties | Theoretical<br>knowledge | 1 | Sixth      |
| Feedback via direct questions            | The lecture and discussion and dialogue | The Legal<br>Interest<br>Protection in<br>the society                                                  | Theoretical<br>knowledge | 1 | Seventh    |
| Feedback through questions<br>Direct Rah | The lecture and discussion and dialogue | The<br>Psychological<br>crimes and its<br>types                                                        | Theoretical<br>knowledge | 1 | The eighth |
| Feedback via direct questions            | The lecture and discussion and dialogue | The effect of<br>the<br>Psychological<br>crimes                                                        | Theoretical<br>knowledge | 1 | Ninth      |
| Extracurricular activities               | The lecture and discussion and dialogue | The societal<br>crimes                                                                                 | Theoretical<br>knowledge | 1 | tenth      |



|                               |                                         |                                                                 |  |                       |   |            |
|-------------------------------|-----------------------------------------|-----------------------------------------------------------------|--|-----------------------|---|------------|
| Feedback via direct questions | The lecture and discussion and dialogue | The role of the Baath Regime with regards to the Islam 1        |  | Theoretical knowledge | 1 | eleven th  |
| Feedback via direct questions | The lecture and discussion and dialogue | The role of the Baath Regime with regards to the Islam 2        |  | Theoretical knowledge | 1 | twelfth    |
| Feedback via direct questions | The lecture and discussion and dialogue | Human Rights Violation and the Authority crimes                 |  | Theoretical knowledge | 1 | thirteenth |
| Feedback via direct questions | Lecture and discussion                  | The Baath Regime oppression towards Iraqi People                |  | Theoretical knowledge | 1 | fourteenth |
| Feedback via direct questions | Lecture and discussion                  | Monthly Exam                                                    |  | Theoretical knowledge | 1 | fifteenth  |
| Feedback via direct questions | Lecture, discussion and dialogue        | Prisons and detentions center's location under the Baath regime |  | Theoretical knowledge | 1 | Week 16    |





|                               |                                                  |                                         |                       |   |                    |
|-------------------------------|--------------------------------------------------|-----------------------------------------|-----------------------|---|--------------------|
| Feedback via direct questions | Lecture, discussion and dialogue                 | Environmental crimes under Baath Regime | Theoretical knowledge | 1 | Seven teenth week  |
| Feedback via direct questions | Lecture, discussion and dialogue                 | Usage of Internationally Banned Weapons | Theoretical knowledge | 1 | Eighte enth week   |
| Feedback via direct questions | Lecture, discussion and dialogue                 | Radiation Spreading under Baath Regime  | Theoretical knowledge | 1 | Ninete enth week   |
| Feedback via direct questions | Lecture, discussion and dialogue                 | Cities Demolition                       | Theoretical knowledge | 1 | Week twenti eth    |
| Feedback via direct questions | Brainstorming, discussion and lecture techniques | Marshals Drying                         | Theoretical knowledge | 1 | Week twenty -one   |
| Feedback via direct questions |                                                  | Agricultural Farms Demolition           | Theoretical knowledge | 1 | Week twenty -two   |
| Feedback via direct questions | Discussion and dialogue                          | Graveyards Crimes 1                     | Theoretical knowledge | 1 | Week twenty -three |
| Feedback via direct questions | Discussion and dialogue                          | Graveyards Crimes 2                     | Theoretical knowledge | 1 | Week twenty -four  |
| Feedback via direct questions | Discussion and dialogue                          | Events 1979–2003                        | Theoretical knowledge | 1 | Week twenty -five  |
| Feedback via direct questions | Discussion and dialogue                          | Timelapse of graveyards 1963–2003       | Theoretical knowledge | 1 | Week 26            |





|                                   |                         |                                         |                       |   |         |
|-----------------------------------|-------------------------|-----------------------------------------|-----------------------|---|---------|
| Feedback via direct questions     | Discussion and dialogue | Iraqi-Iranian War crimes                | Theoretical knowledge | 1 | Week 27 |
| Feedback via direct questions     | Discussion and dialogue | Crimes against the Kurds                | Theoretical knowledge | 1 | Week 28 |
| Feedback via direct questions     | Discussion and dialogue | Crimes against the Shaabanyiah uprising | Theoretical knowledge | 1 | Week 29 |
| By evaluating a practical session | Discussion and dialogue | Monthly Exam                            | Theoretical knowledge | 1 | Week 30 |

#### 11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

The score for the first semester is (25) points, the theoretical exam is (25) points, including attendance and participation. The score for the second semester is (25) points, the theoretical exam is (25) points, including attendance and participation. The score for the final exam is (50) points for the theoretical exam. The total becomes (100) points.



## Course Description Form

|    |                                                                                                                                                                                                                                                                               |                   |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1. | Course Name:                                                                                                                                                                                                                                                                  |                   |
|    | <b>Advanced Electrical &amp; Magnetic</b>                                                                                                                                                                                                                                     |                   |
| 2. | Course Code:                                                                                                                                                                                                                                                                  |                   |
|    | <b>PHY210</b>                                                                                                                                                                                                                                                                 |                   |
| 3. | Chapter/Year:                                                                                                                                                                                                                                                                 |                   |
|    | <b>2025-2026</b>                                                                                                                                                                                                                                                              |                   |
| 4. | Date of preparation of this description:                                                                                                                                                                                                                                      |                   |
|    | <b>1/9/2025</b>                                                                                                                                                                                                                                                               |                   |
| 5. | Available Attendance Formats:                                                                                                                                                                                                                                                 |                   |
|    | <b>Face-to-face education</b>                                                                                                                                                                                                                                                 |                   |
| 6. | Number of Hours (Total) / Number of Credits (Total)                                                                                                                                                                                                                           |                   |
|    | <b>60 Hours/5 Units</b>                                                                                                                                                                                                                                                       |                   |
| 7. | Course administrator name (if more than one name mentioned)                                                                                                                                                                                                                   |                   |
|    | <b>Name: a.t. Ahmed turki abdulhameed</b><br><b><a href="mailto:phy.ahmedturki@uohamdaniya.edu.iq">phy.ahmedturki@uohamdaniya.edu.iq</a></b>                                                                                                                                  |                   |
| 8. | Course Objectives                                                                                                                                                                                                                                                             |                   |
|    | Introduce students to the basic theories and concepts in the science of electricity and magnetism and the laws that link them, through which the student can understand the proofs and solve problems related to the sciences of electricity and magnetism.                   | Course Objectives |
| 9. | Teaching and Learning Strategies                                                                                                                                                                                                                                              |                   |
|    | 1- Promote a deep understanding of the concepts of electricity and magnetism and their relationship to nature and other sciences.<br>2- Develop the ability to analyze problems related to electric current and magnetic fields and understand the phenomena related to them. | Strategy          |





|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>3- Enable students to understand the practical applications of electricity and magnetism concepts in fields such as electrical engineering, electronics, communications, and renewable energy.</p> <p>4- Develop the computational skills needed to solve complex physical problems, as well as enhance experimental skills through practical experiments and data analysis.</p> <p>Interaction and Communication: Encourage interaction and communication between students by discussing concepts and solving physical problems collectively</p> |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

#### 10. Course Structure

| Evaluation Method | Learning method                  | Unit Name or Subject                                                               | Required Learning Outcomes                | Hours | Week   |
|-------------------|----------------------------------|------------------------------------------------------------------------------------|-------------------------------------------|-------|--------|
| Direct Questions  | Lecture, Discussion and Dialogue | Magnetic Field - Magnetic Flux - Motion of Charged Particles in the Magnetic Field | Theoretical Knowledge<br>Applied Analysis | 2     | First  |
| Direct Questions  | Lecture, Discussion and Dialogue | Thomsen's experiment - the magnetic force acting on electric current               | Theoretical Knowledge<br>Applied Analysis | 2     | Second |
| Direct Questions  | Lecture, Discussion and Dialogue | Torque                                                                             | Theoretical Knowledge<br>Applied Analysis | 2     | Third  |





|                  |                                  |                                                                                                           |                                                         |   |         |
|------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---|---------|
| Direct Questions |                                  | Solving the First Chapter Questions                                                                       | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Fourth  |
| Direct Questions | Lecture, Discussion and Dialogue | DC-Kelvanometers -Suspended Coil Kelvanometer                                                             | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | V       |
| Direct Questions | Lecture, Discussion and Dialogue | DC Ammeter - DC Voltmeter                                                                                 | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Sixth   |
|                  |                                  | Solving Second Semester Questions                                                                         |                                                         | 2 | Seventh |
| Direct Questions | Lecture, Discussion and Dialogue | Magnetic Fields Arising from Current-Carrying Wires - Biot's Law and Ampere's Law                         | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Eighth  |
| Direct Questions | Lecture, Discussion and Dialogue | Applications to Biot's Law and Ampere's Law for Straight Wire - Magnetic Field Arising from Circular Wire | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Ninth   |
| Direct Questions | Lecture, Discussion and Dialogue | Ampere's Law - Applications to Ampere's Law                                                               | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | X       |



|                  |                                  |                                                                                              |                                           |   |                |
|------------------|----------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------|---|----------------|
| Direct Questions | Lecture, Discussion and Dialogue | Magnetic Field of Long Cylindrical Wire                                                      | Theoretical Knowledge<br>Applied Analysis | 2 | Eleventh       |
| Direct Questions | Lecture, Discussion and Dialogue | Magnetic field of a helical coil                                                             | Theoretical Knowledge<br>Applied Analysis | 2 | Twelfth        |
| Direct Questions | Lecture, Discussion and Dialogue | Magnetic field of a cyclic helical coil                                                      | Theoretical Knowledge<br>Applied Analysis | 2 | Thirteenth     |
| Direct Questions | Lecture, Discussion and Dialogue | The mutual force between two parallel wires                                                  | Theoretical Knowledge<br>Applied Analysis | 2 | Fourteenth     |
|                  |                                  | Solving Third Semester Questions                                                             |                                           | 2 | Fifteenth      |
| Direct Questions | Lecture, Discussion and Dialogue | Electromagnetic Induction - Faraday's Law - Kinetic Induced Electromotive Force - Lens's Law | Theoretical Knowledge<br>Applied Analysis | 2 | Sixteenth week |
| Direct Questions | Lecture, Discussion and Dialogue | Measuring the Magnetic Field Strength Using the Research-Generator                           | Theoretical Knowledge<br>Applied Analysis | 2 | Week Seventeen |





|                  |                                  |                                                                                        |                                                         |   |                   |
|------------------|----------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------|---|-------------------|
| Direct Questions | Lecture, Discussion and Dialogue | Variable magnetic fields                                                               | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Week Eighteenth   |
| Direct Questions | Lecture, Discussion and Dialogue | Inductive property                                                                     | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Week Nineteen     |
| Direct Questions | Lecture, Discussion and Dialogue | Current growth and decay in a circuit consisting of inductor and resistor respectively | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Week 20           |
| Direct Questions | Lecture, Discussion and Dialogue | Stored energy in the magnetic-cross-induction field                                    | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Week 21           |
| Direct Questions | Lecture, Discussion and Dialogue | Electrical Transformer - Transmission of Power to Long Distances                       | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Week 22           |
|                  |                                  | Solving Chapter Four Questions                                                         |                                                         | 2 | Week Twenty Three |
| Direct Questions | Lecture, Discussion and Dialogue | AC Basics                                                                              | <b>Theoretical Knowledge</b><br><b>Applied Analysis</b> | 2 | Week Twenty Four  |



|                  |                                  |                                                                                                                         |                                           |   |                   |
|------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---|-------------------|
| Direct Questions | Lecture, Discussion and Dialogue | Voltages – Phase                                                                                                        | Theoretical Knowledge<br>Applied Analysis | 2 | Week Twenty Five  |
| Direct Questions | Lecture, Discussion and Dialogue | Shedding sine voltages on pure resistor - Shedding voltages on pure expander - Shedding sine voltages on pure inductor  | Theoretical Knowledge<br>Applied Analysis | 2 | Week Twenty Six   |
| Direct Questions | Lecture, Discussion and Dialogue | Effective Alternating Current Value - Average Effective Current Value - Electrical Power                                | Theoretical Knowledge<br>Applied Analysis | 2 | Week twenty seven |
| Direct Questions | Discussion and Dialogue          | Expanded Coil Resistance Circuit Sequential Splicing- Capacity in Circuit Resistive Coil Expandable Sequential Splicing | Theoretical Knowledge<br>Applied Analysis | 2 | Week Twenty Eight |
| Direct Questions | Discussion and Dialogue          | Resonance in a straight circuit - a circuit resisting a parallel splicing expanded coil                                 | Theoretical Knowledge<br>Applied Analysis | 2 | Week twenty ninth |



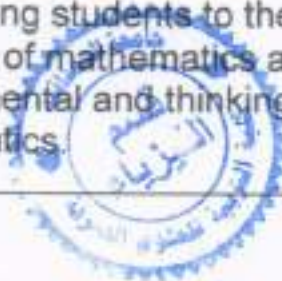
|                                                                                                                                                                                                                                                                                             |  |                                      |                                                                 |   |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------|-----------------------------------------------------------------|---|------------|
|                                                                                                                                                                                                                                                                                             |  | Solving<br>Chapter Five<br>Questions |                                                                 | 2 | Week<br>30 |
| 11. Course Evaluation                                                                                                                                                                                                                                                                       |  |                                      |                                                                 |   |            |
| Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports.... etc                                                                                                                         |  |                                      |                                                                 |   |            |
| 12. Learning and Teaching Resources                                                                                                                                                                                                                                                         |  |                                      |                                                                 |   |            |
| <ul style="list-style-type: none"> <li>Fundamentals of Electricity and Magnetism, Author : Yahya Abdel Hamid Al-Hajj Ali</li> </ul>                                                                                                                                                         |  |                                      | Required textbooks (methodology if available)                   |   |            |
| 1- Introduction to Electromagnetism and Magnetism, by Dr.Mona Abdel Karim Al-Khashab, Dr.Kazem Ahmed Mohammed<br>2- Electricity and Magnetism, Part Two, Author: Ibrahim Nasser Ibrahim Fundamentals of Electromagnetic Theory, Translated by: Yahya Abdel Hamid Al-Hajj Ali, Rahman Rustom |  |                                      | Primary References (Sources)                                    |   |            |
| Follow up on electronic and internet references that include solid scientific websites and library websites in some international universities                                                                                                                                              |  |                                      | Recommended Books and References (Scientific Journals, Reports) |   |            |
| Websites related to electricity and magnetism                                                                                                                                                                                                                                               |  |                                      | References, Websites                                            |   |            |





## Course Description Form

|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| mathematics                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Course Code:                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PHY209                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3. Semester / Year:                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Yearly                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. Description Preparation Date:                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 2025/9/19                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. Available Attendance Forms:                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Attendance                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 90 HOURS/ 6 UNITS                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 7. Course administrator's name (mention all, if more than one name)                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Name: A.PROF. Rajaa Abdullah Basheer                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Email: <a href="mailto:ragaa.habsh@uohamdaniya.edu.iq">ragaa.habsh@uohamdaniya.edu.iq</a> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Course Objectives                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Course Objectives                                                                         | <p>A. Introducing students to the basic principles of mathematics, which are relevant to all fields of mathematics and its applications, including engineering applications and all branches of science.</p> <p>B. Providing students with the skills that enable them to teach mathematics.</p> <p>C. Working to enable students to acquire the skills to conduct scientific research in the field of mathematics.</p> <p style="text-align: right;">C. Introducing students to the importance of mathematics and acquiring mental and thinking skills in mathematics.</p> |





## 9. Teaching and Learning Strategies

|          |                                                                                                                                                                                                                                                                                                                                                                |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategy | <p>1. Providing students with information and concepts in physics and mathematics. Preparing trained and qualified personnel to work in institutions.</p> <p>2. Identifying the scientific applications of each scientific knowledge.</p> <p>3. Identify the different types of scientific knowledge, including facts, concepts, principles, and theories.</p> |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure

| Week | Hours    | Required Learning Outcomes                                                | Unit or subject name          | Learning method                  | Evaluation method                  |
|------|----------|---------------------------------------------------------------------------|-------------------------------|----------------------------------|------------------------------------|
| 1    | 3 Theor  | Displaying the curriculum vocabulary, the student learns about sequences. | Finite and infinite sequences | Lecture, discussion and dialogue | Direct questions + solved examples |
| 2    | 3 Theor  | The student learns the ends of sequences.                                 | limit                         | Lecture, discussion and dialogue | Direct questions + solved examples |
| 3    | 3 Theor  | The student learns about finite and infinite series.                      | infinite series               | Lecture, discussion and dialogue | Exam + Solutions to Examples       |
| 4    | 3 Theor  | The student learns how to solve series.                                   | infinite series               | Lecture, discussion and dialogue | Direct questions + solved examples |
| 5    | 3 Theor  | The student learns about geometric series.                                | geometric series              | Lecture, discussion and dialogue | Direct questions                   |
| 6    | 3 Theor  | The student learns methods of testing series.                             | Test of Convergent            | Lecture, discussion and dialogue | Direct questions                   |
| 7    | 3 Theory | The student learns how to conduct an integration test.                    | Integrat testi                | Lecture, discussion and dialogue | exam                               |
| 8    | 3 Theory | The student learns how to conduct a comparison test.                      | Comparison test               | Lecture, discussion and dialogue | Direct questions                   |
| 9    | 3 Theory | The student learns how to test the ratio.                                 | ratio test                    | Lecture, discussion and dialogue | Direct questions                   |
| 10   | 3 Theory | The student learns about the convergence of exponential series.           | Power series                  | Lecture, discussion and dialogue | Direct questions+ exam             |
| 11   | 3 Theory | Tyler series solution method                                              | Tyler series                  | Lecture, discussion and dialogue | Direct questions                   |
| 12   | 3 Theory | How to solve with Maclaurin series                                        | Maclaurin series              | Lecture, discussion and dialogue | Direct questions                   |

|    |             |                                                                                                                |                                                                           |                                  |                                    |
|----|-------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------|------------------------------------|
| 13 | 3<br>Theory | How to apply the binomial series to find roots                                                                 | binomial series                                                           | Lecture, discussion and dialogue | Direct questions                   |
| 14 | 3<br>Theory | Learn about vectors and vector units, adding and subtracting vectors                                           | Vectors                                                                   | Lecture, discussion and dialogue | Solving examples                   |
| 15 | 3<br>Theory | Learn how to multiply vectors and find areas and volumes.                                                      | Vector multiplication methods                                             | Lecture, discussion and dialogue | Exam                               |
| 16 | 3<br>Theory | Partial derivatives with two or more variables                                                                 | Partial derivatives                                                       | Lecture, discussion and dialogue | Direct questions + solved examples |
| 17 | 3<br>Theory | Learn about gradient, skew, divergence, and Laplacian functions and the partial vector derivative.             | Slope, divergence, involution, and partial vector derivative of functions | Lecture, discussion and dialogue | Direct questions + solved examples |
| 18 | 3<br>Theory | Learn how to solve using the chain rule for partial derivatives.                                               | chain rule                                                                | Lecture, discussion and dialogue | Solve examples + exam              |
| 19 | 3<br>Theory | First-order differential equations and methods of solving them. Degree and order of the differential equation. | Methods of separating variables                                           | Lecture, discussion and dialogue | Direct questions + solved examples |
| 20 | 3<br>Theory | How to solve homogeneous equations                                                                             | homogeneous equations                                                     | Lecture, discussion and dialogue | Direct questions + solved examples |
| 21 | 3<br>Theory | How to solve exact differential equations                                                                      | Exact equations                                                           | Lecture, discussion and dialogue | Direct questions + solved examples |
| 22 | 3<br>Theory | How to solve linear equations                                                                                  | linear equations                                                          | Lecture, discussion and dialogue | Direct questions + solved examples |
| 23 | 3<br>Theory | Second order equations                                                                                         | Second order differential equations                                       | Lecture, discussion and dialogue | Quiz                               |





|    |             |                                                              |                                                 |                                  |                                           |
|----|-------------|--------------------------------------------------------------|-------------------------------------------------|----------------------------------|-------------------------------------------|
| 24 | 3<br>Theory | homogeneous of the second degree                             | Homogeneous second-order differential equations | Lecture, discussion and dialogue | Direct questions + solved examples        |
| 25 | 3<br>Theory | Identifying nonhomogeneous equations                         | nonhomogeneous differential equations           | Lecture, discussion and dialogue | Direct questions + solved examples        |
| 26 | 3<br>Theory | Learn how to solve first-degree and second-degree equations. | Differential equations with dependent variables | Lecture, discussion and dialogue | Direct questions + solved examples + Quiz |
| 27 | 3<br>Theory | Solving non-dependent differential equations                 | Equations with non-dependent variables          | Lecture, discussion and dialogue | Direct questions + solved examples        |
| 28 | 3<br>Theory | Second order equations                                       | Bernoulli's equation                            | Lecture, discussion and dialogue | Direct questions                          |
| 29 | 3<br>Theory | Learn about Laplace transforms                               | Laplace transforms                              | Lecture, discussion and dialogue | Direct questions + solved examples        |
| 30 | 3<br>Theor  | Inverse Laplace Transforms                                   |                                                 | Lecture, discussion and dialogue | solved examples                           |

### 11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, homework, daily, oral, monthly and written exams, reports, etc.

### 12. Learning and Teaching Resources

|                                               |                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | <p>Mathematical Physics, by Ma'an Abdul Majeed Ibrahim,<br/>First Edition, 2000</p> <p>Partial Differential Equations for Scientific and Engineering Colleges, by S. G. Farlow, translated by Dr. Atallah Thamer Al-Ani, University of Baghdad, Bayt Al-Hikma.</p> <p>1- Calculus and Analytic Geometry by George Thomas, 7th Edition.</p> |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|





|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                    | <p>2- Schaum's Outline of Theory and Problems of Advanced Calculus, 2nd Edition by Robert Wrede and Murray R. Spiegel, 2002</p> <p>3- Differential Equations with Boundary Value Problems, 2nd Edition, by John Polking, Albert Boggess, and David Arnold, 2006</p> <p>5- A First Course in Differential Equations, with Modeling Applications, 8th Edition by Dennis G. Zill, 2005</p> |
| Main references (sources)                                          |                                                                                                                                                                                                                                                                                                                                                                                         |
| Recommended books and references (scientific journals, reports...) | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities.                                                                                                                                                                                                                                    |
| Electronic References, Websites                                    | Websites about mathematics                                                                                                                                                                                                                                                                                                                                                              |



## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Optical physics</b>                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| PHY208                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| سنوي                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4. Description Preparation Date:                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 24/9/2025                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| تعليم حضوري                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 90 HOURS/ 7 UNITS                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Name: Shaimaa Haithem Zaki                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Email: shaimahaithemalkady@uohamdaniya.edu.iq                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Course Objectives                                                   | <p>This is an introductory course on optics geometrical and wave optics focusing on fundamental concepts, principles and techniques.</p> <p>1- The first course will introduce basic electromagnetic, mirrors, lenses, thick mirror, thick lenses, aberrations in mirror and lenses</p> <p>2- The second course covers wave optics focusing on interference and its experiment, diffraction and its experiments, polarization and its types and methods for obtaining it.</p> |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Strategy                                                            | <p>Course Intended Outcomes</p> <p>1- Be able to explain the theories which interpret the nature of light.</p>                                                                                                                                                                                                                                                                                                                                                                |



- 2- Be able to explain image properties by calculations and graphically.
  - 3- Be able to contrast between different types of lens
  - 4- Be able to describe the interference and diffraction in addition to the method for obtaining them.
  - 5- Be able to describe polarized and unpolarized light
  - 6- Be able to describe the type of polarization light.
- Be able to describe the methods of obtaining the polarization light.

#### 10. Course Structure

| Week   | Hours | Required Learning Outcomes                                                               | Unit or subject name | Learning method                                                                 | Evaluation method |
|--------|-------|------------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------|-------------------|
| الاول  | 3     | View syllabus of the article , Introduction to optical physics                           |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |
| الثاني | 3     | Concept of ray of light, Light physics and properties, Light waves, Electromagnetic wave |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |
| الثالث | 3     | Waves, Types of Waves, , Electromagnetic wave , Vocabulary/Definitions,                  |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |
| الرابع | 3     | Types of Electromagnetic , wave, Longitudinal waves, Transverse waves,                   |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |
| الخامس | 3     | The Electromagnetic Spectra , Wavelength, Frequency,                                     |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |
| السادس | 3     | Speed of Light and Refractive Index, Solving Examples                                    |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |
| السابع | 3     | Exam                                                                                     |                      |                                                                                 |                   |
| الثامن | 3     | , Propagation of light, reflection, laws of reflection,                                  |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |
| التاسع | 3     | Regular reflection and irregular reflection of light, Plane mirrors, H.W                 |                      | إلقاء المحاضرة من خلال السبورة و<br>شاشات العرض مع المشاركة<br>التفاعلية للطلبة | الأسئلة المباشرة  |





|                    |   |                                                                                           |                                                                           |                  |
|--------------------|---|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------|
| العاشر             | 3 | Refraction, Law of refraction of light, Total Internal Reflection, Solving Examples       | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الحادي عشر         | 3 | Concave mirror, Convex mirror, Spherical mirror equation, Solving Examples                | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الثاني عشر         | 3 | The principle of Reversibility, Fermat's principle, Spherical surface, Spherical Mirrors  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الثالث عشر         | 3 | Exam                                                                                      |                                                                           |                  |
| الرابع عشر         | 3 | Lenses, Types of lenses: convex lens, Concave lenses,                                     | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الخامس عشر         | 3 | Ray Diagrams for Lenses , Image Formation by Convex Lens, Image Formation by Concave Lens | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع السادس عشر | 3 | Lens Maker Formula, Solving Examples, The power of the thin lens, Aberration,             | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |



|                         |   |                                                                                             |  |                                                                           |                  |
|-------------------------|---|---------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------|------------------|
| الاسبوع السابع عشر      | 3 | Defects of Spherical Lenses, Kind of aberration, Spherical aberration, Chromatic aberration |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع الثامن عشر      | 3 | Optical instruments, Applications of Lenses, Lenses in Eyes                                 |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع التاسع عشر      | 3 | , Focusing images , Vision Correction, Nearsightedness and farsightedness                   |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع العشرون         | 3 | , Astigmatism, Refracting Telescopes, Microscopes,                                          |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع الحادي والعشرون | 3 | Exam                                                                                        |  |                                                                           |                  |
| الاسبوع الثاني والعشرون | 3 | Solving Examples Interference and Diffraction of light, Double-slit interference,           |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع الثالث والعشرون | 3 | Coherent Waves, Measuring the wavelength of light .Solving Examples                         |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع الرابع والعشرون | 3 | , Diffraction, Single-Slit Diffraction, Diffraction pattern, Solving examples,.             |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع الخامس والعشرون | 3 | Diffraction Gratings, Measuring wavelength,                                                 |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع اساتس والعشرون  | 3 | Solving Examples                                                                            |  | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |



|                         |   |                                                   |                                                                           |                  |
|-------------------------|---|---------------------------------------------------|---------------------------------------------------------------------------|------------------|
| الاسبوع السابع والعشرون | 3 | Resolving Power of Lenses, , Rayleigh Criterion , | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع الثامن والعشرون | 3 | Polarization                                      | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 3 | article review                                    | إلقاء المحاضرة من خلال السبورة و شاشات العرض مع المشاركة التفاعلية للطلبة | الأسئلة المباشرة |
| الاسبوع الثلاثون        | 3 | Exam                                              |                                                                           |                  |

#### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

#### 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                                               |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | -Fundamentals of Optics; 1 -F. A. Jenkins and H. E. White, McGraw-Hill Priml Custom Publishing, 2001.                                                                         |
| Main references (sources)                                          | 1. principle of optics and application by Sharma 2006<br>2. Miles V. Klein and Thomas E. Furtak, Optics, 2nd ed. 1986                                                         |
| Recommended books and references (scientific journals, reports...) | 1- Optics: Principles and Applications, Elsevier Inc(2006)<br>2- Optics, 4th edition, Addison Wesley,(2002[<br>3- Modern Optics, 1st edition, John Wiley and Sons, Inc.(1990) |
| Electronic References, Websites                                    | متابعه المراجع الإلكترونية والأترنت التي تتضمن المواقع الإلكترونية العلمية الرصيلة ومواقع المكتبات في بعض الجامعات العالمية                                                   |





## Course Description Form

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Sound and Wave Motion                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>2. Course Code:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| PHY211                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>3. Semester / Year:</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2025-2026                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>4. Description Preparation Date:</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 20/9/2025                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>5. Available Attendance Forms:</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| In-person Education                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 60 hours / 2 units                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Name: Assit.Lect. Islam Nasser Yousif                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Email: islam-nasser@uohamdaniya.edu.iq                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>8. Course Objectives</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Course Objectives</b>                                                   | <p>Skill-based Objectives of the Sound Course for Second-Year Physics Students may include the following:</p> <ol style="list-style-type: none"> <li>1. Understanding the concepts of sound: The ability to comprehend the wave nature of sound and the fundamental concepts such as wave, frequency, and wavelength.</li> <li>2. Analyzing the behavior of sound waves: Understanding and analyzing the behavior of sound, how it propagates in different media, and its effect on the surrounding environment.</li> <li>3. Understanding the applications of sound: The ability to grasp and understand the applications of sound in various fields such as audio and video technology, and industrial acoustics.</li> <li>4. Interaction: The ability to interact with the surrounding acoustic environment and sound applications.</li> </ol> |
| <b>9. Teaching and Learning Strategies</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Strategy</b>                                                            | <ol style="list-style-type: none"> <li>1. Understanding the nature of sound waves: Comprehending the fundamentals of sound as a wave phenomenon and understanding the relationship between sound speed, frequency, and wavelength.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



2. Analyzing sound and its behavior: The ability to analyze the behavior of sound, including reflection, refraction, propagation, and diffraction in the presence of obstacles.
3. Interaction with the acoustic environment: The ability to interact with the surrounding acoustic environment and understand its effects on humans and the environment.
4. Empowering students: Enabling students to acquire knowledge and understanding of scientific laws in physics, practical applications of physics, logical and scientific analysis, and interpretation of physical phenomena.

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes                 | Unit or subject name                                                                                                 | Learning method              | Evaluation method           |
|------|-------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|
| 1    | 2     | Theoretical knowledge and applied analysis | Basic concepts of wave motion, means of energy transfer, characteristics of mechanical wave motion                   | Lecture, discussion dialogue | Direct questions            |
| 2    | 2     | Theoretical knowledge and applied analysis | Types of wave motion, kind of mechanical waves, basic properties of mechanical wave transmission                     | Lecture, discussion dialogue |                             |
| 3    | 2     | Theoretical knowledge and applied analysis | Transmission of mechanical wave motion                                                                               | Lecture, discussion dialogue |                             |
| 4    | 2     | Theoretical knowledge and applied analysis | Waves in vibrating strings, waves in a helical spring                                                                | Lecture, discussion dialogue |                             |
| 5    | 2     | Theoretical knowledge and applied analysis | Waves on liquid surfaces, sound waves                                                                                | Lecture, discussion dialogue |                             |
| 6    | 2     | Theoretical knowledge and applied analysis | Simple explanation using a piston, properties of sound waves in a piston                                             | Lecture, discussion dialogue |                             |
| 7    | 2     | Theoretical knowledge and applied analysis | Wave velocity and particle velocity, mathematical representation of wave motion                                      | Lecture, discussion dialogue |                             |
| 8    | 2     | Theoretical knowledge and applied analysis | Theory of free vibration, oscillatory motion, simple harmonic motion                                                 | Lecture, discussion dialogue |                             |
| 9    | 2     | Theoretical knowledge and applied analysis | Equation of linear harmonic motion, energy of a simple harmonic oscillator, average kinetic energy of the oscillator | Lecture, discussion dialogue |                             |
| 10   | 2     | Theoretical knowledge and applied analysis | Applications of simple harmonic motion: simple pendulum, floating body                                               | Lecture, discussion dialogue | In addition to monthly exam |
| 11   | 2     | Theoretical knowledge and applied analysis | Liquid in a U-tube, transverse vibration of a particle in a stretched string                                         | Lecture, discussion dialogue |                             |
| 12   | 2     | Theoretical knowledge and applied analysis | Longitudinal vibration of a body between two identical springs, piston oscillation in a cylinder containing gas      | Lecture, discussion dialogue |                             |





|    |   |                                            |                                                                                                      |                               |              |
|----|---|--------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------|--------------|
| 13 | 2 | Theoretical knowledge and applied analysis | Resonator, theory of the resonator                                                                   | Lecture, discussion, dialogue |              |
| 14 | 2 | Theoretical knowledge and applied analysis | Simple angular harmonic motion, torsional pendulum                                                   | Lecture, discussion, dialogue |              |
| 15 | 2 | Theoretical knowledge and applied analysis | Compound pendulum                                                                                    | Lecture, discussion, dialogue |              |
| 16 | 2 | Theoretical knowledge and applied analysis | Superposition of simple harmonic motions, principle of superposition                                 | Lecture, discussion, dialogue |              |
| 17 | 2 | Theoretical knowledge and applied analysis | Result of combining two harmonic motions in the same line                                            | Lecture, discussion, dialogue |              |
| 18 | 2 | Theoretical knowledge and applied analysis | Superposition of two harmonic motions in perpendicular directions, Lissajous figures                 | Lecture, discussion, dialogue |              |
| 19 | 2 | Theoretical knowledge and applied analysis | Graphical method of superposition of two perpendicular harmonic motions with equal angular frequency | Lecture, discussion, dialogue |              |
| 20 | 2 | Theoretical knowledge and applied analysis | Superposition of two perpendicular motions when one frequency is double the other                    | Lecture, discussion, dialogue |              |
| 21 | 2 | Theoretical knowledge and applied analysis | Beats                                                                                                | Lecture, discussion, dialogue |              |
| 22 | 2 | Theoretical knowledge and applied analysis | Damped oscillation, damping force                                                                    | Lecture, discussion, dialogue | Monthly exam |
| 23 | 2 | Theoretical knowledge and applied analysis | Equation of damped motion, solution of the damped harmonic oscillator equation                       | Discussion, dialogue          |              |
| 24 | 2 | Theoretical knowledge and applied analysis | Cases of damping: no damping, underdamping, overdamping, critical damping                            | Discussion, dialogue          |              |
| 25 | 2 | Theoretical knowledge and applied analysis | Measures of damping: logarithmic decrement, relaxation time, quality factor                          | Discussion, dialogue          |              |
| 26 | 2 | Theoretical knowledge and applied analysis | Forced oscillation                                                                                   | Discussion, dialogue          |              |
| 27 | 2 | Theoretical knowledge and applied analysis | Transverse waves in one dimension                                                                    | Discussion, dialogue          |              |
| 28 | 2 | Theoretical knowledge and applied analysis | Longitudinal waves (sound waves)                                                                     | Discussion, dialogue          |              |
| 29 | 2 | Theoretical knowledge and applied analysis | General considerations on sound and wave phenomena                                                   | Discussion, dialogue          |              |
| 30 | 2 | Theoretical knowledge and applied analysis | Ultrasonic waves and their applications                                                              | Discussion, dialogue          |              |

#### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

#### 12. Learning and Teaching Resources

|                                               |                                                                       |
|-----------------------------------------------|-----------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | Sound and Wave Motion / Authored by Amjad Abdulrazzaq Karjiya         |
| Main references (sources)                     | Physics of Sound and Wave Motion Authored by Dr. Mustafa Amin Mustafa |





|                                                                       |                                                                                                                                                         |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recommended books and references<br>(scientific journals, reports...) | Following up on electronic references at the Internet, including reputable scientific websites and library websites of some international universities. |
| Electronic References, Websites                                       | Internet websites related to sound and wave motion.                                                                                                     |



## Course Description Form

|                                                                            |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
|----------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------|
| <b>1. Course Name:</b>                                                     |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>Astronomy</b>                                                           |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>2. Course Code:</b>                                                     |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| PHY212                                                                     |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>3. Semester / Year:</b>                                                 |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| Yearly\ second stage                                                       |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>4. Description Preparation Date:</b>                                    |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| 22/9/2025                                                                  |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>5. Available Attendance Forms:</b>                                      |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| Attendance                                                                 |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| 30 HOURS/ 4 UNITS                                                          |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| Name: Hanaa Nafee Azeez                                                    |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| Email: hanaa69@uohamdaniya.edu.iq                                          |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>8. Course Objectives</b>                                                |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>Course Objectives</b>                                                   |              |                                                                                                                                              | <p>Student learn about the importance of scientific knowledge of astronomy in daily life</p> <p>Introduction student to the principles of astronomy enabling them to derive laws related to astronomical concepts and providing them with skills to work in the field of physics.</p> |                           |                          |
| <b>9. Teaching and Learning Strategies</b>                                 |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>Strategy</b>                                                            |              | <p>Providing student with knowledge of astronomy applications and familiarization with astronomical principles theories and instruments.</p> |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>10. Course Structure</b>                                                |              |                                                                                                                                              |                                                                                                                                                                                                                                                                                       |                           |                          |
| <b>Week</b>                                                                | <b>Hours</b> | <b>Required Learning Outcomes</b>                                                                                                            | <b>Unit or subject name</b>                                                                                                                                                                                                                                                           | <b>Learning method</b>    | <b>Evaluation method</b> |
| 1                                                                          | 2 Thec       | Celestial mechanics                                                                                                                          | Celestial mechanics                                                                                                                                                                                                                                                                   | Lecture and use data show | Direct question          |



|    |          |                                      |                                      |                                                    |                 |
|----|----------|--------------------------------------|--------------------------------------|----------------------------------------------------|-----------------|
|    |          |                                      |                                      | ,discussion and dialogue                           |                 |
| 2  | 2 Theor  | Astronomical coordinate system       | Astronomical coordinate system       | Lecture and use data show ,discussion and dialogue | Direct question |
| 3  | 2 Theor  | The movement of stars and the zodiac | The movement of stars and the zodiac | Lecture and use data show ,discussion and dialogue | Direct question |
| 4  | 2 Theor  | Astronomical seasons                 | Astronomical seasons                 | Lecture and use data show ,discussion and dialogue | Direct question |
| 5  | 2 Theor  | Astronomical units of measurement    | Astronomical units of measurement    | Lecture and use data show ,discussion and dialogue | quise           |
| 6  | 2 Theor  | The origin of the solar system       | The origin of the solar system       | Lecture and use data show ,discussion and dialogue | Direct question |
| 7  | 2 Theory | Physical properties of the sun       | Physical properties of the sun       | Lecture and use data show ,discussion and dialogue | Direct question |
| 8  | 2 Theory | Physical properties of the moon      | Physical properties of the moon      | Lecture and use data show ,discussion and dialogue | Direct question |
| 9  | 2 Theory | Lunar and solar eclipses             | Lunar and solar eclipses             | Lecture and use data show ,discussion and dialogue | Direct question |
| 10 | 2 Theory | Stellar cycles                       | Stellar cycles                       | Lecture and use data show ,discussion and dialogue | quise           |
| 11 | 2 Theory | Physical properties of the planets   | Physical properties of the planets   | Lecture and use data show ,discussion and dialogue | Direct question |
| 12 | 2Theory  | Physical properties of the comets    | Physical properties of the comets    | Lecture and use data show ,discussion and dialogue | Direct question |
| 13 | 2 Theory | Bode base                            | Bode base                            | Lecture and use data show ,discussion and dialogue | Direct question |
| 14 | 2Theory  | meteors                              | meteors                              | Lecture and use data show ,discussion and dialogue | Direct question |



|    |             |                                                     |                                                     |                                                    |                 |
|----|-------------|-----------------------------------------------------|-----------------------------------------------------|----------------------------------------------------|-----------------|
| 15 | 2<br>Theory | comets                                              | comets                                              | Lecture and use data show ,discussion and dialogue | quise           |
| 16 | 2Theory     | Movement of stars                                   | Movement of stars                                   | Lecture and use data show ,discussion and dialogue | Direct question |
| 17 | 2<br>Theory | Stars destinies                                     | Stars destinies                                     | Lecture and use data show ,discussion and dialogue | Direct question |
| 18 | 2<br>Theory | Measurement the diameters, masses, density of stars | Measurement the diameters, masses, density of stars | Lecture and use data show ,discussion and dialogue | Direct question |
| 19 | 2<br>Theory | Spectra of stars                                    | Spectra of stars                                    | Lecture and use data show ,discussion and dialogue | Direct question |
| 20 | 2<br>Theory | A plan H-R                                          | A plan H-R                                          | Lecture and use data show ,discussion and dialogue | quise           |
| 21 | 2Theory     | Star life cycle                                     | Star life cycle                                     | Lecture and use data show ,discussion and dialogue | Direct question |
| 22 | 2<br>Theory | Black holes                                         | Black holes                                         | Lecture and use data show ,discussion and dialogue | Direct question |
| 23 | 2<br>Theory | Binary stars                                        | Binary stars                                        | Lecture and use data show ,discussion and dialogue | Direct question |
| 24 | 2<br>Theory | Star clusters                                       | Star clusters                                       | Lecture and use data show ,discussion and dialogue | Direct question |
| 25 | 2<br>Theory | Classification of binary and variable stars         | Classification of binary and variable stars         | Lecture and use data show ,discussion and dialogue | quise           |
| 26 | 2<br>Theory | Types of galaxies                                   | Types of galaxies                                   | Lecture and use data show ,discussion and dialogue | Direct question |



|    |             |                                                |                                                |                                                    |                 |
|----|-------------|------------------------------------------------|------------------------------------------------|----------------------------------------------------|-----------------|
| 27 | 2<br>Theory | Components and mass of galaxies                | Components and mass of galaxies                | Lecture and use data show ,discussion and dialogue | Direct question |
| 28 | 2<br>Theory | Star clusters and clusters                     | Star clusters and clusters                     | Lecture and use data show ,discussion and dialogue | Direct question |
| 29 | 2<br>Theory | Stellar nebulae and quasars                    | Stellar nebulae and quasars                    | Lecture and use data show ,discussion and dialogue | Direct question |
| 30 | 2<br>Theor  | The expansion of the universe and the redshift | The expansion of the universe and the redshift | Lecture and use data show ,discussion and dialogue | quise           |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, quizzes

### 12. Learning and Teaching Resources

|                                                                    |                                                                                                                             |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | كتاب علم الفلك: د. حميد مجول النعيمي ، د. فياض النجم                                                                        |
| Main references (sources)                                          | كتاب علم الفلك: د. حميد مجول النعيمي ، د. فياض النجم                                                                        |
| Recommended books and references (scientific journals, reports...) | Zainul Huda. <i>Metallurgy for Physicists and Engineers-Fundamentals, Applications, and Calculations</i> . CRC Press, 2020. |
| Electronic References, Websites                                    | Wikipedia                                                                                                                   |





## Course Description Form

| 1. Course Name:                                                                   |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
|-----------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|
| English Language                                                                  |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 2. Course Code:                                                                   |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| UOH202                                                                            |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 3. Semester / Year:                                                               |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Annual                                                                            |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 4. Description Preparation Date:                                                  |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 2025                                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 5. Available Attendance Forms:                                                    |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Daily Attendance                                                                  |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                       |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 1 Hour and 2 Credits                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 7. Course administrator's name (mention all, if more than one name)               |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Name: Ari Dakheel Abdal                                                           |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Email: <a href="mailto:Aridasi@uohamdaniya.edu.iq">Aridasi@uohamdaniya.edu.iq</a> |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| 8. Course Objectives                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Course Objectives                                                                 |       |                                                                                                                                                                                                                                                                                                                                                                                                              | 1-Enriching and developing students' English language skills<br>2-Developing students' language abilities and skills |                                                                                                          |                               |
| 9. Teaching and Learning Strategies                                               |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Strategy                                                                          |       | 1. Develop students' ability to recognize the most important vocabulary and linguistic terms in the English language.<br>2. Enrich students' vocabulary.<br>3. Understand the importance of learning English and its impact on learning other subjects.<br>4- Developing students' English language skills.<br>5- Developing reading and writing skills.<br>6- Developing students' English-speaking skills. |                                                                                                                      |                                                                                                          |                               |
| 10. Course Structure                                                              |       |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                      |                                                                                                          |                               |
| Week                                                                              | Hours | Required Learning Outcomes                                                                                                                                                                                                                                                                                                                                                                                   | Unit or subject name                                                                                                 | Learning method                                                                                          | Evaluation method             |
| 1 <sup>st</sup>                                                                   | 1     | Theoretical knowledge and practical educational application                                                                                                                                                                                                                                                                                                                                                  | Unit One Tenses                                                                                                      | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 2 <sup>nd</sup>                                                                   | 1     | Theoretical knowledge and practical educational application                                                                                                                                                                                                                                                                                                                                                  | Unit One Questions                                                                                                   | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |



|                  |   |                                                             |                                |                                                                                                          |                               |
|------------------|---|-------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|
| 3 <sup>rd</sup>  | 1 | Theoretical knowledge and practical educational application | Unit One<br>Question words     | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 4 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Two<br>Present Continuous | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 5 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Two<br>Present Simple     | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 6 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Two<br>Has-Have got       | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 7 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Three<br>Past Simple      | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 8 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Three<br>Past Continuous  | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 9 <sup>th</sup>  | 1 | Theoretical knowledge and practical educational application | Unit Three<br>Time Expressions | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 10 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Four<br>Quantity          | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 11 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Four<br>Articles          | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 12 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Five<br>Verb Patterns     | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 13 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Five<br>Future intention  | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |



|                  |   |                                                             |                                               |                                                                                                          |                               |
|------------------|---|-------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------|
| 14 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Six<br>Comparative and Superlative       | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 15 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Six<br>Superlative adjectives            | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 16 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Seven<br>Present perfect and past simple | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |
| 17 <sup>th</sup> | 1 | Theoretical knowledge and practical educational application | Unit Eight<br>Should & must                   | Delivering the lecture through the blackboard and display screens with interactive student participation | Direct questions and feedback |

#### 11.Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

#### 12.Learning and Teaching Resources

|                                                                    |                                                                                                                                                      |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | New Headway Plus for pre- Intermediate                                                                                                               |
| Main references (sources)                                          |                                                                                                                                                      |
| Recommended books and references (scientific journals, reports...) |                                                                                                                                                      |
| Electronic References, Websites                                    | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |





## Course Description Form

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                     |
| General Arabic language                                                                            |                                                                                                                                                                                                                                                                                                                                                     |
| <b>2. Course Code:</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                     |
| UOH201                                                                                             |                                                                                                                                                                                                                                                                                                                                                     |
| <b>3. Semester / Year:</b>                                                                         |                                                                                                                                                                                                                                                                                                                                                     |
| 2025-2026 Second Stage                                                                             |                                                                                                                                                                                                                                                                                                                                                     |
| <b>4. Description Preparation Date:</b>                                                            |                                                                                                                                                                                                                                                                                                                                                     |
| 18-9-2025                                                                                          |                                                                                                                                                                                                                                                                                                                                                     |
| <b>5. Available Attendance Forms:</b>                                                              |                                                                                                                                                                                                                                                                                                                                                     |
| In-person teaching                                                                                 |                                                                                                                                                                                                                                                                                                                                                     |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>                                 |                                                                                                                                                                                                                                                                                                                                                     |
| 30 hours / 2 units                                                                                 |                                                                                                                                                                                                                                                                                                                                                     |
| <b>7. Course administrator's name (mention all, if more than one name)</b>                         |                                                                                                                                                                                                                                                                                                                                                     |
| Name: Assistant Lecturer Hiba Mohammed Tawfiq Ibrahim<br>Email: hibamohamed.149@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                     |
| <b>8. Course Objectives</b>                                                                        |                                                                                                                                                                                                                                                                                                                                                     |
| <b>Course Objectives</b>                                                                           | <p>1- Introduce students to the importance of the Arabic language and its literature, and help them understand Arabic grammar.</p> <p>2. Develop students' language skills.</p> <p>3. Enable students to acquire the necessary skills to understand syntactic and semantic structures.</p> <p>4. Foster students' pride in the Arabic language.</p> |
| <b>9. Teaching and Learning Strategies</b>                                                         |                                                                                                                                                                                                                                                                                                                                                     |
| <b>Strategy</b>                                                                                    | <p>1. Provide students with knowledge and concepts of the Arabic language, preparing qualified cadres for work in institutions.</p> <p>2. Teach students how to apply general Arabic grammar in their writing.</p> <p>3. Discuss with students and conduct assessments to address common linguistic and expressive errors.</p>                      |



| 10. Course Structure |       |                                                                                                              |                                  |                               |                   |
|----------------------|-------|--------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|-------------------|
| Week                 | Hours | Required Learning Outcomes                                                                                   | Unit or subject name             | Learning method               | Evaluation method |
| 1                    | 1     | Introduction to syllabus, introduction, subject + predicate, types of subject, types of predicate, exercises | Subject and Predicate            | Lecture, discussion, dialogue | Direct questions  |
| 2                    | 1     | Simile: pillars and types, exercises                                                                         | Simile                           | Lecture, discussion, dialogue | Direct questions  |
| 3                    | 1     | Paronomasia: types (perfect and imperfect), conditions of perfect paronomasia, exercises                     | Paronomasia (Jinas)              | Lecture, discussion, dialogue | Direct questions  |
| 4                    | 1     | Linguistic errors and their categories                                                                       | Linguistic Errors                | Lecture, discussion, dialogue | Direct questions  |
| 5                    | 1     | Types of linguistic errors with applied examples                                                             | Application on Linguistic Errors | Lecture, discussion, dialogue | Direct questions  |
| 6                    | 1     | Memorization and explanation of 10 verses from Surat Al-Kahf with meanings                                   | Qur'anic Texts                   | Lecture, discussion, dialogue | Direct questions  |
| 7                    | 1     | Exam                                                                                                         |                                  |                               | Direct questions  |
| 8                    | 1     | Numbers: relation with counted noun, gender rules, exercises                                                 | Numbers                          | Lecture, discussion, dialogue | Direct questions  |
| 9                    | 1     | Object: definition and types                                                                                 | Object (ma'bihi)                 | Lecture, discussion, dialogue | Direct questions  |





|    |   |                                                      |                                             |                                     |                     |
|----|---|------------------------------------------------------|---------------------------------------------|-------------------------------------|---------------------|
| 10 | 1 | Causative object:<br>definition with<br>examples     | Cognate<br>Accusative<br>(maf'ul<br>mutlaq) | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 11 | 1 | Causative object:<br>definition with<br>examples     | Causative<br>Object (maf<br>li-ajlihi)      | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 12 | 1 | Comitative object:<br>definition with<br>example     | Comitative<br>Object (maf<br>ma'ahu)        | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 13 | 1 | Adverbial object:<br>definition, types,<br>exercises | Adverbial<br>Object (maf<br>fihi)           | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 14 | 1 | Review                                               |                                             | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 15 | 1 | Exam                                                 |                                             | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 16 | 1 | Adjective: definition<br>and types                   | Adjective<br>(Na't)                         | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 17 | 1 | Emphasis: definition<br>and types                    | Emphasis<br>(Tawkid)                        | Lecture,<br>discussion,<br>dialogue | Direct<br>questions |
| 18 | 1 | Conjunction:<br>definition,<br>conjunction           | Conjunction<br>('Atf)                       | Lecture,<br>discussion              | Direct<br>questions |

|    |   |                                                                                                                        |                                 |                               |                  |
|----|---|------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------|------------------|
|    |   | particles, meanings                                                                                                    |                                 | n, dialogue                   |                  |
| 19 | 1 | Apposition: definition, types, whole-partial, partial-whole, inclusion, exercises                                      | Apposition (Badal)              | Lecture, discussion, dialogue | Direct questions |
| 20 | 1 | The five nouns: meanings, declension with letters, conditions, exercises                                               | The Five Nouns                  | Lecture, discussion, dialogue | Direct questions |
| 21 | 1 | Exam                                                                                                                   |                                 |                               |                  |
| 22 | 1 | Punctuation marks: comma, semicolon, period, ellipsis, colon, question mark, exclamation, quotation marks, parentheses | Punctuation                     | Lecture, discussion, dialogue | Direct questions |
| 23 | 1 | Exam                                                                                                                   |                                 | Lecture, discussion, dialogue | Direct questions |
| 24 | 1 | Life and upbringing of Badr Shakir al-Sayyab                                                                           | Biography Badr Shakir al-Sayyab | Lecture, discussion, dialogue | Direct questions |
| 25 | 1 | Memorization of 8 verses from "Rain Song" poem, explanation, semantic and rhetorical analysis                          | "Rain Song" Poem                | Lecture, discussion, dialogue | Direct questions |
| 26 | 1 | The five verbs: definition and declension                                                                              | The Five Verbs                  | Lecture, discussion, dialogue | Direct questions |



|    |   |                                          |                               |                               |                  |
|----|---|------------------------------------------|-------------------------------|-------------------------------|------------------|
|    |   |                                          |                               |                               |                  |
| 27 | 1 | Passive subject: definition and examples | Passive Subject (Nā al-Fā'il) | Lecture, discussion, dialogue | Direct questions |
| 28 | 1 | Applied exercises                        | Exercises                     | Lecture, discussion, dialogue | Direct questions |
| 29 | 1 | General review of syllabus               | Review                        | Lecture, discussion, dialogue | Direct questions |
| 30 | 1 | Exam                                     |                               |                               | Direct questions |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

### 12. Learning and Teaching Resources

|                                                                    |                                                                                               |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | None.                                                                                         |
| Main references (sources)                                          | Main References: Sharḥ Ibn 'Aqīl on Ibn Mālik's Alfiyya.                                      |
| Recommended books and references (scientific journals, reports...) | Meanings of Syntax by Dr. Fadel Al-Samarrai<br>Al-Nahw Al-Wafi by Abbas Hassan.               |
| Electronic References, Websites                                    | Alukah Network<br>Waddood Library<br>Al-Waqfeya Library<br>Archive Library<br>Al-Noor Library |



12

1. The first part of the paper is devoted to a general discussion of the problem of the existence of solutions of the system of equations

(1) 
$$\frac{dx}{dt} = f(x, y), \quad \frac{dy}{dt} = g(x, y),$$
 where  $f$  and  $g$  are continuous functions of  $x$  and  $y$  in a region  $R$  of the  $xy$ -plane.

It is assumed that the functions  $f$  and  $g$  satisfy the conditions of the theorem of existence and uniqueness of solutions.

2. In the second part of the paper, the author considers the problem of the existence of solutions of the system of equations

(2) 
$$\frac{dx}{dt} = f(x, y), \quad \frac{dy}{dt} = g(x, y),$$
 where  $f$  and  $g$  are continuous functions of  $x$  and  $y$  in a region  $R$  of the  $xy$ -plane.

It is assumed that the functions  $f$  and  $g$  satisfy the conditions of the theorem of existence and uniqueness of solutions.

3. In the third part of the paper, the author considers the problem of the existence of solutions of the system of equations

(3) 
$$\frac{dx}{dt} = f(x, y), \quad \frac{dy}{dt} = g(x, y),$$
 where  $f$  and  $g$  are continuous functions of  $x$  and  $y$  in a region  $R$  of the  $xy$ -plane.

It is assumed that the functions  $f$  and  $g$  satisfy the conditions of the theorem of existence and uniqueness of solutions.





## Course Description Form

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Thermodynamics                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>2. Course Code:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| PHY305                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>3. Semester / Year:</b>                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2025-2026                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>4. Description Preparation Date:</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1/9/2025                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>5. Available Attendance Forms:</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| In-person learning                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 90 HOURS/ 5 UNITS                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Name: Lect. Dr. Abdulrahman Ismael Ahmed                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Email: a.i.ahmed@uohamdaniya.edu.iq                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>8. Course Objectives</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Course Objectives</b>                                                   | <p>1. Application of Thermodynamic Equations: The ability to use thermodynamic equations and concepts to calculate energy, work, and thermal efficiency in various thermodynamic systems.</p> <p>2. Analysis of Thermodynamic Cycles: The ability to analyze and understand various thermodynamic cycles, including the Carnot cycle.</p> <p>3. Critical Thinking and Creative Solutions: Develop the ability to think critically and devise creative solutions to complex thermodynamic problems.</p> <p>4. Mathematical Analysis: Develop mathematical analysis skills in the context of thermodynamics, including an understanding of the mathematical relationships between thermodynamic quantities.</p> <p>5. Data Handling and Experiments: The ability to analyze thermodynamic data, understand the results of practical experiments, and apply them to theoretical concepts.</p> |
| <b>9. Teaching and Learning Strategies</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Strategy</b>                                                            | <p>1. Providing students with basic information and concepts in the field of thermodynamics: The strategy aims to provide students with basic information and concepts in the field of thermodynamics and to prepare trained and qualified personnel</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

to work in educational and research institutions.

2. Identifying Scientific Applications: Enhancing students' understanding of the practical and scientific applications of thermodynamic principles in daily life and in industrial and research fields.

3. Identifying Types of Scientific Knowledge: Enabling students to distinguish between different types of scientific knowledge, such as facts, concepts, principles, and theories in the field of thermodynamics. Students will also learn about the devices and techniques used to measure and analyze thermodynamic phenomena and thermodynamics concepts.

4. Enabling students to acquire knowledge and understanding: Enhancing students' ability to understand scientific laws in thermodynamics and their practical applications, and developing logical and scientific analysis skills to explain physical phenomena related to thermodynamics.

### 1. Course Structure

| Week | Hours | Required Learning Outcomes                                     | Unit or subject name                                                                                                                                                                                                                                                                       | Learning method     | Evaluation method |
|------|-------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------|
| 1    | 3     | Theoretical Knowledge and Applied Analysis                     | Chapter One: Basic Concepts: The meaning of thermodynamics, introducing basic concepts: the entity (system) and its types (real entity and ideal entity), the boundaries of the surrounding entity the system and its types (open, closed and isolated), the adiabatic and diathermic wall | Lecture, discussion | Direct questions  |
| 2    | 3     | Theoretical knowledge and applied analysis. Classical concepts | Implicit and non-implicit properties processes in thermodynamics, reversible and irreversible processes, thermal equilibrium and                                                                                                                                                           | Lecture, discussion | Direct questions  |



|    |   |                                            |                                                                                                                                               |                     |                  |
|----|---|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|    |   |                                            | thermodynamic equilibrium, properties of an entity (concentrated and comprehensive independent and dependent), state of the system            |                     |                  |
| 3  | 3 | Theoretical knowledge and applied analysis | Thermodynamic processes: adiabatic, isothermal, cyclic, reversible and irreversible, energy (relationship between heat and work), zeroth law. | Lecture, discussion | Direct questions |
| 4  | 3 | Theoretical knowledge and applied analysis | Chapter Two: Equation of State<br>The equation of state of an ideal gas and the empirical method for deriving it.                             | Lecture, discussion | Direct questions |
| 5  | 3 | Theoretical knowledge and applied analysis | Real (non-ideal) gases, equations of state for real gases                                                                                     | Lecture, discussion | Direct questions |
| 6  | 3 | Theoretical knowledge and applied analysis | Equation of state for a van der Waals gas and finding its constants.                                                                          | Lecture, discussion | Direct questions |
| 7  | 3 | Theoretical knowledge and applied analysis | Chapter Three: Useful Mathematical Theories                                                                                                   | Lecture, discussion | Direct questions |
| 8  | 3 | Theoretical knowledge and applied analysis | Useful identities, state function and its conditions.                                                                                         | Lecture, discussion | Direct questions |
| 9  | 3 | Theoretical knowledge and applied analysis | Path function, extensibility and compression.                                                                                                 | Lecture, discussion | Direct questions |
| 10 | 3 | Theoretical knowledge and applied analysis | Chapter Four: Properties of Pure Substances<br>Phases of Pure Substances (Solid, Liquid, Gas).                                                | Lecture, discussion | Exam             |



|    |   |                                            |                                                                                                                                                                                                                     |                     |                  |
|----|---|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
| 11 | 3 | Theoretical knowledge and applied analysis | Gas and vapor, properties of vapors, saturated and unsaturated vapors, behavior of pure substances, graph of a real pure substance.                                                                                 | Lecture, discussion | Direct questions |
| 12 | 3 | Theoretical knowledge and applied analysis | Claapeyron equations, applications of Claapeyron equations.                                                                                                                                                         | Lecture, discussion | Direct questions |
| 13 | 3 | Theoretical knowledge and applied analysis | Chapter Five: The First Law of Thermodynamics: Joule's experiments, text of the first law, the formula of the first law as a law of conservation of energy, application of the first law, results of the first law. | Lecture, discussion | Direct questions |
| 14 | 3 | Theoretical knowledge and applied analysis | Meaning of enthalpy, free expansion of gas, true expansion of gas, work done in adiabatic, isothermal and constant volume processes, gas work in constant temperature processes                                     | Lecture, discussion | Direct questions |
| 15 | 3 | Theoretical knowledge and applied analysis | Heat capacity at constant pressure and heat capacity at constant volume, the relationship between them, and the practical proof. The concept of work in thermodynamics, the dependence of work on the path.         | Lecture, discussion | Direct questions |
| 16 | 3 | Theoretical knowledge and applied analysis | Chapter Six: The Second Law of Thermodynamics Formulation of the Second Law of Thermodynamics (Clausius, Kelvin-Planck) Carnot Cycle Machine                                                                        | Lecture, discussion | Direct questions |
| 17 | 3 | Theoretical knowledge and applied analysis | Linking the first and second laws and the consequences of this link when applied to an ideal gas. Example: the                                                                                                      | Lecture, discussion | Direct questions |



|    |   |                                            |                                                                                                                                                             |                     |                  |
|----|---|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|
|    |   |                                            | first law, the second law                                                                                                                                   |                     |                  |
| 18 | 3 | Theoretical knowledge and applied analysis | Heat engines - cycle efficiency, heat pump.                                                                                                                 | Lecture, discussion | Direct questions |
| 19 | 3 | Theoretical knowledge and applied analysis | Chapter Seven: Entropy (Inertia)<br>Definition of entropy, calculation of entropy change, and the principle of entropy increase in the universe and system. | Lecture, discussion | Direct questions |
| 20 | 3 | Theoretical knowledge and applied analysis | Relationship between entropy and temperature, Clausius theorem, Gibbs function                                                                              | Lecture, discussion | Direct questions |
| 21 | 3 | Theoretical knowledge and applied analysis | Helmholtz function, thermodynamic potential equations, Maxwell's equations.                                                                                 | Lecture, discussion | Direct questions |
| 22 | 3 | Theoretical knowledge and applied analysis | Chapter Eight: The Kinetic Theory of Gases<br>Historical Overview<br>Basic Principles of the Kinetic Theory                                                 | Lecture, discussion | Direct questions |
| 23 | 3 | Theoretical knowledge and applied analysis | Collisions with a moving wall, intermolecular forces of molecules, translational phenomena, mean free path.                                                 | Exam                | Exam             |
| 24 | 3 | Theoretical knowledge and applied analysis | Diffusion phenomenon, viscosity phenomenon, thermal conduction phenomenon                                                                                   | Lecture, discussion | Direct questions |
| 25 | 3 | Theoretical knowledge and applied analysis | Chapter Nine: Statistics                                                                                                                                    | Lecture, discussion | Direct questions |

|    |   |                                            |                                                                  |                         |                  |
|----|---|--------------------------------------------|------------------------------------------------------------------|-------------------------|------------------|
|    |   |                                            | Energy States Introduction Operators with Spherical Coordinates. |                         |                  |
| 26 | 3 | Theoretical knowledge and applied analysis | Energy levels                                                    | Lecture, discussion     | Direct questions |
| 27 | 3 | Theoretical knowledge and applied analysis | probability                                                      | Lecture, discussion     | Direct questions |
| 28 | 3 | Theoretical knowledge and applied analysis | Maxwell-Boltzmann statistics                                     | 'discussion             | Direct questions |
| 29 | 3 | Theoretical knowledge and applied analysis | Fermi-Dirac statistics                                           | Discussion and dialogue | Direct questions |
| 30 | 3 |                                            | Bose-Einstein statistics.                                        | Exam                    |                  |

## 2. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, assignments, etc.

## 3. Learning and Teaching Resources

|                                                                            |                                                                                                                                                      |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1- Thermodynamics.                                                         | Written by Dr. Amjad Abdul Razzaq Karajiya, Dr. Abdul Hamid Al-Abd.                                                                                  |
| 2- Thermal motion and the kinetic theory of gas                            | 2- Written by Dr. Abdul Rahman Mahmoud Al-Jumaili, Dr. Mu'ayyad Gabriel, Dr. Musa Abbas Muhammad.                                                    |
| Recommended mainstream books and references (scientific journals, reports) | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |
| Electronic References, Websites                                            | Websites about thermodynamics                                                                                                                        |





## Course Description Form

|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| solar energy                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2. Course Code:                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| PHY308                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3. Semester / Year:                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Yearly                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4. Description Preparation Date:                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2025/9/19                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 5. Available Attendance Forms:                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Attendance                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 60 HOURS/ 4 UNITS                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7. Course administrator's name (mention all, if more than one name)                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Name: A.PROF. Rajaa Abdullah Basheer                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Email: <a href="mailto:ragaa.habsh@uohamdaniya.edu.iq">ragaa.habsh@uohamdaniya.edu.iq</a> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8. Course Objectives                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Course Objectives                                                                         | <p>1. Introduce students to the concept of energy, its characteristics, sources, classifications of energy forms, types of sources, operating principles, and energy use technologies.</p> <p>2. The course aims to familiarize students with traditional (fossil) energy sources, namely: coal energy, petroleum energy, natural gas energy, and nuclear energy.</p> <p>3. Students will be introduced to renewable energy sources, namely: wind energy, hydropower, solar energy, bioenergy,</p> |



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>geothermal energy, hydrogen energy, and lightning energy.</p> <p>4. Students will understand the generation and production of electrical energy (energy conversion), which includes: first, its characteristics and advantages; second, its limitations and problems; third, energy conversion technology.</p> <p>5. Identify the problems resulting from energy use, including: first, general problems; second, environmental problems; and third, economic problems.</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 9. Teaching and Learning Strategies

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategy | <p>1. Providing students with knowledge and concepts of physics. Preparing trained and qualified personnel to work in institutions and familiarize themselves with the scientific applications of each scientific knowledge.</p> <p>2. Identifying the various types of scientific knowledge, including facts, concepts, principles, theories, and devices for measuring weather and climate elements.</p> <p>3. Enabling students to acquire knowledge and understanding of the scientific laws of physics, practical applications of physics, and logical and scientific analysis and interpretation of physical phenomena.</p> |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. Course Structure





| Week | Hours | Required Learning Outcomes                                                                                  | Unit or subject name                                                        | Learning method                  | Evaluation method            |
|------|-------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------|------------------------------|
| 1    | 2     | Learn about the concept of energy and its types                                                             | The concept of energies + types of energies                                 | Lecture, discussion and dialogue | Direct questions             |
| 2    | 2     | Learn about renewable and non-renewable energies                                                            | Renewable energies, non-renewable energies                                  | Lecture, discussion and dialogue | Direct questions             |
| 3    | 2     | Learn about the advantages, disadvantages and uses of solar energy (direct and indirect)                    | Solar energy, its advantages and disadvantages, the use of solar energy.    | Lecture, discussion and dialogue | Direct questions + oral exam |
| 4    | 2     | Learn about the sun, its physical composition, and the solar constant.                                      | Solar model, solar constant                                                 | Lecture, discussion and dialogue | Direct questions             |
| 5    | 2     | Blackbody and solar spectrum recognition                                                                    | black body radiation                                                        | Lecture, discussion and dialogue | Direct questions + oral exam |
| 6    | 2     | Learn about solar emissions                                                                                 | Radiation emission from the sun                                             | Lecture, discussion and dialogue | Direct questions             |
| 7    | 2     | Learn about solar astronomy and Earth's orbit                                                               | solar orbit, Earth's orbit                                                  | Lecture, discussion and dialogue | Direct questions             |
| 8    | 2     | Learn about the solar day, its characteristics, the sidereal day, and the equation of time.                 | solar day, sidereal day, equation of time                                   | Lecture, discussion and dialogue | Direct questions + oral exam |
| 9    | 2     | Learn about standard and local solar coordinates                                                            | Local solar coordinates, sunrise and sunset                                 | Lecture, discussion and dialogue | Direct questions             |
| 10   | 2     | Knowing the angle of the sun's inclination and the number of daylight hours                                 | Knowing the angle of the sun's inclination and the number of daylight hours | Lecture, discussion and dialogue | Direct questions             |
| 11   | 2     | Learn how sunlight falls on inclined surfaces                                                               | Sun rays tilt on sloping surfaces                                           | Lecture, discussion and dialogue | Direct questions + oral exam |
| 12   | 2     | Learn about the thermal composition of the atmosphere and the changes in density, temperature, and pressure | atmospheric model                                                           | Lecture, discussion and dialogue | Direct questions             |

|    |   |                                                                                                                                                    |                                                                        |                                  |                              |
|----|---|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------|------------------------------|
|    |   | with altitude. Air components (air thermodynamics)                                                                                                 |                                                                        |                                  |                              |
| 13 | 2 | Learn how solar radiation is absorbed and scattered by the atmosphere.                                                                             | Absorption and scattering of solar radiation by atmospheric components | Lecture, discussion and dialogue | Direct questions             |
| 14 | 2 | Learn about solar power plant design and solar collector operation.                                                                                | Solar power plant and solar collector design                           | Lecture, discussion and dialogue | Direct questions             |
| 15 | 2 | Learn about solar radiation measuring devices, climate elements measuring devices, and the properties that must be available in measuring devices. | Solar radiation measuring devices                                      | Lecture, discussion and dialogue | Direct questions             |
| 16 | 2 | Identify the factors affecting solar radiation and the effects of the atmosphere and the Earth on absorbing solar radiation.                       | Weather factors affecting solar radiation                              | Lecture, discussion and dialogue | Direct questions             |
| 17 | 2 | Learn about insulators, conductors, semiconductors, and energy bands.                                                                              | Insulators, junctions and semiconductors                               | Lecture, discussion and dialogue | Direct questions             |
| 18 | 2 | Types of solar cells and solar cell manufacturing                                                                                                  | Solar cell manufacturing and types                                     | Lecture, discussion and dialogue | Direct questions             |
| 19 | 2 | Photovoltaic cell and factors affecting solar cell efficiency                                                                                      | Solar cell efficiency and photocurrent spectral response               | Lecture, discussion and dialogue | Direct questions + oral exam |
| 20 | 2 | Learn about solar collectors and their components                                                                                                  | solar collectors                                                       | Lecture, discussion and dialogue | Direct questions             |
| 21 | 2 | Learn about the operation of the solar collector and the variables that affect it.                                                                 | Solar collector operation                                              | Lecture, discussion and dialogue | Direct questions             |
| 22 | 2 | Learn about solar radiation estimation models.                                                                                                     | Solar radiation estimation                                             | Lecture, discussion and dialogue | Direct questions             |
| 23 | 2 | The usefulness of solar radiation estimation models                                                                                                | Solar radiation estimation models                                      | Lecture, discussion and dialogue | exam                         |



|    |   |                                                                                     |                                                                                   |                                  |                              |
|----|---|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------|------------------------------|
| 24 | 2 | Daily and hourly direct and diffuse solar radiation                                 | solar radiation                                                                   | Lecture, discussion and dialogue | Direct questions             |
| 25 | 2 | Identify the total solar radiation falling on the horizontal surface                | Solar radiation calculation                                                       | Lecture, discussion and dialogue | Direct questions             |
| 26 | 2 | Identify the solar radiation falling on a surface inclined from the Earth's surface | Radiation falling on an inclined surface                                          | Lecture, discussion and dialogue | Direct questions             |
| 27 | 2 | Identifying air masses                                                              | air masses                                                                        | Lecture, discussion and dialogue | Direct questions             |
| 28 | 2 | Identify solar radiation outside the atmosphere                                     | Solar radiation outside the atmosphere                                            | Lecture, discussion and dialogue | Direct questions + oral exam |
| 29 | 2 | reflected solar radiation                                                           | Solar radiation reflected from the Earth's surface falling on an inclined surface | Lecture, discussion and dialogue | Direct questions             |
| 30 | 2 | Identify diffuse sky radiation                                                      | Diffuse sky radiation falling on an inclined surface                              | Lecture, discussion and dialogue | exam                         |

### 11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, homework, daily, oral, monthly and written exams, reports, etc.

### 12. Learning and Teaching Resources

|                                               |                                                                                                                                                                                                                                                                            |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | <ol style="list-style-type: none"> <li>1. Introduction to Solar Energy by Saul Weider</li> <li>2. Solar Cells by Martin Crane</li> <li>3. Meteorology, Eric, Levin, Abrams, second edition</li> <li>4. An Introduction to Solar Radiation, Muhammad Iqbal, 1983</li> </ol> |
| Main references (sources)                     | <p>I recommend relying on modern sources.</p> <p>In addition to all academic studies and scientific research published in academic journals that are relevant to the subject matter.</p>                                                                                   |

|                                                                       |                                                                                                                                                    |
|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Recommended books and references<br>(scientific journals, reports...) | Consider electronic references and the internet, which include reputable scientific websites and the libraries of some international universities. |
| Electronic References, Websites                                       | Websites that contain information about solar energy and the scientific methods used to harness it.                                                |





# Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                                   |       |                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------|-----------------------------------|-------|-------------------|
| 1. Course name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                                   |       |                   |
| Complex functions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                           |                                   |       |                   |
| 2. Course code:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                                   |       |                   |
| PHY307                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                           |                                   |       |                   |
| 3. Chapter/Year:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                           |                                   |       |                   |
| 2025-2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                           |                                   |       |                   |
| 4. Date of preparation of this description:                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                           |                                   |       |                   |
| 15/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                           |                                   |       |                   |
| 5. Available attendance forms:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                           |                                   |       |                   |
| In-person education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                           |                                   |       |                   |
| 6. Number of study hours (total) / Number of units (total):                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                           |                                   |       |                   |
| 60 hours /4 units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                           |                                   |       |                   |
| 7. Course Instructor Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                           |                                   |       |                   |
| Name: Assistant teacher ,Mohammed Basil Abdul-Jabbar                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                           |                                   |       |                   |
| Email:mohammedbasil1994@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                           |                                   |       |                   |
| 8. Course objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                           |                                   |       |                   |
| 1. Introducing students to complexnumberstheir properties , related functions, complex integrals, complex derivatives, and .complex number sequences and series<br>2. Enabling students to solve mathematical problems related to the subject Complex functions                                                                                                                                                                                                                                                 |                          |                           |                                   |       | Course objectives |
| 9. Teaching and learning strategies                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                           |                                   |       |                   |
| 1. Providing students with information and concepts related to mathematics and complexfunctions.<br>2. Preparing trained and qualified cadres to work in educational .institutions<br>3. .Identifying the scientific applications of each scientific knowledge<br>4. Identifying the different types of scientific knowledge, including facts, concepts, principles, and theories in the field ofmathematics.<br>5. Enabling the student to gain knowledge and understanding of scientific laws in mathematics. |                          |                           |                                   |       | Strategy          |
| 10. Course structure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                           |                                   |       |                   |
| Evaluation method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Learning method          | Name of the unit or topic | Requiredlearning outcomes         | hours | week              |
| Evaluation method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Teaching method          | Unit name/topic           | Requiredlearning outcomes         | hours | week              |
| Direct questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lecture , discussion and | complex number            | Complex number - its properties - | 2     | the first         |



|                                   |                                           |                                                |                                                |   |            |
|-----------------------------------|-------------------------------------------|------------------------------------------------|------------------------------------------------|---|------------|
| +Daily homework                   | problem solving                           |                                                | arithmetic operations                          |   |            |
| Direct + Questions Daily Homework | Lecture , discussion and problem solving  | Utilities and absolute value                   | Utilities and absolute value                   | 2 | the second |
| Direct questions +Daily homework  | Lecture , discussion and problem solving  | Polar coordinates and geometric representation | Polar coordinates and geometric representation | 2 | the third  |
| Direct questions +Daily homework  | Lecture , discussion and problem solving  | Powers and roots                               | Powers and roots                               | 2 | Fourth     |
| Direct questions +Daily homework  | Lecture , discussion and problem solving  | complex variable                               | complex variable                               | 2 | Fifth      |
| Direct questions +Daily homework  | Lecture , discussion and problem solving  | Endings                                        | Endings                                        | 2 | Sixth      |
| exam                              | Lecture , discussion and problem solving  | Continuity                                     | Continuity                                     | 2 | Seventh    |
| Direct questions +Daily homework  | Lecture , discussion and problem solving  | Derivative                                     | Derivative                                     | 2 | Eighth     |
| Direct questions +Daily homework  | Lecture and discussion and solve problems | Analytical functions                           | Analytical functions                           | 2 | Ninth      |
| Direct questions +Daily homework  | Lecture , discussion and problem solving  | Analytical functions                           | Analytical functions                           | 2 | tenth      |
| Direct questions Exam+            | Lecture , discussion and problem solving  | Harmonic functions                             | Harmonic functions                             | 2 | eleventh   |
| Direct questions +Daily homework  | Lecture , discussion and problem solving  | exponential function                           | exponential function                           | 2 | twelfth    |





|                                     |                                                |                                      |                                              |   |                      |
|-------------------------------------|------------------------------------------------|--------------------------------------|----------------------------------------------|---|----------------------|
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | logarithmic<br>function              | logarithmic function                         | 2 | thirteenth           |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | trigonometric<br>function            | trigonometric<br>function                    | 2 | fourteenth           |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | inverse<br>trigonometric<br>function | inverse<br>trigonometric<br>function         | 2 | fifteenth            |
| exam                                | Lecture ,<br>discussion and<br>problem solving | hyperbolic<br>function               | hyperbolic function                          | 2 | Sixteenth            |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | Complex<br>number<br>integration     | Complex number<br>integration                | 2 | Seventeen<br>th week |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | Integration<br>paths                 | Integration paths                            | 2 | Eighteenth<br>week   |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | Korsa's theorem                      | Korsa's theorem                              | 2 | Nineteenth<br>week   |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | Indefinite<br>integrals              | Indefinite integrals                         | 2 | Week<br>twentieth    |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | Cauchy's<br>integral formula         | Cauchy's integral<br>formula                 | 2 | Week<br>twenty-one   |
| exam                                | Lecture ,<br>discussion and<br>problem solving | Theorems                             | Theorems                                     | 2 | Week<br>twenty-two   |
| Direct questions<br>+Daily homework | Lecture ,<br>discussion and<br>problem solving | Sequences and<br>series              | Sequences and<br>Series - Types of<br>Series | 2 | Week<br>twenty-three |



|                                     |                                           |                                    |                                    |   |                   |
|-------------------------------------|-------------------------------------------|------------------------------------|------------------------------------|---|-------------------|
| Direct questions<br>+Daily homework | Lecture and discussion and solve problems | Power chains                       | Power chains                       | 2 | Week twenty-four  |
| Direct questions<br>+Daily homework | Lecture , discussion and problem solving  | Tyler Series                       | Tyler Series                       | 2 | Week twenty-five  |
| exam                                | Lecture , discussion and problem solving  | Laurent series                     | Laurent series                     | 2 | Week twenty-six   |
| Direct questions<br>+Daily homework | Lecture , discussion and problem solving  | Outliers                           | Outliers                           | 2 | Week twenty-seven |
| Direct questions<br>+Daily homework | Lecture , discussion and problem solving  | Classification of anomalous points | Classification of anomalous points | 2 | Week twenty-eight |
| Direct questions<br>+Daily homework | Lecture , discussion and problem solving  | Sediment zeros                     | Sediment zeros                     | 2 | Week twenty-nine  |
| Direct questions<br>+Daily homework | Lecture , discussion and problem solving  | Residue theorem                    | Residue theorem                    | 2 | thirty            |

#### 11. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, homework, daily, oral, monthly and written exams, etc

#### 12. Learning and teaching resources

|                                                                                                                                                     |                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Complex Functions: Samir Bashir Hadid, Yahya Abdul Saeed                                                                                            | Required textbooks (methodology if available)                              |
| Complex Functions: Samir Bashir Hadid, Yahya Abdul Saeed                                                                                            | Primary References (Sources)                                               |
| Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities | Recommended mainstream books and references (scientific journals, reports) |
| Websites that are interested in the field of mathematics                                                                                            | Electronic references, websites                                            |





## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .1 Course name                                                 |
| Counseling and mental health                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .2 Course code                                                 |
| EPS301                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .3 Chapter/Year                                                |
| Third Phase / 2026-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .4 Date of preparation of this description                     |
| 2025/9/20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .5 Available attendance forms                                  |
| In-person education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .6 Number of study hours (total) / Number of units (total)     |
| hour / 4 units 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .7 Course Supervisor Name (if more than one name is mentioned) |
| Ibrahim 1977 @uohamdaniya.edu.iq:Name: M.M. Ibrahim Mamiq Sultan Email                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .8 Course objectives                                           |
| <p>.1 With the concepts of guidance and mental health from (the goals of guidance and mental health, its terminology and the . (most important theories</p> <p>.2 The field of the teacher-guide and educational counselor and his role in helping the student achieve psychological, educational and social harmony</p> <p>.3 Means of collecting information, their importance, advantages and disadvantages of each</p> <p>.4 Parent-teacher councils and their role in educational guidance</p> | <b>Course objectives</b>                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .9 Teaching and learning strategies                            |
| <p>.1 Understanding and comprehension</p> <p>.2 Methods of solving complex situations and distinguishing the correct cognitive aspects</p>                                                                                                                                                                                                                                                                                                                                                          | <b>Strategy</b>                                                |



.3 Brainstorming techniques  
 .4 Learning and self-discovery through extracurricular and curricular activities

Course structure .10

| Evaluation method             | Teaching method                  | Unit name/topic                                                                                        | Required learning outcomes                                  | hours | week       |
|-------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------|------------|
| Feedback via direct questions | Lecture, discussion and dialogue | Guidance, the meaning of educational guidance, the origin and development of guidance and its concepts | Theoretical knowledge and practical educational application | 2     | the first  |
| Feedback via direct questions | Lecture, discussion and dialogue | Justifications for guidance, its objectives, principles of guidance and direction                      | Theoretical knowledge and practical educational application | 2     | the second |
| Feedback via direct questions | Lecture, discussion and dialogue | The relationship between counseling and other sciences, areas of counseling                            | Theoretical knowledge and practical educational application | 2     | the third  |
| Feedback via direct questions | Lecture, discussion and dialogue | Guidance methods individual ) guidance, group ( (guidance                                              | Theoretical knowledge and practical educational application | 2     | Fourth     |
| Feedback via direct questions | Lecture, discussion and dialogue | Foundations of guidance, philosophical,                                                                | Theoretical knowledge and practical                         | 2     | Fifth      |



|                               |                                  |                                                                                                 |                                                             |   |          |
|-------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---|----------|
|                               |                                  | social                                                                                          | educational application                                     |   |          |
| Feedback via direct questions | Lecture, discussion and dialogue | Foundations of guidance, moral, religious, psychological                                        | Theoretical knowledge and practical educational application | 2 | Sixth    |
| Feedback via direct questions | Lecture, discussion and dialogue | Counseling theories                                                                             | Theoretical knowledge and practical educational application | 2 | Seventh  |
| Feedback via direct questions | Lecture, discussion and dialogue | Psychoanalytic theories                                                                         | Theoretical knowledge and practical educational application | 2 | Eighth   |
| Feedback via direct questions | Lecture, discussion and dialogue | behavioral theories                                                                             | Theoretical knowledge and practical educational application | 2 | Ninth    |
| Extracurricular activities    | Lecture, discussion and dialogue | Existential and humanistic theories                                                             | Theoretical knowledge and practical educational application | 2 | tenth    |
| Feedback via direct questions | Lecture, discussion and dialogue | Information needed for guidance, importance of information, types of information                | Theoretical knowledge and practical educational application | 2 | eleventh |
| Feedback via direct questions | Lecture, discussion and dialogue | Information collection methods (cumulative record, case study, narrative record, (autobiography | Theoretical knowledge and practical educational application | 2 | twelfth  |
| Feedback                      | Lecture,                         | Methods of                                                                                      | Theoretical                                                 | 2 | thirteen |



|                               |                                  |                                                                                                                                               |                                                             |   |                  |
|-------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---|------------------|
| via direct questions          | discussion and dialogue          | collecting information (tests and measures, observation, (interview                                                                           | knowledge and practical educational application             |   | th               |
| Feedback via direct questions | Lecture, discussion and dialogue | Guidance and counseling in school, the counselor teacher - his duties and preparation, the educational counselor - his duties and preparation | Theoretical knowledge and practical educational application | 2 | fourteenth       |
| Feedback via direct questions | Lecture, discussion and dialogue | Parent-Teacher Councils and their role in guidance, the need for guidance programs in schools                                                 | Theoretical knowledge and practical educational application | 2 | fifteenth        |
| Feedback via direct questions | Lecture, discussion and dialogue | Problems addressed by educational guidance, meaning of mental health - its objectives - its importance                                        | Theoretical knowledge and practical educational application | 2 | Week 16          |
| Feedback via direct questions | Lecture, discussion and dialogue | Normal and abnormal person, normal and abnormal personality standards                                                                         | Theoretical knowledge and practical educational application | 2 | Seventeenth week |
| Feedback via direct questions | Lecture, discussion and dialogue | Features of normal and abnormal behavior, personality integration                                                                             | Theoretical knowledge and practical educational application | 2 | Eighteenth week  |
| Feedback                      | Lecture,                         | Personal crises                                                                                                                               | Theoretical                                                 | 2 | Nineteen         |





|                               |                                  |                                                                                                             |                                                             |   |                   |
|-------------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---|-------------------|
| via direct questions          | discussion and dialogue          |                                                                                                             | knowledge and practical educational application             |   | nth week          |
| Feedback via direct questions | Lecture, discussion and dialogue | The meaning of crisis, the causes and sources of psychological crises                                       | Theoretical knowledge and practical educational application | 2 | Week twentieth    |
| Feedback via direct questions | Lecture, discussion and dialogue | Proper ways to solve psychological crises, frustration, and psychological disorders                         | Theoretical knowledge and practical educational application | 2 | Week twenty-one   |
| Feedback via direct questions | Lecture, discussion and dialogue | Defense mechanisms Defensive ) ( methods                                                                    | Theoretical knowledge and practical educational application | 2 | Week twenty-two   |
| Feedback via direct questions | Lecture, discussion and dialogue | Origin of defensive behavior, development of defense mechanisms                                             | Theoretical knowledge and practical educational application | 2 | Week twenty-three |
| Feedback via direct questions | Lecture, discussion and dialogue | Its types compensation, ) reincarnation, reverse formation, projection, justification and its ( (phenomenon | Theoretical knowledge and practical educational application | 2 | Week twenty-four  |
| Feedback via direct questions | Lecture, discussion and dialogue | Results of defensive behavior, escape methods suppression, ) withdrawal, daydreaming, ( sleep dreams        | Theoretical knowledge and practical educational application | 2 | Week twenty-five  |



|                               |                                  |                                                                                                     |                                                             |   |                   |
|-------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------|---|-------------------|
| Feedback via direct questions | Lecture, discussion and dialogue | Escape methods, regression, cancellation, compensation                                              | Theoretical knowledge and practical educational application | 2 | Week twenty-six   |
| Feedback via direct questions | Lecture, discussion and dialogue | Pathological, defensive, and escape symptoms                                                        | Theoretical knowledge and practical educational application | 2 | Week twenty-seven |
| Feedback via direct questions | Lecture, discussion and dialogue | Compatibility, meaning of compatibility, nature of compatibility, types of compatibility            | Theoretical knowledge and practical educational application | 2 | Week twenty-eight |
| Feedback via direct questions | Lecture, discussion and dialogue | Characteristics of a compatible person, adaptation, compatibility and the relationship between them | Theoretical knowledge and practical educational application | 2 | Week twenty-nine  |
| Feedback via direct questions | Lecture, discussion and dialogue |                                                                                                     | Theoretical knowledge and practical educational application | 2 | Week 30           |

#### Course Evaluation .11

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc

#### Learning and teaching resources .12

|                                                                                                                                                                                                                                     |                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Principles of Guidance and Psychological Counseling, Sami Muhammad Malham, 2010, Amman, Dar .Al Masirah Publishing and Distribution<br>Zahran, Hamed Abdel Salam, 1980, Guidance and - Psychological Counseling, Alam .Books, Cairo | Required textbooks (methodology if available) |
| Psychological Guidance and Educational Guidance, - Mustafa Mahmoud Al-Imam )1991( University of Baghdad<br>Principles of psychological counseling for psychological                                                                 | Primary References (Sources)                  |





|                                                                                                                                                                                                   |                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| counselors, Muhammad Ahmad Mashaqa )2008(<br>.Oman - Dar Al Manahj for Publishing and Distribution<br>Guidance and Psychological Counseling, Hamed -<br>Zahran (2005) Cairo<br>The world of books |                                                                               |
| Personality Psychology, Dawood Aziz Hanna, and -<br>Nazim Hashim Al-Obaidi, 1990, University of Baghdad                                                                                           | Recommended mainstream books and<br>references (scientific journals, reports) |
| Al-Noor Library (an electronic library) is free on the -<br>and contains various types of Google search engine<br>. specialized sources                                                           | Electronic references, websites                                               |



## Course Description Form

|                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Analytical mechanics                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2. Course Code:                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| PHY306                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3. Semester / Year                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3 <sup>rd</sup> class /2025- 2026                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4. Description Preparation Date:                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 122/9/2025                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 5. Available Attendance Forms:                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Face-to-Face theoretical lectures                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 6. Number of Credit Hours (Total) / Number of Units (Total)          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 90 HOURS/ 5 UNITS                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 7. Course administrator's name (mention all, if more than one name)  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Name: Malak Jaafar Ali<br>Email: malak.jaafar.ali@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 8. Course Objectives                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Course Objectives                                                    | The aim of the study of analytical mechanics is to solve mechanical problems that arise in physics. Starting from the physical concept of a given system, a mathematical concept or model is developed in the form of equations or differential equations and an attempt is made to solve it. The method is based on Newton's laws that describe motion with the help of vector quantities such as force, velocity and acceleration. These quantities characterize the motion of a body that is idealized as a "point mass" or a "particle" understood as a single point to which the mass is attached. Newton's method was successful and has been applied to a wide range of physical problems. |
| 9. Teaching and Learning Strategies                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Strategy                                                             | 1. Build up a good foundation in Newtonian mechanics. Solve variety of problems analytically and systematically with confidence.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |





|  |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>2. Learn analytical mechanics. Know how to set up and obtain the equations of motion in generalized coordinates.</p> <p>3. Acquire the knowledge of some advanced topics such as central force field, gyroscopic motion, and normal modes.</p> <p>- Since we will use mathematics in describing physical concepts and solving problems quantitatively, a working knowledge of algebra, and calculus is a prerequisite.</p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. Course Structure

| Week   | Hours | Required Learning Outcomes                                                                                                                                                                                                                          | Unit or subject name                      | Learning method                                                                           | Evaluation method                         |
|--------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------|
| 1 - 4  | 12    | vectors, frames rotation in Cartesian coordinate, velocity and acceleration components in different coordinate systems (polar, cylindrical, spherical), some mathematical operation on vectors, gradient, divergence, curl. Exam                    | CH 1: Basic principles                    | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 5-10   | 18    | Newtons law of motion, Rectilinear Motion of Particles, force as a function of the velocity only, force as a function of time only, damping forces depending on the velocity, conservative force depending on position and some applications. Exam. | CH 2: Newtonian Mechanics                 | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 11 -15 | 15    | Linear Restoring Force, Harmonic Motion, The Simple Harmonic Oscillator, Simple Harmonic Motion, Energy Considerations in Simple Harmonic Motion                                                                                                    | CH 3: Oscillating Systems                 | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 16-19  | 12    | Damped Harmonic Motion, Forced Harmonic Motion (Resonance), Applications of Simple Harmonic Motion, Exam                                                                                                                                            | CH 3: Oscillating Systems                 | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 20-24  | 15    | The Work Principle, Conservative Forces and Force Fields, Potential Energy Function, The Potential in a                                                                                                                                             | CH 4: Dynamics a Particle, General Motion | Lecture through the blackboard and display screens with interactive                       | Daily exam with end of each semester exam |

|                                                                                                                                                                             |    |                                                                                                                                             |                            |                                                                                           |                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------|
|                                                                                                                                                                             |    | Uniform Gravitational Field, The Del Operator, Exam                                                                                         |                            | student participation                                                                     |                                           |
| 25-30                                                                                                                                                                       | 18 | Translation of the Coordinate System, General Motion of the Coordinate System, Dynamics of a Particle in a Rotating Coordinate System, Exam | CH 5: Mov Reference System | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| <b>11. Course Evaluation</b>                                                                                                                                                |    |                                                                                                                                             |                            |                                                                                           |                                           |
| The grade is distributed out of 100 according to the tasks assigned to the student, such as: daily preparation, daily, oral, monthly, and written exams, student attendance |    |                                                                                                                                             |                            |                                                                                           |                                           |
| <b>12. Learning and Teaching Resources</b>                                                                                                                                  |    |                                                                                                                                             |                            |                                                                                           |                                           |
| <b>13. Developing a planning strategy: brainstorming, research groups, activities, solving more deep questions.</b>                                                         |    |                                                                                                                                             |                            |                                                                                           |                                           |
| Required textbooks (curricular books, if any)                                                                                                                               |    | Golwala, Sunil. "Lecture notes on classical mechanics for physics 106ab."<br>Publisher: CreateSpace Independent Publishing Platform (2014). |                            |                                                                                           |                                           |
| Main references (sources)                                                                                                                                                   |    | Golwala, Sunil. "Lecture notes on classical mechanics for physics 106ab."<br>Publisher: CreateSpace Independent Publishing Platform (2014). |                            |                                                                                           |                                           |
| Recommended books and references (scientific journals, reports...)                                                                                                          |    | كتاب الميكانيك التحليلي<br>المؤلف / كرانك ر. فاوولس<br>ترجمة الدكتور / طالب ناهي الخفاج                                                     |                            |                                                                                           |                                           |
| Electronic References, Websites                                                                                                                                             |    | متابعه المراجع الإلكترونية والأترنت التي تتضمن<br>المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في<br>بعض الجامعات العالمية           |                            |                                                                                           |                                           |







## Course Description Form

|                                                                                              |                                                                                                                                        |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course name:                                                                              |                                                                                                                                        |
| Curricula and teaching methods                                                               |                                                                                                                                        |
| 2. Course code:                                                                              |                                                                                                                                        |
| EPS302                                                                                       |                                                                                                                                        |
| 3. Semester/Year: Annual System                                                              |                                                                                                                                        |
| 2025-2026                                                                                    |                                                                                                                                        |
| 4. Date of preparation of this description:                                                  |                                                                                                                                        |
| 17/9/2025                                                                                    |                                                                                                                                        |
| 5. Available attendance forms: Daily morning attendance                                      |                                                                                                                                        |
| In-person education                                                                          |                                                                                                                                        |
| 6. Number of study hours / Number of units                                                   |                                                                                                                                        |
| 60 hours / 4 units                                                                           |                                                                                                                                        |
| 7. Course Supervisor Name (if more than one name is mentioned)                               |                                                                                                                                        |
| Name: Email:                                                                                 |                                                                                                                                        |
| M.M. Younis Dharar Jassim                                                                    |                                                                                                                                        |
| <a href="mailto:youniesdrar12345@uohamdaniya.edu.iq">youniesdrar12345@uohamdaniya.edu.iq</a> |                                                                                                                                        |
| 8. Course objectives                                                                         |                                                                                                                                        |
| <b>Course<br/>objective<br/>s</b>                                                            | <p>The curriculum and teaching methods course aims to enable the student to:</p> <p>1. Recognize the teacher's message in society.</p> |





|                                            |                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | <ol style="list-style-type: none"> <li>2. Deduce the responsibilities of the teacher in society.</li> <li>3. Identify aspects of teacher preparation.</li> <li>4. Understand the concept of teaching competence.</li> <li>5. Classifies the teaching competencies required for the teacher.</li> </ol> |
| <b>9. Teaching and learning strategies</b> |                                                                                                                                                                                                                                                                                                        |
| <b>Strategy</b>                            | <ol style="list-style-type: none"> <li>1. Lectures of all kinds.</li> <li>2. Dialogue, discussion and question and answer sessions.</li> <li>3. Collaborative learning.</li> <li>4. Project method.</li> <li>5. Numbered heads strategy.</li> </ol>                                                    |

| <b>Evaluation method</b> | <b>Teaching method</b>      | <b>Unit name/topic</b>                                               | <b>Required learning outcomes</b>                                                 | <b>hours</b> | <b>week</b> |
|--------------------------|-----------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------|-------------|
| Feedback                 | discussion, lecture, debate | Historical development of the concept of eachOf methods and teaching | –Enable learners to identify historical stages.For teaching methods and curricula | 2            | 1           |
| Feedback                 | discussion,                 | Understanding the conceptScience                                     | Forming students to define the concept offFor your                                | 2            | 2           |



|          |                                       |                                                                             |                                                                                                                               |   |   |
|----------|---------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---|---|
|          | lecture,<br>debate                    |                                                                             | informationAnd its<br>connection with<br>other concepts                                                                       |   |   |
| Feedback | discussio<br>n,<br>lecture,<br>debate | Understand the<br>concept of each of<br>(a)For the<br>truthandprinciple)    | Enable students to<br>define<br>termsScientific facts<br>and scientific<br>conceptsAnd find the<br>difference between<br>them | 2 | 3 |
| Feedback | discussio<br>n,<br>lecture,<br>debate | The importance of<br>science                                                | Empowering<br>studentsfrom Learn<br>about the<br>characteristics of<br>science                                                | 2 | 4 |
| Feedback | discussio<br>n,<br>lecture,<br>debate | The relationship<br>betweenObservati<br>on, interview, and<br>questionnaire | Students were able<br>to distinguish<br>betweenScientific<br>thinking skills                                                  | 2 | 5 |
| Feedback | discussio<br>n,<br>lecture,<br>debate | Identify the<br>elements<br>Curriculum                                      | Students were able<br>toLinking curriculum<br>elements                                                                        | 2 | 6 |





|          |                                   |                                              |                                                                                               |   |    |
|----------|-----------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------|---|----|
| Feedback | discussion,<br>lecture,<br>debate | Types of calendar                            | Enable students to identify and apply types of educational assessment.                        | 2 | 7  |
| Feedback | discussion,<br>lecture,<br>debate | Types Objectives                             | Students were able to identify the types of Educational objectives and its field applications | 2 | 8  |
| Feedback | discussion,<br>lecture,<br>debate | Sources of educational objectives            | Students were able to identify Sources of derivation of educational objectives                | 2 | 9  |
| Feedback | discussion,<br>lecture,<br>debate | role in formulating the behavioral objective | Students were able to Defining the formulation of behavioral objectives                       | 2 | 10 |
| a test   | discussion,<br>lecture,<br>debate | Teaching objectives                          | Students were able to identify Classification of behavioral objectives                        | 2 | 11 |



|                         |                                   |                                |                                                                                             |   |    |
|-------------------------|-----------------------------------|--------------------------------|---------------------------------------------------------------------------------------------|---|----|
| Feedback                | discussion,<br>lecture,<br>debate | Behavioral<br>Objectives Areas | Enabling students to<br>know how toLinking<br>the fields of<br>objectives                   | 2 | 12 |
| Feedback                | discussion,<br>lecture,<br>debate | Teaching methods               | EmpowermentAFor<br>students of<br>determinationStrateg<br>ic concepts,<br>methods and style | 2 | 13 |
| Feedback                | discussion,<br>lecture,<br>debate | Teaching methods               | Enabling students<br>toKnowing the<br>specifications of<br>successful teaching              | 2 | 14 |
| Semi-<br>annual<br>news | discussion,<br>lecture,<br>debate | Teaching methods               | Empowering<br>studentsTo learn<br>about the types of<br>teaching methods                    | 2 | 15 |
| Feedback                | discussion,<br>lecture,<br>debate | Teaching Jokes                 | Enabling students<br>toKnowing the<br>method of delivery<br>and its steps                   | 2 | 16 |
| Feedback                | discussion,<br>n,                 | Teaching methods               | Enabling students<br>toKnowing how                                                          | 2 | 17 |





|                 |                                       |                                                                                |                                                                                                             |   |    |
|-----------------|---------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---|----|
|                 | lecture,<br>debate                    |                                                                                | DiscussionandMenti<br>on her steps                                                                          |   |    |
| Feedback        | discussio<br>n,<br>lecture,<br>debate | Objective tests                                                                | Empowering<br>studentsIdentify the<br>problem method and<br>mention its<br>advantages and<br>disadvantages. | 2 | 18 |
| Feedback        | discussio<br>n,<br>lecture,<br>debate | Classification of<br>tests by method                                           | Enabling students to<br>identify different<br>testing methods                                               | 2 | 19 |
| Feedback        | discussio<br>n,<br>lecture,<br>debate | strategy                                                                       | Enabling students<br>toLearn about<br>cooperative learning                                                  | 2 | 20 |
| Monthly<br>exam | –                                     | Knowing the<br>students' level and<br>the information<br>they have<br>acquired | Monthly exam                                                                                                | 2 | 21 |
| Feedback        | discussio<br>n,                       | Teaching methods                                                               | Enabling students<br>toKnowing the role                                                                     | 2 | 22 |



|          |                                   |                  |                                                                        |   |    |
|----------|-----------------------------------|------------------|------------------------------------------------------------------------|---|----|
|          | lecture,<br>debate                |                  | of the teacher during<br>collaborative work                            |   |    |
| Feedback | discussion,<br>lecture,<br>debate | Teaching methods | Enabling students<br>to Master one<br>method in reality                | 2 | 23 |
| Feedback | discussion,<br>lecture,<br>debate | Teaching methods | Enabling students<br>to Applying the<br>standard method in<br>teaching | 2 | 24 |
| a test   | discussion,<br>lecture,<br>debate | Teaching methods | Enabling students<br>to Model teaching<br>steps                        | 2 | 25 |
| Feedback | discussion,<br>lecture,<br>debate | Teaching methods | Enabling students to<br>apply methods in<br>teaching                   | 2 | 26 |
| Feedback | discussion,<br>n,                 | Field visits     | Enabling students to<br>identify On field visits                       | 2 | 27 |





|          |                                   |                  |                                                                                              |   |    |
|----------|-----------------------------------|------------------|----------------------------------------------------------------------------------------------|---|----|
|          | lecture,<br>debate                |                  |                                                                                              |   |    |
| Feedback | discussion,<br>lecture,<br>debate | Field visits     | Enabling students<br>toPreparing reports<br>when visiting<br>schools                         | 2 | 28 |
| Feedback | discussion,<br>lecture,<br>debate | Teaching methods | Enabling students<br>toModel teaching<br>steps                                               | 2 | 29 |
| Feedback | discussion,<br>lecture,<br>debate | Calendar         | Enabling students<br>toKnowing the<br>calendar and the<br>characteristics of the<br>calendar | 2 | 30 |

#### 11- Learning and teaching resources

|                       |                                                                                                                                                 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 1- Required textbooks | -General teaching methods Its planning and<br>educational applications, Walid Ahmed, Jaber, Dar Al<br>Fikr for Publishing and Distribution 2013 |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|



|                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                          | <p>-Curriculum and teaching methods,Ramadan Masoud Badawi,Dar Al Fikr for Publishing and Distribution 2011 AD</p> <p>-General teaching methods and their evaluation,Abdul-Hayy Ahmed Al-Subhi Mohammed Abdullah Al-Qasaymeh Khwarazm Scientific Publishers and Libraries 2011 AD</p> <p>-Teaching methods,Khaled Al-Sarayrah and others ,Dar Al Masirah for Printing and Publishing 2010 AD</p> |
| 2- Main references (sources)                                             | <p>- Teaching strategies. Ali Munir Al-Husari Dar Al-Asar Al-Ilmi for Printing and Publishing 2015</p> <p>2- Creativity in teaching,Khalil Abdel Fattah Hammad,And my name is Yasra Badr,Al-Falah Library for Publishing and Distribution 2014</p>                                                                                                                                              |
| A- Recommended books and references (scientific journals, reports, etc.) |                                                                                                                                                                                                                                                                                                                                                                                                 |
| B - Electronic references, Internet sites                                | -Al-Noor Library (electronic library) is free on the search engine.Google                                                                                                                                                                                                                                                                                                                       |





## Course Description Form

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>1. Course Name:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |
| Atomic physics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                          |
| <b>2. Course Code:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |
| PHY303                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |
| <b>3. Chapter/Year:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |
| 2025-2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |
| <b>4. Date of preparation of this description:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |
| 1/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |
| <b>5. Available Attendance Formats:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |
| Face-to-face education                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |
| <b>6. Number of Hours (Total) / Number of Credits (Total)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| 90 Hours/7 Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |
| <b>7. Course administrator name (if more than one name mentioned)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |
| Name: a.t. Ahmed Turki Abdulhameed<br>Email: <a href="mailto:phy.ahmedturki@uohamdaniya.edu.iq">phy.ahmedturki@uohamdaniya.edu.iq</a>                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |
| <b>8. Course Objectives</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |
| <p><b>1- Introduce students to the theory of special and general relativity and understand its key concepts such as relativity, temporal dilation, longitudinal contraction, and how supervelocity affects mass and energy.</b></p> <p><b>2- Understand the effect of relativity on motion, time, and energy, and how to explain phenomena such as time variation and longitudinal contraction using the theory of relativity.</b></p> <p><b>3- Study of atomic structures, nuclear reactions, nuclear energy reactions and their practical applications.</b></p> | <p>Course Objectives</p> |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <p>4- Understand the practical applications of nuclear physics such as nuclear energy, nuclear medicine, and medical radiography.</p> <p>5- Develop the computational skills necessary to understand and analyze relativistic and atomic phenomena, as well as empirical skills through conducting practical experiments and data analysis.</p> <p>6- Scientific Communication: Enhancing skills in scientific communication and presenting results and conclusions accurately and understandably.</p>                                                                                                                                             |                 |
| <b>9. Teaching and Learning Strategies</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |
| <p>1- Students should be able to understand the concepts of special theory of relativity, such as relativistic time and longitudinal contraction, as well as understand how these concepts can be applied to solving related physics problems.</p> <p>2- Students should gain a deep knowledge of atomic structures and nuclear reactions, including understanding different atomic models and interpreting nuclear fusion and fission reactions.</p> <p>3- Students must be able to analyze and understand the practical applications of relativistic and atomic physics, such as nuclear power technology and nuclear medicine applications.</p> | <p>Strategy</p> |





|                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>4- Students should acquire the skills needed to solve complex physical problems in the fields of relativity and atomization, as well as develop experimental skills by conducting hands-on experiments and data analysis.</p> <p>5- Students should be able to explain physical results accurately and understandably, and present the conclusions of experiments and studies in a scientific manner.</p> |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

#### 10. Course Structure

| Evaluation Method | Learning method                  | Unit Name or Subject                                                                    | Required Learning Outcomes                | Hours | Week   |
|-------------------|----------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------|-------|--------|
| Direct Questions  | Lecture, Discussion and Dialogue | Introduction to the Special Relativity Theory - The Experiment of Michelson and Morley  | Theoretical Knowledge<br>Applied Analysis | 3     | First  |
| Direct Questions  | Lecture, Discussion and Dialogue | Attribution Frameworks - Galileo Transformers - Hypotheses of Special Relativity Theory | Theoretical Knowledge<br>Applied Analysis | 3     | Second |



|                  |                                  |                                                                                   |                                           |   |         |
|------------------|----------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------|---|---------|
| Direct Questions | Lecture, Discussion and Dialogue | Lawrence Transformations - Relativity of Time - The Twins Dilemma                 | Theoretical Knowledge<br>Applied Analysis | 3 | Third   |
| Direct Questions | Lecture, Discussion and Dialogue | Relative Length-Relative Mass-Velocity Addition                                   | Theoretical Knowledge<br>Applied Analysis | 3 | Fourth  |
| Direct Questions | Lecture, Discussion and Dialogue | Mass and Energy Equivalence - Solving Problems                                    | Theoretical Knowledge<br>Applied Analysis | 3 | V       |
| Direct Questions | Lecture, Discussion and Dialogue | Photon Theory - Black Body Radiation - Laws for the Study of Black Body Radiation | Theoretical Knowledge<br>Applied Analysis | 3 | Sixth   |
|                  | Lecture, Discussion and Dialogue | PV Phenomenon - Stop Voltage - Threshold Frequency                                | Theoretical Knowledge<br>Applied Analysis | 3 | Seventh |
| Direct Questions | Lecture, Discussion and Dialogue | The photoelectric equation of Einstein-                                           | Theoretical Knowledge<br>Applied Analysis | 3 | Eighth  |





|                  |                                  |                                                                                         |                                        |   |            |
|------------------|----------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------|---|------------|
| Direct Questions | Lecture, Discussion and Dialogue | Compton-Postern Electron Pair Formation Phenomenon                                      | Theoretical Knowledge Applied Analysis | 3 | Ninth      |
| Direct Questions | Lecture, Discussion and Dialogue | Problem Solving                                                                         |                                        | 3 | X          |
| Direct Questions | Lecture, Discussion and Dialogue | Introduction of X-rays-X-ray generation-X-ray spectrum                                  | Theoretical Knowledge Applied Analysis | 3 | Eleventh   |
| Direct Questions | Lecture, Discussion and Dialogue | Interpretation of the Spectrum Phenomenon According to Quantum Theory-X-Ray Diffraction | Theoretical Knowledge Applied Analysis | 3 | Twelfth    |
| Direct Questions | Lecture, Discussion and Dialogue | Moseley's Law-X-ray Absorption                                                          | Theoretical Knowledge Applied Analysis | 3 | Thirteenth |
| Direct Questions | Lecture, Discussion and Dialogue | - X-ray absorption methods                                                              | Theoretical Knowledge Applied Analysis | 3 | Fourteenth |
|                  | Lecture, Discussion and Dialogue | Fluorescent X-ray- and the Oaker Effect-Solving Problems                                | Theoretical Knowledge Applied Analysis | 3 | Fifteenth  |



|                  |                                  |                                                                    |                                           |   |                 |
|------------------|----------------------------------|--------------------------------------------------------------------|-------------------------------------------|---|-----------------|
| Direct Questions | Lecture, Discussion and Dialogue | De Broly-Particulate Diffraction Waves                             | Theoretical Knowledge<br>Applied Analysis | 3 | Sixteenth week  |
| Direct Questions | Lecture, Discussion and Dialogue | De Broly wave velocity-                                            | Theoretical Knowledge<br>Applied Analysis | 3 | Week Seventeen  |
| Direct Questions | Lecture, Discussion and Dialogue | Wave speed and cluster speed                                       | Theoretical Knowledge<br>Applied Analysis | 3 | Week Eighteenth |
| Direct Questions | Lecture, Discussion and Dialogue | The principle of indeterminate inaccuracy                          | Theoretical Knowledge<br>Applied Analysis | 3 | Week Nineteen   |
| Direct Questions | Lecture, Discussion and Dialogue | Applications to the Principle of Accuracy - Problem Solving        | Theoretical Knowledge<br>Applied Analysis | 3 | Week 20         |
| Direct Questions | Lecture, Discussion and Dialogue | Introduction to Atomic Structure - Atomic Theories - Thomson Model | Theoretical Knowledge<br>Applied Analysis | 3 | Week 21         |
| Direct Questions | Lecture, Discussion and Dialogue | Rutherford Model- Rutherford Experience                            | Theoretical Knowledge<br>Applied Analysis | 3 | Week 22         |





|                     |                                        |                                                                                |                                              |   |                             |
|---------------------|----------------------------------------|--------------------------------------------------------------------------------|----------------------------------------------|---|-----------------------------|
|                     |                                        |                                                                                |                                              |   |                             |
|                     | Lecture,<br>Discussion<br>and Dialogue | Electron<br>Orbits -<br>Atomic<br>Spectra                                      | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>Twent<br>y<br>Three |
| Direct<br>Questions | Lecture,<br>Discussion<br>and Dialogue | Bohr Model of<br>Atoms-<br>Energy Levels<br>and Spectra                        | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>Twent<br>y Four     |
| Direct<br>Questions | Lecture,<br>Discussion<br>and Dialogue | Kernel<br>Movement -<br>Problem<br>Solving                                     | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>Twent<br>y Five     |
| Direct<br>Questions | Lecture,<br>Discussion<br>and Dialogue | Introduction<br>to quantum<br>mechanics                                        | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>twenty<br>sixth     |
| Direct<br>Questions | Lecture,<br>Discussion<br>and Dialogue | Wave-<br>Derivation of<br>Schrödnecker'<br>s Equation                          | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>twenty<br>seven     |
| Direct<br>Questions | Discussion<br>and Dialogue             | Schrödnecker'<br>s non-time-<br>dependent<br>equation                          | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>Twent<br>y Eight    |
| Direct<br>Questions | Discussion<br>and Dialogue             | Schrödenker's<br>Time-Based<br>Equation-<br>Hamiltonian-<br>Momentum<br>Effect | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>twenty<br>ninth     |
|                     |                                        | Problem<br>Solving                                                             | Theoretical<br>Knowledge<br>Applied Analysis | 3 | Week<br>30                  |



|                                                                                                                                                                     |                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>11. Course Evaluation</b>                                                                                                                                        |                                                                 |
| Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports.... etc |                                                                 |
| <b>12. Learning and Teaching Resources</b>                                                                                                                          |                                                                 |
| <b>1- Atomic Physics (Dr.Talib Nahi Al-Khafaji).</b><br><b>2- Molecular Physics (Dr.Khalid Abdullah Jassim, Dr.Essam Ahme Mahmoud)</b>                              | Required textbooks (methodology if available)                   |
| <b>Concepts in Modern Physics</b><br><b>(Arthur Paisar)</b>                                                                                                         | Primary References (Sources)                                    |
| Follow up on electronic and internet references that include solid scientific websites and library websites in some international universities                      | Recommended Books and References (Scientific Journals, Reports) |
| Websites related to modern and atomic physics                                                                                                                       | References, Websites                                            |





## Course Description Form

|                                                                     |                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                     |                                                                                                                                                                                                                                                                                                                                                  |
| Electronics                                                         |                                                                                                                                                                                                                                                                                                                                                  |
| 2. Course Code:                                                     |                                                                                                                                                                                                                                                                                                                                                  |
| PHY304                                                              |                                                                                                                                                                                                                                                                                                                                                  |
| 3. Semester / Year:                                                 |                                                                                                                                                                                                                                                                                                                                                  |
| Yearly                                                              |                                                                                                                                                                                                                                                                                                                                                  |
| 4. Description Preparation Date:                                    |                                                                                                                                                                                                                                                                                                                                                  |
| 21/9/2025                                                           |                                                                                                                                                                                                                                                                                                                                                  |
| 5. Available Attendance Forms:                                      |                                                                                                                                                                                                                                                                                                                                                  |
| Attendance                                                          |                                                                                                                                                                                                                                                                                                                                                  |
| 6. Number of Credit Hours (Total) / Number of Units (Total)         |                                                                                                                                                                                                                                                                                                                                                  |
| 90 HOURS/ 7 UNITS                                                   |                                                                                                                                                                                                                                                                                                                                                  |
| 7. Course administrator's name (mention all, if more than one name) |                                                                                                                                                                                                                                                                                                                                                  |
| Name: Assistant Prof. Dr. Thoalfiqar Ali Zaker                      |                                                                                                                                                                                                                                                                                                                                                  |
| Email: thoalfiqar.physics@uohamdaniya.edu.iq                        |                                                                                                                                                                                                                                                                                                                                                  |
| 8. Course Objectives                                                |                                                                                                                                                                                                                                                                                                                                                  |
| Course Objectives                                                   | Introducing students to the principles of electronics, the physical laws used, and electronic circuits, in addition to the practical application of connecting electronic circuits, their working mechanism, and their applications in the laboratory.                                                                                           |
| 9. Teaching and Learning Strategies                                 |                                                                                                                                                                                                                                                                                                                                                  |
| Strategy                                                            | <ol style="list-style-type: none"> <li>1. Providing students with physical information and concepts<br/>Preparing trained and qualified cadres to work in institutions.</li> <li>2. Identify the scientific applications of each scientific knowledge.</li> <li>3. Identify the scientific applications of each scientific knowledge.</li> </ol> |



Course Description Form

File Number

Page

Year

2000

Attendance

1. Number of hours (including travel) spent in field

on 10/10/00

2. General statement of course content and its scope (see note)

3. Number of students enrolled in course

4. Course Objectives

5. Course Objectives

6. Number of hours spent in field

7. Number of hours spent in field

8. Number of hours spent in field

9. Number of hours spent in field

10. Number of hours spent in field

11. Number of hours spent in field

12. Faculty and Staff

13. Number of students with physical disabilities

14. Number of students with physical disabilities

15. Number of students with physical disabilities

16. Number of students with physical disabilities

17. Number of students with physical disabilities

18. Number of students with physical disabilities

19. Number of students with physical disabilities





## 10. Course Structure

| Week | Hours | Required Learning Outcomes        | Unit or subject name                             | Learning method                                         | Evaluation method |
|------|-------|-----------------------------------|--------------------------------------------------|---------------------------------------------------------|-------------------|
| 1    | 3     | theoretical and applied knowledge | General introduction to semiconductors           | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 2    | 3     | theoretical and applied knowledge | Classification of materials                      | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 3    | 3     | theoretical and applied knowledge | Electron distribution and Fermi level            | Lecture, discussion, dialogue, and practical experience | Homework          |
| 4    | 3     | theoretical and applied knowledge | Pure semiconductors                              | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 5    | 3     | theoretical and applied knowledge | Conduction in solids (semiconductors)            | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 6    | 3     | theoretical and applied knowledge | Doping                                           | Lecture, discussion, dialogue, and practical experience | Homework          |
| 7    | 3     | theoretical and applied knowledge | Diodes                                           | Lecture, discussion, dialogue, and practical experience | Homework          |
| 8    | 3     | theoretical and applied knowledge | Reverse bias                                     | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 9    | 3     | theoretical and applied knowledge | Energy band diagram of a diode in biased state   | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 10   | 3     | theoretical and applied knowledge | Calculate the barrier voltage                    | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 11   | 3     | theoretical and applied knowledge | Introduction to Diode Applications               | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 12   | 3     | theoretical and applied knowledge | Continuous Component                             | Lecture, discussion, dialogue, and practical experience | Quiz              |
| 13   | 3     | theoretical and applied knowledge | Modulation efficiency of half-wave rectifier hHW | Lecture, discussion, dialogue, and practical experience | Homework          |

| Item No. | Description        | Quantity | Unit   | Price | Total  |
|----------|--------------------|----------|--------|-------|--------|
| 101      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 102      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 103      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 104      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 105      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 106      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 107      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 108      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 109      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 110      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 111      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 112      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 113      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 114      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 115      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 116      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 117      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 118      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 119      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |
| 120      | 100% Cotton Fabric | 100      | Sq Yds | 1.50  | 150.00 |





|    |   |                                   |                                                                           |                                                         |          |
|----|---|-----------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------|----------|
|    |   |                                   |                                                                           | experience                                              |          |
| 14 | 3 | theoretical and applied knowledge | Modulation efficiency of hFW full wave modulator                          | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 15 | 3 | theoretical and applied knowledge | Clipping and Clamping Circuits                                            | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 16 | 3 | theoretical and applied knowledge | Introduction to bipolar transistor                                        | Lecture, discussion, dialogue, and practical experience | Homework |
| 17 | 3 | theoretical and applied knowledge | Types of transistor bias                                                  | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 18 | 3 | theoretical and applied knowledge | Transistor connection methods                                             | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 19 | 3 | theoretical and applied knowledge | Load line and working point                                               | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 20 | 3 | theoretical and applied knowledge | The effect of temperature and the stability of the transistor's operation | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 21 | 3 | theoretical and applied knowledge | Transistor bias circuits                                                  | Lecture, discussion, dialogue, and practical experience | Homework |
| 22 | 3 | theoretical and applied knowledge | Self-biasing circuit                                                      | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 23 | 3 | theoretical and applied knowledge | Voltage divider bias circuit                                              | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 24 | 3 | theoretical and applied knowledge | Introduction: Bipolar Transistor Amplifiers                               | Lecture, discussion, dialogue, and practical experience | Quiz     |







|    |   |                                                                                                                       |                                                   |                                                         |          |
|----|---|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------|----------|
| 25 | 3 | Radius of gyration, Energy of a body rolling on a horizontal plane, Work and power rotational motion, and the Torque. | Frequency response of the amplifier               | Lecture, discussion, dialogue, and practical experience | Homework |
| 26 | 3 | theoretical and applied knowledge                                                                                     | Darlington's Pair                                 | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 27 | 3 | theoretical and applied knowledge                                                                                     | multistage amplifiers                             | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 28 | 3 | theoretical and applied knowledge                                                                                     | Field effect transistors                          | Lecture, discussion, dialogue, and practical experience | Quiz     |
| 29 | 3 | theoretical and applied knowledge                                                                                     | Characteristic curves of field effect transistors | Lecture, discussion, dialogue, and practical experience | Homework |
| 30 | 3 | theoretical and applied knowledge                                                                                     | Metal oxide field effect transistor               | Lecture, discussion, dialogue, and practical experience | Quiz     |

### 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, quizzes

| No. | Evaluation method        | Marks      | % Grads |
|-----|--------------------------|------------|---------|
| 1   | Lab. Exam                | 10         | %10     |
| 2   | Quizzes                  | 10         | %10     |
| 3   | Term Exam                | 20         | %20     |
| 4   | Final Exam(experimental) | 10         | %10     |
| 5   | Final Exam (Theory)      | 50         | %50     |
|     | sum                      | <b>100</b> | %100    |

### 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                      |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | Electronic Principles by Albert Malvino                                                                                                              |
| Main references (sources)                                          | Introduction to Physics by John D. Cutnell, Kenneth W. Johnson 8th.Ed., 2010.                                                                        |
| Recommended books and references (scientific journals, reports...) | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |







1000000

1000000





## Course Description Form

|                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Course Name:                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Solid state physical                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2. Course Code:                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| PHY405                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3. Semester / Year:                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2025/2026<br>منوي                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. Description Preparation Date:                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 23/9/2025                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. Available Attendance Forms:                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| In-person learning                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6. Number of Credit Hours (Total) / Number of Units (Total)                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 90 HOURS / 5 UNITS                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. Course administrator's name (mention all, if more than one name)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Name: Asst. Prof. Dr. Siham Jasim Abdullah<br>Email: : siham.jasim@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. Course Objectives                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Course Objectives                                                                     | <ol style="list-style-type: none"> <li>1. Students learn about the importance of scientific knowledge in solid-state physics in everyday life.</li> <li>2. Students learn about the different types of scientific knowledge, including facts, concepts, principles, and strict laws, in solid-state physics.</li> <li>3. Study the structural and functional properties of solid materials related to the crystal structure of solid materials. The course includes the study of interatomic forces and types of crystal bonds, crystal structure and the concept of the crystal lattice, crystal systems, elements of crystal symmetry, Miller coefficients, crystal defects, inverted lattice, X-ray diffraction and its use in studying the crystal structure, Lattice</li> </ol> |



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>dynamics, lattice vibration patterns and phonons, thermal properties of solids, heat capacity: classical model, Einstein model, Debye model. This course enables the student to understand the crystal structure on which the various properties of solids depend.</p> <ol style="list-style-type: none"> <li>4. Providing students with the theory of bundles in solid materials and semiconductors.</li> <li>5. Acquiring the skills necessary to work in the fields of physics.</li> <li>6. Enhancing the value and importance of physics subjects for students in the College of Education when practicing their professions as teachers in middle and secondary schools.</li> </ol> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 9. Teaching and Learning Strategies

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strategy | <ol style="list-style-type: none"> <li>1. Providing students with physics information and concepts.<br/>Preparing trained and qualified personnel to work in institutions.</li> <li>2. Identifying the scientific applications of each scientific knowledge.</li> <li>3. Identify the different types of scientific knowledge, including facts, concepts, principles, theories, and special devices for structural and optical examinations related to the Solid State Physics course.</li> </ol> <p>Enabling the student to acquire knowledge and understanding of the scientific laws of physics, practical applications of physics, logical and scientific analysis, and interpretation of physical phenomena.</p> |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 7. Course Structure





| Week | Hours | Required Learning Outcomes                                                                                                                                           | Unit or subject name                      | Learning method     | Evaluation method |
|------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------|-------------------|
| 1    | 3     | Presentation of syllabus vocabulary, introduction, crystal structure, crystal formula of solids, crystal lattice, Bravais lattice and transition vectors in crystals | Crystal structure                         | Lecture, discussion | Direct questions  |
| 2    | 3     | Unit cell, crystal lattice in 3D space, Wickner-Sitz primitive cell, filling factor, solving examples                                                                | Unit cell                                 | Lecture, discussion | Direct questions  |
| 3    | 3     | Miller indexes, angle between planes, distance between parallel planes, crystal symmetry, solve examples                                                             | Miller indexes                            | Lecture, discussion | Direct questions  |
| 4    | 3     | Diffraction in crystals, types of diffraction, Braque's law of diffraction, solving examples                                                                         | Diffraction                               | Lecture, discussion | Direct questions  |
| 5    | 3     | Experimental methods for X-ray diffraction from crystal planes, Laue method, rotating crystal method, powder method                                                  | Diffraction method                        | Lecture, discussion | Direct questions  |
| 6    | 3     | Reciprocal lattice, construction methods, fundamental axes                                                                                                           | Understanding reciprocal lattice concepts | Lecture, discussion | Direct questions  |
| 7    | 3     |                                                                                                                                                                      |                                           | Exam                |                   |
| 8    | 3     | Lattice dynamics, lattice vibration, one-atom lattice vibration in one dimension                                                                                     | Lattice dynami                            | Lecture, discussion | Direct questions  |
| 9    | 3     | lattice vibration, vibration of a two-atomic lattice in one dimension, Einstein's model, Debye's model                                                               | lattice vibration                         | Lecture, discussion | Direct questions  |
| 10   | 3     | Band theory of solids, origin of                                                                                                                                     | Band theory                               | Lecture, discussion | Direct questions  |



|    |   |                                                                                                                                 |                       |                     |                  |
|----|---|---------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|------------------|
|    |   | energy bands, energy states in electron orbitals, Hall effect, physical explanation of Hall effect                              |                       |                     |                  |
| 11 | 3 | PN junction: diode, depletion region, barrier potential,                                                                        | diode                 | Lecture, discussion | Direct questions |
| 12 | 3 | Semiconductors, Introduction, Properties of Semiconductor Materials, Types of Semiconductors,                                   | Semiconductors        | Lecture, discussion | Direct questions |
| 13 | 3 | Impure semiconductor (doped), negative type (n-type), positive type (p-type), doping levels                                     | Semiconductor types   | Lecture, discussion | Direct questions |
| 14 | 3 |                                                                                                                                 | review                | Lecture, discussion | Direct questions |
| 15 | 3 |                                                                                                                                 |                       | Exam                |                  |
| 16 | 3 | Semiconductor devices, tunnel diode, current-voltage properties,                                                                | Semiconductor devices | Lecture, discussion | Direct questions |
| 17 | 3 | Semiconductor lasers, advantages of semiconductor lasers, introduction to nanotechnology and its relationship to semiconductors | Semiconductor lasers  | Lecture, discussion | Direct questions |
| 18 | 3 | Classification of nanomaterials and their applications, one-dimensional                                                         | nanomaterials         | Lecture, discussion | Direct questions |





|    |   |                                                                                                       |                           |                     |                  |
|----|---|-------------------------------------------------------------------------------------------------------|---------------------------|---------------------|------------------|
|    |   | nanomaterials, two-dimensional nanomaterials                                                          |                           |                     |                  |
| 19 | 3 | 3D nanomaterials, properties of nanomaterials, Nano semiconductors,                                   | nanomaterials, properties | Lecture, discussion | Direct questions |
| 20 | 3 | Crystal defects<br>Crystal defects are classified as point defects, gaps, and Schottky defects.       | Crystal defects           | Lecture, discussion | Direct questions |
| 21 | 3 | Frenkel defects, lattice defects, linear defects, dislocations, ridge dislocation, spiral dislocation | Defects types             | Lecture, discussion | Direct questions |
| 22 | 3 | Surface defect, grain boundary, stacking defect, twins                                                | Surface defect            | Lecture, discussion | Direct questions |
| 23 | 3 |                                                                                                       |                           | Exam                |                  |
| 24 | 3 | Superconductivity, Introduction, Applications of Superconductivity, Critical Temperature,             | Superconductivity         | Lecture, discussion | Direct questions |
| 25 | 3 | Josephson effect, Meissner effect, critical magnetic field, some applications of hyper conductivity   | Josephson effect,         | Lecture, discussion | Direct questions |
| 26 | 3 | Free electrons, classical theory of free electrons,                                                   | Free electrons,           | Lecture, discussion | Direct questions |



|    |   |                                                                                                                                              |                        |                         |                  |
|----|---|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------|------------------|
|    |   | Drude theory, Lortz model                                                                                                                    |                        |                         |                  |
| 27 | 3 | Failure of classical theory, Fermi-Dirac statistics of free electrons in three dimensions, Fermi energy, density of electron specific states | Fermi-Dirac statistics | Lecture, discussion     | Direct questions |
| 28 | 3 | Solve various examples                                                                                                                       |                        | 'discussion             | Direct questions |
| 29 | 3 | General review of curriculum vocabulary                                                                                                      |                        | Discussion and dialogue | Direct questions |
| 30 | 3 |                                                                                                                                              |                        | Exam                    |                  |

#### 8. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

#### 9. Learning and Teaching Resources

|                                               |                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | <p>Kittel, C., 2005., Introduction to solid state physics, 8th ed., Wiley.</p> <p>-2 Omar MA., 1975, Elementary solid state physics, principles and applications, Addison-Wesley Publishing Company.</p> <p>-3 فيزياء الحالة الصلبة ، مؤيد جبرائيل الجزء الاول والثاني.</p> <p>-4 فيزياء حالة صلبة ، يحيى الجمال</p> |
| Main references (sources)                     | <p>1- Om Prakash Pahuja "Solid State Physics" Laxmi Publications (P) LTD 1<sup>st</sup> ed., 2005 , New Delhi.</p> <p>2- Ziman, Z.M., "Principles of the theory of solids" Cambridge, 1964</p>                                                                                                                       |





|                                                                       |                                                                                                                                                      |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       | 3- Peter M., Lectures at Manchester University 2006                                                                                                  |
| Recommended books and references<br>(scientific journals, reports...) | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |
| Electronic References, Websites                                       | Solid State Websites                                                                                                                                 |



|    |   |                                                                                                                                              |                        |                         |                  |
|----|---|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------|------------------|
|    |   | Drude theory, Lortz model                                                                                                                    |                        |                         |                  |
| 27 | 3 | Failure of classical theory, Fermi-Dirac statistics of free electrons in three dimensions, Fermi energy, density of electron specific states | Fermi-Dirac statistics | Lecture, discussion     | Direct questions |
| 28 | 3 | Solve various examples                                                                                                                       |                        | ' discussion            | Direct questions |
| 29 | 3 | General review of curriculum vocabulary                                                                                                      |                        | Discussion and dialogue | Direct questions |
| 30 | 3 |                                                                                                                                              |                        | Exam                    |                  |

#### 8. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

#### 9. Learning and Teaching Resources

|                                               |                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any) | <p>Kittel, C., 2005., Introduction to solid state physics, 8th ed., Wiley.</p> <p>-2 Omar MA., 1975, Elementary solid state physics, principles and applications, Addison-Wesley Publishing Company.</p> <p>-3 فيزياء الحالة الصلبة ، مؤيد جبرائيل الجزء الاول والثاني.</p> <p>-4 فيزياء حالة صلبة ، يحيى الجمال</p> |
| Main references (sources)                     | <p>1- Om Prakash Pahuja "Solid State Physics" Laxmi Publications (P) LTD 1<sup>st</sup> ed., 2005 , New Delhi.</p> <p>2- Ziman, Z.M., "Principles of the theory of solids" Cambridge, 1964</p>                                                                                                                       |





|                                                                    |                                                                                                                                                      |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                    | 3- Peter M., Lectures at Manchester University 2006                                                                                                  |
| Recommended books and references (scientific journals, reports...) | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |
| Electronic References, Websites                                    | Solid State Websites                                                                                                                                 |



## Course Description Form

|                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nuclear Physics                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>2. Course Code:</b>                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| PHY404                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>3. Semester / Year:</b>                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2025-2026                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>4. Description Preparation Date:</b>                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 21/9/2025                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>5. Available Attendance Forms:</b>                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Presence education                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 90 hours/7 units                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>7. Course administrator's name (mention all, if more than one name)</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Name: Prof. Dr. Malik Hussein Kheder<br>Email: <a href="mailto:dr.malik73@uohamdaniya.edu.iq">dr.malik73@uohamdaniya.edu.iq</a> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>8. Course Objectives</b>                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Course Objectives</b>                                                                                                        | <ol style="list-style-type: none"> <li>1. Enhancing the skill objectives of the nuclear subject for fourth-year students in the Physics Department.</li> <li>2. Nuclear Data Analysis: The ability to analyze nuclear data, understand its foundations, and apply it to various nuclear reactions...</li> <li>3. Understanding Nuclear Design and Operation: The ability to design and analyze various nuclear systems and understand how to operate and maintain them.</li> <li>4. Nuclear Safety Assessment: The ability to assess the nuclear safety of nuclear systems and processes and implement necessary safety procedures.</li> </ol> |
| <b>9. Teaching and Learning Strategies</b>                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Strategy</b>                                                                                                                 | <ol style="list-style-type: none"> <li>1. Understanding Nuclear Theories: The ability to understand basic concepts in nuclear theories, such as nuclear reactions, radioactive decay, and nuclear fusion reactions.</li> <li>2. Radioactive Decay Analysis: The ability to analyze the behavior of radioactive decay using appropriate nuclear models and understand its effects on matter and the environment.</li> </ol>                                                                                                                                                                                                                     |



3. Interpretation of Nuclear Reactions: The ability to interpret and analyze various nuclear reactions, including fission and fusion reactions, and their applications.

4. Applications of Nuclear Technologies: The ability to understand and analyze applications of nuclear technologies such as nuclear energy, radiation, medical imaging, and chemical analysis.

#### 10. Course Structure

| Week | Hours | Required Learning Outcomes                 | Unit or subject name                                                                                         | Learning method                  | Evaluation method             |
|------|-------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|
| 1    | 3     | Theoretical knowledge and applied analysis | Introduction to nuclear properties, definitions and important terms, units and dimensions in nuclear physics | Lecture, discussion and dialogue | Direct questions              |
| 2    | 3     | Theoretical knowledge and applied analysis | Nuclear charge, nuclear radius, distance of closest approach                                                 | Lecture, discussion and dialogue |                               |
| 3    | 3     | Theoretical knowledge and applied analysis | Nuclear mass, mass increase and decrease, binding ratio                                                      | Lecture, discussion and dialogue |                               |
| 4    | 3     | Theoretical knowledge and applied analysis | nuclear binding energy, binding energy rate, dissociation energies                                           | Lecture, discussion and dialogue |                               |
| 5    | 3     | Theoretical knowledge and applied analysis | Valley of stability, quantum numbers of individual nucleons, fundamental quantum number,                     | Lecture, discussion and dialogue |                               |
| 6    | 3     | Theoretical knowledge and applied analysis | Orbital quantum number, magnetic quantum number, spin quantum number                                         | Lecture, discussion and dialogue |                               |
| 7    | 3     | Theoretical knowledge and applied analysis | The quantum number of the total angular momentum of a single particle                                        | Lecture, discussion and dialogue |                               |
| 8    | 3     | Theoretical knowledge and applied analysis | Nuclear angular momentum, nuclear spin, symmetry                                                             | Lecture, discussion and dialogue |                               |
| 9    | 3     | Theoretical knowledge and applied analysis | Introduction to nuclear activity, the law of radioactivity                                                   | Lecture, discussion and dialogue |                               |
| 10   | 3     | Theoretical knowledge and applied analysis | half-life, average lifespan                                                                                  | Lecture, discussion and dialogue | In addition to a monthly exam |
| 11   | 3     | Theoretical knowledge and applied analysis | Total number of radioactive nuclei, measurement of half-lives                                                | Lecture, discussion and dialogue |                               |
| 12   | 3     | Theoretical knowledge and applied analysis | Production of radioactive isotopes from the decay of the parent nucleus, the perfect balance                 | Lecture, discussion and dialogue |                               |



|    |   |                                            |                                                                                                                           |                                  |                               |
|----|---|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------|
| 13 | 3 | Theoretical knowledge and applied analysis | Time of greatest effectiveness for productive newborn nuclei, dissolution in multiple ways                                | Lecture, discussion and dialogue |                               |
| 14 | 3 | Theoretical knowledge and applied analysis | Show the breadth of dissolved cases, specify the date                                                                     | Lecture, discussion and dialogue |                               |
| 15 | 3 | Theoretical knowledge and applied analysis | Production of a radioactive isotope by nuclear bombardment                                                                | Lecture, discussion and dialogue |                               |
| 16 | 3 | Theoretical knowledge and applied analysis | Introduction to units of radioactivity, curie, specific potency, roentgen                                                 | Lecture, discussion and dialogue |                               |
| 17 | 3 | Theoretical knowledge and applied analysis | Absorption dose, rem, permissible exposure limit                                                                          | Lecture, discussion and dialogue |                               |
| 18 | 3 | Theoretical knowledge and applied analysis | Introduction to radiation interactions with matter, bremsstrahlung, and the interaction of charged particles with matter. | Lecture, discussion and dialogue |                               |
| 19 | 3 | Theoretical knowledge and applied analysis | Interaction of heavy charged particles, energy loss by collision                                                          | Lecture, discussion and dialogue |                               |
| 20 | 3 | Theoretical knowledge and applied analysis | Range, electron interaction                                                                                               | Lecture, discussion and dialogue | In addition to a monthly exam |
| 21 | 3 | Theoretical knowledge and applied analysis | Neutron interaction with matter                                                                                           | Lecture, discussion and dialogue |                               |
| 22 | 3 | Theoretical knowledge and applied analysis | nuclear fission, chain reaction                                                                                           | Lecture, discussion and dialogue | In addition to a monthly exam |
| 23 | 3 | Theoretical knowledge and applied analysis | How nuclear fission occurs, fission products                                                                              | Lecture, discussion and dialogue |                               |
| 24 | 3 | Theoretical knowledge and applied analysis | Nuclear fusion, how fusion occurs                                                                                         | Lecture, discussion and dialogue |                               |
| 25 | 3 | Theoretical knowledge and applied analysis | controlled fusion, magnetic confinement fusion                                                                            | Lecture, discussion and dialogue |                               |
| 26 | 3 | Theoretical knowledge and applied analysis | Problems facing scientists in nuclear fusion, advantages of nuclear fusion                                                | Lecture, discussion and dialogue |                               |
| 27 | 3 | Theoretical knowledge and applied analysis | Nuclear models, liquid drop model                                                                                         | Lecture, discussion and dialogue |                               |
| 28 | 3 | Theoretical knowledge and applied analysis | Correction of the liquid drop equation                                                                                    | Lecture, discussion and dialogue |                               |
| 29 | 3 | Theoretical knowledge and applied analysis | Shell model                                                                                                               | Lecture, discussion and dialogue |                               |
| 30 | 3 | Theoretical knowledge and applied analysis | How do magic numbers appear?                                                                                              | Lecture, discussion and dialogue |                               |



## 11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

## 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                      |
|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | Nuclear Physics / Written by Munib Adel Khalil                                                                                                       |
| Main references (sources)                                          | Principles of Nuclear Physics / Translated by Dr. Asim Abdel Karim Azouz                                                                             |
| Recommended books and references (scientific journals, reports...) | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |
| Electronic References, Websites                                    | Websites about nuclear physics                                                                                                                       |





|                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Course Description</p> <p>During the course of the semester, students will be required to write a research paper, a term paper, and a final paper. The course will also include a variety of other assignments and projects.</p>       | <p>2. Learning and Teaching Objectives</p> <p>The course is designed to provide students with a solid foundation in the field of research. The objectives of the course are to:</p> <ul style="list-style-type: none"> <li>Develop the student's ability to identify and formulate research questions.</li> <li>Develop the student's ability to conduct research and analyze data.</li> <li>Develop the student's ability to write research papers and reports.</li> </ul> |
| <p>3. Prerequisites</p> <p>Students must have completed the following courses before enrolling in this course:</p> <ul style="list-style-type: none"> <li>Research Methods (101)</li> <li>Statistics (102)</li> <li>Writing (103)</li> </ul> | <p>4. Course Materials</p> <p>The course materials include the following:</p> <ul style="list-style-type: none"> <li>Textbook: Research Methods (101)</li> <li>Journal: Statistics (102)</li> <li>Journal: Writing (103)</li> </ul>                                                                                                                                                                                                                                         |



## Course Description Form (Measurement and Evaluation)

|                                                                                                                                                                                                                                                                                                                                                                                                                             |                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Course name:                                                                                                                                                                                                                                                                                                                                                                                                                | .1                              |
| <b>Measurement and Evaluation</b>                                                                                                                                                                                                                                                                                                                                                                                           |                                 |
| Course code:                                                                                                                                                                                                                                                                                                                                                                                                                | .2                              |
| EPS401                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |
| Chapter/Year:                                                                                                                                                                                                                                                                                                                                                                                                               | .3                              |
| 2025-2026                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |
| Date of preparation of this description:                                                                                                                                                                                                                                                                                                                                                                                    | .4                              |
| 17/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |
| Available attendance forms:                                                                                                                                                                                                                                                                                                                                                                                                 | .5                              |
| In-person education                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |
| Number of study hours (total) / Number of units (total)                                                                                                                                                                                                                                                                                                                                                                     | .6                              |
| 60 hours / 4 units                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |
| Course Supervisor Name (if more than one name is mentioned)                                                                                                                                                                                                                                                                                                                                                                 | .7                              |
| Name: M.M. Younis Dharar Jassim Email: <a href="mailto:youniesdrar12345@uohamdanira.edu.iq">youniesdrar12345@uohamdanira.edu.iq</a>                                                                                                                                                                                                                                                                                         |                                 |
| Course objectives                                                                                                                                                                                                                                                                                                                                                                                                           | .8                              |
| <p>The importance of evaluation and measurement and its role in improving the educational process. -1</p> <p>Basic concepts in educational measurement and evaluation -2</p> <p>Types of achievement tests, advantages and disadvantages of each, and methods of preparing them -3</p> <p>Testing methods and the advantages and disadvantages of each -4</p> <p>Educational objectives, their types and formulation -5</p> | <p><b>Course objectives</b></p> |
| Teaching and learning strategies                                                                                                                                                                                                                                                                                                                                                                                            | .9                              |
| <p>Self-learning strategy-brainstorming-Problem solving-<br/>Cooperative Learning - Active Learning</p>                                                                                                                                                                                                                                                                                                                     | <p><b>Strategy</b></p>          |





## 10-Course structure

| Evaluation method | Teaching method             | Unit name/topic                                                              | Required learning outcomes                                                                                       | hours | AFor a week |
|-------------------|-----------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------|-------------|
| Feedback          | discussion, lecture, debate | The historical development of the concept of both measurement and evaluation | -Enable learners to identify historical stages across different cultures for both measurement and evaluation.    | 2     | 1           |
| Feedback          | discussion, lecture, debate | Understanding the concept of tests                                           | Forming students to define the concept of the test and link it with other concepts                               | 2     | 2           |
| Feedback          | discussion, lecture, debate | Understand the concept of (values and appreciation)                          | Enabling students to define the terms measurement and evaluation and find the difference between them            | 2     | 3           |
| Feedback          | discussion, lecture, debate | Defining the concept of each of (measurement and evaluation)                 | Enabling students to define the concepts of measurement and evaluation and to find the relationship between them | 2     | 4           |
| Feedback          | discussion, lecture, debate | The relationship between (measurement, testing, evaluation)                  | Students are able to distinguish between concepts and create a diagram that links them together.                 | 2     | 5           |
| Feedback          | discussion, lecture, debate | Characteristics of educational measurement                                   | Enable students to employ educational measurement skills                                                         | 2     | 6           |
| Feedback          | discussion,                 | Types of calendar                                                            | Enable students to identify and apply                                                                            | 2     | 7           |

|                         |                                   |                                                                     |                                                                                                                       |   |    |
|-------------------------|-----------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---|----|
|                         | lecture,<br>debate                |                                                                     | types of educational<br>assessment.                                                                                   |   |    |
| Feedback                | discussion,<br>lecture,<br>debate | Types of<br>measurement                                             | Students are able to<br>identify types of<br>measurement and<br>their<br>applications.HField                          | 2 | 8  |
| Feedback                | discussion,<br>lecture,<br>debate | Evaluation and<br>measurement in<br>educational fields              | Students are able to<br>identify types of<br>assessment.                                                              | 2 | 9  |
| Feedback                | discussion,<br>lecture,<br>debate | The role of<br>evaluation in<br>improving<br>education              | Enable students to<br>use educational<br>applications for<br>assessment.                                              | 2 | 10 |
| a test                  | discussion,<br>lecture,<br>debate | Teaching<br>objectives                                              | Enable students to<br>identify the primary<br>objectives of<br>teaching.                                              | 2 | 11 |
| Feedback                | discussion,<br>lecture,<br>debate | Measurement and<br>evaluation and<br>their relationship<br>to goals | Enabling students to<br>link measurement<br>and evaluation to<br>educational goals                                    | 2 | 12 |
| Feedback                | discussion,<br>lecture,<br>debate | Steps for<br>constructing<br>educational tests                      | Enable students to<br>identify the main<br>steps for<br>constructing tests.                                           | 2 | 13 |
| Feedback                | discussion,<br>lecture,<br>debate | Specifications<br>table                                             | Enabling students to<br>take steps to<br>prepare a<br>specification table in<br>the educational field                 | 2 | 14 |
| Semi-<br>annual<br>news | discussion,<br>lecture,<br>debate | Statistical concept<br>of tests                                     | Enabling students to<br>understand the main<br>concepts of<br>statistical analysis of<br>different types of<br>tests. | 2 | 15 |
| Feedback                | discussion,<br>n,                 | Types of tests                                                      | Enabling students to<br>identify types of<br>tests                                                                    | 2 | 16 |





|              |                                   |                                                                    |                                                                               |   |    |
|--------------|-----------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------|---|----|
|              | lecture,<br>debate                |                                                                    |                                                                               |   |    |
| Feedback     | discussion,<br>lecture,<br>debate | Essay tests                                                        | Enabling students to identify the types of essay tests and their features     | 2 | 17 |
| Feedback     | discussion,<br>lecture,<br>debate | Objective tests                                                    | Enabling students to identify the types of objective tests and their features | 2 | 18 |
| Feedback     | discussion,<br>lecture,<br>debate | Classification of tests by method                                  | Enabling students to identify different testing methods                       | 2 | 19 |
| Feedback     | discussion,<br>lecture,<br>debate | Correction keys                                                    | Enabling students to define correction instructions and keys for tests        | 2 | 20 |
| Monthly exam | -                                 | Knowing the students' level and the information they have acquired | Monthly exam                                                                  | 2 | 21 |
| Feedback     | discussion,<br>lecture,<br>debate | Good test specifications                                           | Enabling students to define new test specifications                           | 2 | 22 |
| Feedback     | discussion,<br>lecture,<br>debate | Honesty and its types                                              | Enabling students to define the concept of validity for tests                 | 2 | 23 |
| Feedback     | discussion,<br>lecture,<br>debate | Persistence and its methods                                        | Enabling students to define the concept of reliability of educational tests   | 2 | 24 |
| a test       | discussion,<br>lecture,<br>debate | Objectivity in educational testing                                 | Enabling students to define the concept of objectivity in educational testing | 2 | 25 |
| Feedback     | discussion,                       | Evaluation without tests                                           | Enabling students to apply assessment                                         | 2 | 26 |



|          |                                   |                                            |                                                                                                             |          |    |
|----------|-----------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------|----------|----|
|          | lecture,<br>debate                |                                            | methods other than<br>exams                                                                                 |          |    |
| Feedback | discussion,<br>lecture,<br>debate | Cumulative<br>records                      | Enabling students to<br>identify types of<br>honesty                                                        | <b>2</b> | 27 |
| Feedback | discussion,<br>lecture,<br>debate | Educational and<br>learning<br>observation | Enabling students to<br>define the concept<br>of educational<br>observation                                 | <b>2</b> | 28 |
| Feedback | discussion,<br>lecture,<br>debate | Educational<br>checklists                  | Enabling students to<br>make the<br>connection between<br>concurrent validity<br>and predictive<br>validity | <b>2</b> | 29 |
| Feedback | discussion,<br>lecture,<br>debate | The interview                              | Enabling students to<br>identify the role of<br>the interview in the<br>educational aspect                  | <b>2</b> | 30 |

#### 11- Learning and teaching resources

|                                                                                                                                                                                                                                                                |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Measurement and Evaluation for the University<br>Student, Abdul Hussein Arzouqi, and Yassin Ayal<br>Measurement and Evaluation in the Educational<br>Process, Ahmed Suleiman Awda<br>-Badr for Educational Measurement and<br>Evaluation, Al-Atrahi and others | 1- Required textbooks           |
| Measurement and Evaluation for the University<br>Student, Abdul Hussein Arzouqi, and Yassin Ayal<br>Measurement and Evaluation in the Educational<br>Process, Ahmed Suleiman Awda<br>-Badr for Educational Measurement and<br>Evaluation, Al-Atrahi and others | 2- Main references<br>(sources) |



|                                                                                                                                                                                 |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <p>Educational Measurement and Evaluation in the Educational Process, Salah El-Din Mahmoud Allam</p> <p>Measurement and Evaluation in the Teaching Process, Rahim Al-Azzawi</p> | <p>A- Recommended books and references (scientific journals, reports, etc.)</p> |
| <p>General Curriculum and Teaching Methods Library (Telegram)</p> <p>-Al-Noor Library (electronic library) is free on the search engine.Google</p>                              | <p>B - Electronic references, Internet sites</p>                                |





|                                                                                 |                                                                                                                                                                                |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>A- Recommended books and references (scientific journals, reports, etc.)</p> | <p>Practical Measurement and Evaluation in the Educational Process, 2nd Ed. by Robert A. Kottler<br/>Measurement and Evaluation in the Teaching Process, Robert A. Kottler</p> |
| <p>B- Electronic references (Internet sites)</p>                                | <p>General Information and Teaching Methods Library (Teaching.com)<br/>At Home Library (Electronic Library) is free on the search engine Google</p>                            |



## Course Description Form

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Laser                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>2. Course Code:</b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| PHY408                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>3. Semester / Year:</b>                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2025-2026                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>4. Description Preparation Date:</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 21 / 9 / 2025                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>5. Available Attendance Forms:</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Face-to-face learning                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 60 Hours (Theory) / 4 Credit Units                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>7. Course administrator's name (mention all, if more than one name)</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Name: Asst. Prof. Ban Abd Al-Maseeh Bader<br>Email: banbader1971@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>8. Course Objectives</b>                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Course Objectives</b>                                                            | <ul style="list-style-type: none"> <li>Introduce students to the topic of lasers and their importance in physics.</li> <li>Enable students to apply the knowledge they acquire to explain natural phenomena related to light and lasers.</li> <li>Equip students with the thinking skills necessary for teaching the subject of lasers when practicing their profession as teachers in primary, intermediate, and secondary schools, within the science or physics curriculum.</li> <li>Develop students' scientific research skills for use in research and applied fields within government agencies involved in research activities.</li> </ul> |
| <b>9. Teaching and Learning Strategies</b>                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Strategy</b>                                                                     | <p><b>A-1.</b> The student should become familiar with the types, facts, concepts, principles, theories, and laws related to the laser course.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>A-2.</b> The student should understand the phenomena and practical applications related to the subject of lasers.</p> <p><b>B. Subject-Specific Skills</b></p> <p><b>B-1.</b> Equip the student with the necessary skills to learn the scientific thinking method that helps acquire scientific knowledge and apply it in solving scientific problems.</p> <p><b>B-2.</b> Provide the student with skills that help understand and interpret natural phenomena and practical applications related to lasers.</p> <p><b>C. Thinking Skills</b></p> <p><b>C-1.</b> Teach students the steps of scientific thinking to solve scientific problems.</p> <p><b>C-2.</b> Enable the student to connect scientific content with their environment and daily observations.</p> <p><b>C-3.</b> Pose thought-provoking questions and examples, and discuss students' answers to stimulate scientific thinking.</p> <p><b>D. General and Transferable Skills (Other Employability and Personal Development Skills)</b></p> <p><b>D-1.</b> Introduce the student to sound waves.</p> <p><b>D-2.</b> Link theoretical concepts with practical application</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 10. Laser Course Structure

| Week | Hours | Intended Learning Outcomes                                                                              | Unit / Topic               | Teaching Method               | Assessment Method |
|------|-------|---------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------|-------------------|
| 1    | 2     | Meaning of Maser and Laser                                                                              | Meaning of Maser and Laser | Lecture, discussion, dialogue | Direct questions  |
| 2    | 2     | Stimulated emission                                                                                     | Meaning of Maser and Laser | Lecture, discussion, dialogue | —                 |
| 3    | 2     | Einstein calculations for probability factors and the ratio between spontaneous and stimulated emission | Meaning of Maser and Laser | Lecture, discussion, dialogue | —                 |
| 4    | 2     | Laser system as amplifier (Laser amplifier)                                                             | Laser System               | Lecture, discussion, dialogue | —                 |
| 5    | 2     | Properties of laser beam                                                                                | Laser System               | Lecture, discussion, dialogue | —                 |
| 6    | 2     | Spectral line exposure operations                                                                       | Spectral line exposure     | Lecture, discussion, dialogue | Monthly exam      |



|    |   |                                                                     |                                         |                               |                  |
|----|---|---------------------------------------------------------------------|-----------------------------------------|-------------------------------|------------------|
| 7  | 2 | Types of exposure                                                   | Spectral line exposure                  | Lecture, discussion, dialogue | —                |
| 8  | 2 | Properties of laser beam                                            | Spectral line exposure                  | Lecture, discussion, dialogue | —                |
| 9  | 2 | Components of the laser device                                      | Spectral line exposure                  | Lecture, discussion, dialogue | Monthly exam     |
| 10 | 2 | Pumping power                                                       | Pumping Methods                         | Lecture, discussion, dialogue | —                |
| 11 | 2 | Pumping efficiency                                                  | Pumping Methods                         | Lecture, discussion, dialogue | Monthly exam     |
| 12 | 2 | Importance of resonator                                             | Optical Resonator                       | Lecture, discussion, dialogue | —                |
| 13 | 2 | Oscillator                                                          | Optical Resonator                       | Lecture, discussion, dialogue | Direct questions |
| 14 | 2 | Types of resonators                                                 | Optical Resonator                       | Lecture, discussion, dialogue | Direct questions |
| 15 | 2 | Resonator stability                                                 | Optical Resonator                       | Lecture, discussion, dialogue | —                |
| 16 | 2 | Resonator oscillation formulas                                      | Optical Resonator                       | Lecture, discussion, dialogue | Direct questions |
| 17 | 2 | Resonator quality factor                                            | Optical Resonator                       | Lecture, discussion, dialogue | Direct questions |
| 18 | 2 | Adjusting the quality factor                                        | Optical Resonator                       | Lecture, discussion, dialogue | Direct questions |
| 19 | 2 | Techniques for adjusting the quality factor                         | Techniques for adjusting quality factor | Lecture, discussion, dialogue | Direct questions |
| 20 | 2 | Energy and power of a pulse resulting from quality factor switching | Techniques for adjusting quality factor | Lecture, discussion, dialogue | Direct questions |
| 21 | 2 | Mode locking                                                        | Techniques for adjusting quality factor | —                             | Direct questions |
| 22 | 2 | Solid-state lasers                                                  | Types of lasers                         | Monthly exam                  |                  |

|    |   |                                      |                    |                      |                  |
|----|---|--------------------------------------|--------------------|----------------------|------------------|
| 23 | 2 | Liquid lasers                        | Types of lasers    | Discussion, dialogue | Monthly exam     |
| 24 | 2 | Gas lasers                           | Types of lasers    | Discussion, dialogue | —                |
| 25 | 2 | Semiconductor lasers                 | Types of lasers    | Discussion, dialogue | —                |
| 26 | 2 | Dye lasers                           | Types of lasers    | Discussion, dialogue | Monthly exam     |
| 27 | 2 | Chemical laser                       | Types of lasers    | Discussion, dialogue | Direct questions |
| 28 | 2 | Laser applications in medicine       | Laser Applications | Discussion, dialogue | Direct questions |
| 29 | 2 | Laser applications in communications | Laser Applications | Discussion, dialogue | Direct questions |
| 30 | 2 | Laser applications in military       | Laser Applications | Discussion, dialogue | —                |

### 11. Course Assessment:

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily quizzes, oral and written exams, monthly exams, reports, etc.

### 12. Learning and Teaching Resources

|                                                                      |                                                                                                                                                   |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Prescribed Textbooks (if available)                                  | <i>Fundamentals of Electricity and Magnetism</i> by Yahya Abdul-Hamid Al-Hajj Ali                                                                 |
| Main References (sources)                                            | "Laser Physics and Some Practical Applications" by Dr. Siham Afif Qandala                                                                         |
| Recommended Textbooks and References (scientific journals, reports): | Following electronic references and the Internet, including reputable scientific websites and library portals of some international universities. |
| Electronic references, Internet sites:                               | Internet websites related to lasers.                                                                                                              |









## Course Description Form

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| electromagnetic theory                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>2. Course Code:</b>                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PHY407                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>3. Semester / Year</b>                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 4 <sup>th</sup> class /2025 – 2026                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>4. Description Preparation Date:</b>                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 22/9/2025                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>5. Available Attendance Forms:</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Face-to-Face theoretical lectures                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 90 HOURS/ 5 UNITS                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Name: prof. Muna Y. Slewa<br>Email: muna-sh.y@uohamdaniya.edu.iq           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>8. Course Objectives</b>                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Course Objectives</b>                                                   | <p>1 introduce the student to the coordinate system and its implementation to electro magnetics.</p> <p>2 elaborate the concept of electromagnetic waves and their practical applications.</p> <p>3 study the propagation, reflection, and refraction of plane waves in different media.</p> <p>4 Study time varying Maxwell equations and their applications in electromagnetic problems</p> <p>5 Demonstrate the reflection and refraction of waves at boundaries</p> |
| <b>9. Teaching and Learning Strategies</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Strategy</b>                                                            | <p>Weekly lectures include providing students with basics and topics related to pre-skills learning outcomes to solve practical problems through presentation or lecture.</p> <p>- Solving a set of practical and applied examples by the instructor and the student.</p>                                                                                                                                                                                               |

|                      |       | <ul style="list-style-type: none"><li>- Student participation in the discussion and solving some practical problems.</li><li>- Asking the student to visit the library and the Internet to gain additional knowledge of academic materials.</li><li>- Presenting a seminar to the student in front of his fellow students to enhance his self-confidence.</li></ul> |                                             |                                                                                           |                                           |
|----------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------|
| 10. Course Structure |       |                                                                                                                                                                                                                                                                                                                                                                     |                                             |                                                                                           |                                           |
| Week                 | Hours | Required Learning Outcomes                                                                                                                                                                                                                                                                                                                                          | Unit or subject name                        | Learning method                                                                           | Evaluation method                         |
| 1 - 5                | 15    | Vector analysis- Representation, operations-Dot product and cross product, Basics of coordinate system- rectangular, cylindrical and spherical co-ordinate systems. Electrostatics one: Coulomb's Law, Electric Field Intensity - Fields due to Different Charge Distributions, Electric Flux Density; Illustrative Problems. Exam                                  | CH 1 : Vector Analysis & Co-ordinate system | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 6 -11                | 18    | Gauss Law and Applications, Electric Potential, Relations Between E and V, Maxwell's Equations for Electrostatic Fields, Dielectric Constant, Isotropic and Homogeneous Dielectrics, Continuity Equation, Relaxation Time, Poisson's and Laplace's Equations, Boundary conditions-conductor-Dielectric and Dielectric-Dielectric; Illustrative Problems.Exam        | CH 2: Electrostatics two                    | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 12 -15               | 12    | Biot - Savart's Law , Ampere's Circuital Law and Applications, Magnetic Flux Density, Maxwell's Equations for Magnetostatic Fields, Magnetic Scalar and Vector Potentials,                                                                                                                                                                                          | CH 3: Magnetostatics                        | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 16,17                | 6     | Ampere's Force law , Faraday's Law, Displacement Current Density, Maxwell's Equations for time varying fields, Illustrative Problems. Exam                                                                                                                                                                                                                          | CH 3: Magnetostatics                        | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |



|        |    |                                                                                                                                                                                                                                                                                    |                                    |                                                                                           |                                           |
|--------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------|
| 18 -24 | 21 | Wave Equations for Conducting and Perfect Dielectric Media, Uniform Plane Waves - Definition, Relation Between E & H, Wave Propagation in Lossless and Conducting Media, Wave Propagation in Good Conductors and Good Dielectrics, Illustrative Problems. Exam                     | CH 4: EM Wave Characteristics-I    | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |
| 25-30  | 18 | Reflection and Refraction of Plane Waves – Normal incidence for both perfect Conductors and perfect Dielectrics, Brewster Angle, Critical Angle and Total Internal Reflection, Surface Impedance, Poynting Vector and Poynting Theorem – Applications, Illustrative Problems. Exam | CH 5: EM Wave Characteristics – II | Lecture through the blackboard and display screens with interactive student participation | Daily exam with end of each semester exam |

### 11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as: daily preparation, daily, oral, monthly, and written exams, student attendance

### 12. Learning and Teaching Resources

|                                                                    |                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | Foundation Of Electromagnetic Theory .By: John R. Reitz, Frederick J. Milford & Robert W. Christy                                                                                                                                                                                |
| Main references (sources)                                          | 1.Elements of Electromagnetics - Matthew N. O. Sadiku, 4th., Oxford Univ. Press.<br>2.Electromagnetic Waves and Radiating Systems - E.C. Jordan and K. G. Balmain, 2nd Ed., 2000, PHI.<br>3.Engineering Electromagnetic - William H. Hay Jr. and John A. Buck, 7thEd., 2006, TMH |
| Recommended books and references (scientific journals, reports...) | 1- المجالات الكهرومغناطيسية الجزء الأول والثاني<br>2- أساسيات النظرية الكهرومغناطيسية الجزء الأول والثاني<br>سلسلة ملخصات شوم: الكهرومغناطيسيات 2000 تأليف جوزيف ادمست                                                                                                           |
| Electronic References, Websites                                    | متابعه المراجع الإلكترونية والأدبيات التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية                                                                                                                                                     |





## Course Description Form

|                                                                            |
|----------------------------------------------------------------------------|
| <b>1. Course Name:</b>                                                     |
| Quantum Mechanics                                                          |
| <b>2. Course Code:</b>                                                     |
| PHY406                                                                     |
| <b>3. Semester / Year:</b>                                                 |
| 2025-2026                                                                  |
| <b>4. Description Preparation Date:</b>                                    |
| 1/9/2025                                                                   |
| <b>5. Available Attendance Forms:</b>                                      |
| In-person learning                                                         |
| <b>6. Number of Credit Hours (Total) / Number of Units (Total)</b>         |
| 90 HOURS/ 5 UNITS                                                          |
| <b>7. Course administrator's name (mention all, if more than one name)</b> |
| Name: Lect. Dr. Abdulrahman Ismael Ahmed                                   |
| Email: a.i.ahmed@uohamdaniya.edu.iq                                        |
| <b>8. Course Objectives</b>                                                |

|                          |                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Course Objectives</b> | Introducing students to the principles and fundamentals of quantum mechanics, including the time-dependent and time-independent Schrödinger equation, in addition to introducing students to derivation methods, how to deal with different influences, deriving quantum momentum equations, and various applications of the Schrödinger equation. |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>9. Teaching and Learning Strategies</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Strategy</b>                            | <ol style="list-style-type: none"> <li>1. Providing students with basic physics information and concepts: The strategy aims to provide students with basic information and concepts in the field of quantum mechanics and to prepare trained and qualified personnel to work in educational and research institutions.</li> <li>2. Understanding Scientific Applications: Enhancing students' understanding of the practical and scientific applications of quantum mechanics principles in technological and research fields.</li> <li>3. Identifying Types of Scientific Knowledge: Enabling students to distinguish between different types of</li> </ol> |





scientific knowledge, such as facts, concepts, principles, and theories in the field of quantum mechanics, as well as familiarizing themselves with the mathematical tools and techniques used to analyze quantum phenomena.

4. Enabling students to acquire knowledge and understanding: Enhancing students' ability to understand the scientific laws of quantum mechanics and their practical applications, and developing logical and scientific analysis skills to explain physical phenomena associated with the quantum world.

### 1. Course Structure

| Week | Hours | Required Learning Outcomes                                     | Unit or subject name                                                        | Learning method     | Evaluation method |
|------|-------|----------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------|-------------------|
| 1    | 3     | Theoretical Knowledge and Applied Analysis                     | Chapter One: Foundations and Principles of Quantum Mechanics                | Lecture, discussion | Direct questions  |
| 2    | 3     | Theoretical knowledge and applied analysis. Classical concepts | fail to describe some physical phenomena                                    | Lecture, discussion | Direct questions  |
| 3    | 3     | Theoretical knowledge and applied analysis                     | Foundations of quantum mechanics, the state of a physical system.           | Lecture, discussion | Direct questions  |
| 4    | 3     | Theoretical knowledge and applied analysis                     | State functions, observables and operators, superposition of states.        | Lecture, discussion | Direct questions  |
| 5    | 3     | Theoretical knowledge and applied analysis                     | Orthogonality of functions, normalization of functions.                     | Lecture, discussion | Direct questions  |
| 6    | 3     | Theoretical knowledge and applied analysis                     | Probability and probability density                                         | Lecture, discussion | Direct questions  |
| 7    | 3     | Theoretical knowledge and applied analysis                     | Probability current density, expected value.                                | Lecture, discussion | Direct questions  |
| 8    | 3     | Theoretical knowledge and applied analysis                     | Chapter Two: Operators<br>What do operators represent in quantum mechanics? | Lecture, discussion | Direct questions  |



|    |   |                                            |                                                                        |                     |                  |
|----|---|--------------------------------------------|------------------------------------------------------------------------|---------------------|------------------|
| 9  | 3 | Theoretical knowledge and applied analysis | Linear effects.                                                        | Lecture, discussion | Direct questions |
| 10 | 3 | Theoretical knowledge and applied analysis | Properties of operators, Hermitian operators, exchange of operators.   | Lecture, discussion | Exam             |
| 11 | 3 | Theoretical knowledge and applied analysis | Time variation of expected value, Ehrenfest theory                     | Lecture, discussion | Direct questions |
| 12 | 3 | Theoretical knowledge and applied analysis | Laws of conservation energy and angular momentum                       | Lecture, discussion | Direct questions |
| 13 | 3 | Theoretical knowledge and applied analysis | Heisenberg's uncertainty principle<br>Properties of operators          | Lecture, discussion | Direct questions |
| 14 | 3 | Theoretical knowledge and applied analysis | Hermitian influences, exchange of influence                            | Lecture, discussion | Direct questions |
| 15 | 3 | Theoretical knowledge and applied analysis | Chapter Three: Schrödinger's Equation                                  | Lecture, discussion | Direct questions |
| 16 | 3 | Theoretical knowledge and applied analysis | Time-independent Schrödinger equation                                  | Lecture, discussion | Direct questions |
| 17 | 3 | Theoretical knowledge and applied analysis | Time-dependent Schrödinger equation                                    | Lecture, discussion | Direct questions |
| 18 | 3 | Theoretical knowledge and applied analysis | Solve the time dependent Schrödinger equation.                         | Lecture, discussion | Direct questions |
| 19 | 3 | Theoretical knowledge and applied analysis | Chapter Four: Motion in One Dimension<br>Free Body, Potential Gradient | Lecture, discussion | Direct questions |
| 20 | 3 | Theoretical knowledge and applied analysis | voltage wall, low voltage of infinite depth                            | Lecture, discussion | Direct questions |
| 21 | 3 | Theoretical knowledge and applied analysis | Low voltage, limited depth, harmonic oscillator.                       | Lecture, discussion | Direct questions |

|    |   |                                            |                                                                                                        |                         |                  |
|----|---|--------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------|------------------|
| 22 | 3 | Theoretical knowledge and applied analysis | Chapter Five: Motion in Three Dimensions                                                               | Lecture, discussion     | Direct questions |
| 23 | 3 | Theoretical knowledge and applied analysis | Chapter 6: Angular Momentum<br>Angular Momentum Influences in Spherical Coordinates                    | Exam                    | Exam             |
| 24 | 3 | Theoretical knowledge and applied analysis | Exchange of angular momentum effects.                                                                  | Lecture, discussion     | Direct questions |
| 25 | 3 | Theoretical knowledge and applied analysis | Chapter Seven: Spherically Symmetric Potentials<br>Introduction, Operators with Spherical Coordinates. | Lecture, discussion     | Direct questions |
| 26 | 3 | Theoretical knowledge and applied analysis | Hydrogen atom, solution of the Schrödinger equation for the hydrogen atom.                             | Lecture, discussion     | Direct questions |
| 27 | 3 | Theoretical knowledge and applied analysis | Chapter Eight: Approximation Methods                                                                   | Lecture, discussion     | Direct questions |
| 28 | 3 | Theoretical knowledge and applied analysis | Unsolved cases.                                                                                        | discussion              | Direct questions |
| 29 | 3 | Theoretical knowledge and applied analysis | Applications of perturbation theory.                                                                   | Discussion and dialogue | Direct questions |
| 30 | 3 |                                            |                                                                                                        | Exam                    |                  |

## 2. Course Evaluation

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, assignments, etc.

## 3. Learning and Teaching Resources



|                                                                            |                                                                                                                                                      |
|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1- Quantum mechanics:                                                      | Written by Dr. Jassim Al-Hussaini and Dr. Abdul Salam Abdul Amir.                                                                                    |
| 2- Fundamentals of quantum mechanics                                       | Written by Salem Hassan Al-Shamaa and Dr. Amjad Abdul Razzaq Karajiya.                                                                               |
| Recommended mainstream books and references (scientific journals, reports) | Follow up on electronic references and the Internet, including reliable scientific websites and library websites in some international universities. |
| Electronic References, Websites                                            | Websites about quantum mechanics                                                                                                                     |



## Course Description Form (Measurement and Evaluation)

|                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Course name: .1                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |
| <b>Measurement and Evaluation</b>                                                                                                                                                                                                                                                                                                                                                                                                       |                          |
| Course code: .2                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |
| EPS401                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |
| Chapter/Year: .3                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |
| 2025-2026                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |
| Date of preparation of this description: .4                                                                                                                                                                                                                                                                                                                                                                                             |                          |
| 17/9/2025                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |
| Available attendance forms: .5                                                                                                                                                                                                                                                                                                                                                                                                          |                          |
| In-person education                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| Number of study hours (total) / Number of units (total) .6                                                                                                                                                                                                                                                                                                                                                                              |                          |
| 60 hours / 4 units                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |
| Course Supervisor Name (if more than one name is mentioned) .7                                                                                                                                                                                                                                                                                                                                                                          |                          |
| Name: M.M. Younis Dharar Jassim Email: <a href="mailto:youniesdrar12345@uoqadisiya.edu.iq">youniesdrar12345@uoqadisiya.edu.iq</a>                                                                                                                                                                                                                                                                                                       |                          |
| Course objectives .8                                                                                                                                                                                                                                                                                                                                                                                                                    |                          |
| <p>The importance of evaluation and measurement and its role in -1<br/>improving the educational process.</p> <p>Basic concepts in educational measurement and evaluation -2</p> <p>Types of achievement tests, advantages and disadvantages of -3<br/>each, and methods of preparing them</p> <p>Testing methods and the advantages and disadvantages of -4<br/>each</p> <p>Educational objectives, their types and formulation -5</p> | <p>Course objectives</p> |
| Teaching and learning strategies .9                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| <p>Self-learning strategy-brainstorming-Problem solving-<br/>Cooperative Learning - Active Learning</p>                                                                                                                                                                                                                                                                                                                                 | <p>Strategy</p>          |





## 10-Course structure

| Evaluation method | Teaching method             | Unit name/topic                                                              | Required learning outcomes                                                                                       | hours | AFor a week |
|-------------------|-----------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------|-------------|
| Feedback          | discussion, lecture, debate | The historical development of the concept of both measurement and evaluation | -Enable learners to identify historical stages across different cultures for both measurement and evaluation.    | 2     | 1           |
| Feedback          | discussion, lecture, debate | Understanding the concept of tests                                           | Forming students to define the concept of the test and link it with other concepts                               | 2     | 2           |
| Feedback          | discussion, lecture, debate | Understand the concept of (values and appreciation)                          | Enabling students to define the terms measurement and evaluation and find the difference between them            | 2     | 3           |
| Feedback          | discussion, lecture, debate | Defining the concept of each of (measurement and evaluation)                 | Enabling students to define the concepts of measurement and evaluation and to find the relationship between them | 2     | 4           |
| Feedback          | discussion, lecture, debate | The relationship between (measurement, testing, evaluation)                  | Students are able to distinguish between concepts and create a diagram that links them together.                 | 2     | 5           |
| Feedback          | discussion, lecture, debate | Characteristics of educational measurement                                   | Enable students to employ educational measurement skills                                                         | 2     | 6           |
| Feedback          | discussion,                 | Types of calendar                                                            | Enable students to identify and apply                                                                            | 2     | 7           |



|                         |                                   |                                                                     |                                                                                                                       |   |    |
|-------------------------|-----------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---|----|
|                         | lecture,<br>debate                |                                                                     | types of educational<br>assessment.                                                                                   |   |    |
| Feedback                | discussion,<br>lecture,<br>debate | Types of<br>measurement                                             | Students are able to<br>identify types of<br>measurement and<br>their<br>applications.HField                          | 2 | 8  |
| Feedback                | discussion,<br>lecture,<br>debate | Evaluation and<br>measurement in<br>educational fields              | Students are able to<br>identify types of<br>assessment.                                                              | 2 | 9  |
| Feedback                | discussion,<br>lecture,<br>debate | The role of<br>evaluation in<br>improving<br>education              | Enable students to<br>use educational<br>applications for<br>assessment.                                              | 2 | 10 |
| a test                  | discussion,<br>lecture,<br>debate | Teaching<br>objectives                                              | Enable students to<br>identify the primary<br>objectives of<br>teaching.                                              | 2 | 11 |
| Feedback                | discussion,<br>lecture,<br>debate | Measurement and<br>evaluation and<br>their relationship<br>to goals | Enabling students to<br>link measurement<br>and evaluation to<br>educational goals                                    | 2 | 12 |
| Feedback                | discussion,<br>lecture,<br>debate | Steps for<br>constructing<br>educational tests                      | Enable students to<br>identify the main<br>steps for<br>constructing tests.                                           | 2 | 13 |
| Feedback                | discussion,<br>lecture,<br>debate | Specifications<br>table                                             | Enabling students to<br>take steps to<br>prepare a<br>specification table in<br>the educational field                 | 2 | 14 |
| Semi-<br>annual<br>news | discussion,<br>lecture,<br>debate | Statistical concept<br>of tests                                     | Enabling students to<br>understand the main<br>concepts of<br>statistical analysis of<br>different types of<br>tests. | 2 | 15 |
| Feedback                | discussion,<br>n,                 | Types of tests                                                      | Enabling students to<br>identify types of<br>tests                                                                    | 2 | 16 |





|              |                                   |                                                                    |                                                                               |   |    |
|--------------|-----------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------|---|----|
|              | lecture,<br>debate                |                                                                    |                                                                               |   |    |
| Feedback     | discussion,<br>lecture,<br>debate | Essay tests                                                        | Enabling students to identify the types of essay tests and their features     | 2 | 17 |
| Feedback     | discussion,<br>lecture,<br>debate | Objective tests                                                    | Enabling students to identify the types of objective tests and their features | 2 | 18 |
| Feedback     | discussion,<br>lecture,<br>debate | Classification of tests by method                                  | Enabling students to identify different testing methods                       | 2 | 19 |
| Feedback     | discussion,<br>lecture,<br>debate | Correction keys                                                    | Enabling students to define correction instructions and keys for tests        | 2 | 20 |
| Monthly exam | -                                 | Knowing the students' level and the information they have acquired | Monthly exam                                                                  | 2 | 21 |
| Feedback     | discussion,<br>lecture,<br>debate | Good test specifications                                           | Enabling students to define new test specifications                           | 2 | 22 |
| Feedback     | discussion,<br>lecture,<br>debate | Honesty and its types                                              | Enabling students to define the concept of validity for tests                 | 2 | 23 |
| Feedback     | discussion,<br>lecture,<br>debate | Persistence and its methods                                        | Enabling students to define the concept of reliability of educational tests   | 2 | 24 |
| a test       | discussion,<br>lecture,<br>debate | Objectivity in educational testing                                 | Enabling students to define the concept of objectivity in educational testing | 2 | 25 |
| Feedback     | discussion,                       | Evaluation without tests                                           | Enabling students to apply assessment                                         | 2 | 26 |





|          |                                   |                                            |                                                                                                             |   |    |
|----------|-----------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------|---|----|
|          | lecture,<br>debate                |                                            | methods other than<br>exams                                                                                 |   |    |
| Feedback | discussion,<br>lecture,<br>debate | Cumulative<br>records                      | Enabling students to<br>identify types of<br>honesty                                                        | 2 | 27 |
| Feedback | discussion,<br>lecture,<br>debate | Educational and<br>learning<br>observation | Enabling students to<br>define the concept<br>of educational<br>observation                                 | 2 | 28 |
| Feedback | discussion,<br>lecture,<br>debate | Educational<br>checklists                  | Enabling students to<br>make the<br>connection between<br>concurrent validity<br>and predictive<br>validity | 2 | 29 |
| Feedback | discussion,<br>lecture,<br>debate | The interview                              | Enabling students to<br>identify the role of<br>the interview in the<br>educational aspect                  | 2 | 30 |

#### 11- Learning and teaching resources

|                                                                                                                                                                                                                                                                |                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Measurement and Evaluation for the University<br>Student, Abdul Hussein Arzouqi, and Yassin Ayal<br>Measurement and Evaluation in the Educational<br>Process, Ahmed Suleiman Awda<br>-Badr for Educational Measurement and<br>Evaluation, Al-Atrahi and others | 1- Required textbooks           |
| Measurement and Evaluation for the University<br>Student, Abdul Hussein Arzouqi, and Yassin Ayal<br>Measurement and Evaluation in the Educational<br>Process, Ahmed Suleiman Awda<br>-Badr for Educational Measurement and<br>Evaluation, Al-Atrahi and others | 2- Main references<br>(sources) |



|                                                                                                                                                                                 |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <p>Educational Measurement and Evaluation in the Educational Process, Salah El-Din Mahmoud Allam</p> <p>Measurement and Evaluation in the Teaching Process, Rahim Al-Azzawi</p> | <p>A- Recommended books and references (scientific journals, reports, etc.)</p> |
| <p>General Curriculum and Teaching Methods Library (Telegram)</p> <p>-Al-Noor Library (electronic library) is free on the search engine.Google</p>                              | <p>B - Electronic references, Internet sites</p>                                |





## نموذج وصف المقرر

|    |                                                                                                                                                                                                                                                                                                                                |                       |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1. | اسم المقرر:                                                                                                                                                                                                                                                                                                                    |                       |
|    | الحرارة وخواص المادة                                                                                                                                                                                                                                                                                                           |                       |
| 2. | رمز المقرر:                                                                                                                                                                                                                                                                                                                    |                       |
|    | PHY110                                                                                                                                                                                                                                                                                                                         |                       |
| 3. | الفصل/ السنة:                                                                                                                                                                                                                                                                                                                  |                       |
|    | 2025-2026                                                                                                                                                                                                                                                                                                                      |                       |
| 4. | تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                         |                       |
|    | 2025/9/5                                                                                                                                                                                                                                                                                                                       |                       |
| 5. | اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                          |                       |
|    | التعليم الحضوري                                                                                                                                                                                                                                                                                                                |                       |
| 6. | عدد الساعات الدراسية (الكلية) // عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                          |                       |
|    | 2 / 60                                                                                                                                                                                                                                                                                                                         |                       |
| 7. | اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                |                       |
|    | الاسم: م.م موفق موسى منصور<br>الايمل: muwaffaq1968@Gmail.com                                                                                                                                                                                                                                                                   |                       |
| 8. | اهداف المقرر                                                                                                                                                                                                                                                                                                                   |                       |
|    | تعليم الطلبة لدراسة المفاهيم الاساسية في موضوع الحرارة و كمية الحرارة وتأثيرها على الخواص الحرارية للمادة. كيفية قياسها وطرائق انتقالها، كما يدرس النظرية الحركية للغازات والقوانين التي تخضع لها والخصائص الميكانيكية للمادة من اجهاد ومطاوعة بأنواعها وقانون يونك والخصائص الكهربائية والمغناطيسية للمواد الصلبة بصورة خاصة. | اهداف المادة الدراسية |
| 9. | استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                    |                       |
|    | 1- توجية انتباه الطلبة لمعرفة اليات انتقال الحرارة.<br>2- تطوير قدرة الطالب على تفسير تحولات الطور التي تحدث في المادة.<br>3- تحفيز الطلبة للمشاركة في المحاضرة.<br>4- تطوير مهارات الطالب في حل المسائل الرياضية المتعلقة بالمادة.                                                                                            | الاستراتيجية          |



## 10. بنية المقرر

| الاسبوع    | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                  | اسم الوحدة أو الموضوع | طريقة التعلم               | طريقة التقييم    |
|------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------|------------------|
| الأسبوع    | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                  | اسم الوحدة/أو الموضوع | طريقة التعليم              | طريقة التقييم    |
| الأول      | 2       | درجة الحرارة، أسس قياس درجة الحرارة، مقاييس درجة الحرارة والتحويل بينها، أنواع المحارير.                                                                                | درجة الحرارة          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني     | 2       | تدريج المحارير، المحرار الغازي ذو الحجم الثابت، المحرار المزدوج الحراري، المقاومة الكهربائية، تأثير درجة الحرارة على حالات المادة، التمدد الحراري- تمدد الأجسام الصلبة. | درجة الحرارة          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث     | 2       | تمدد السوائل، تمدد الغازات، أثبات انتقال الحرارة، التوصيل                                                                                                               | درجة الحرارة          | المحاضرة والمناقشة والحوار | امتحان يومي      |
| الرابع     | 2       | الإشعاع، درجات الحرارة الواطنة، مصادر الطاقة الحرارية، علاقة الطاقة بالمادة، أمثلة محلولة.                                                                              | درجة الحرارة          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الخامس     | 2       | حل الاسئلة                                                                                                                                                              | درجة الحرارة          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السادس     | 2       | الحرارة وتأثيراتها ، كمية الحرارة، الحرارة النوعية ، طرق قياس الحرارة النوعية، مفهوم الطور ، تحولات الطور                                                               | الحرارة               | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السابع     | 2       | المخطط الطوري ، النقطة الثلاثية للماء، تحولات حالة المادة، التبخر ، الانصهار ، انقيان ، التسامي.                                                                        | الحرارة               | المحاضرة والمناقشة والحوار | امتحان يومي      |
| الثامن     | 2       | القانون الأول للثرمودينامك ، حل امثلة.                                                                                                                                  | الحرارة               | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| التاسع     | 2       | حل اسئلة.                                                                                                                                                               | الحرارة               | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| العاشر     | 2       | الغاز المثالي والغاز الحقيقي، النظرية الحركية للغازات، عدد الفوكندروا، قانون الغاز، قانون بويل، قانون شارل، ثابت الغاز                                                  | الغازات               | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الحادي عشر | 2       | قانون الغاز المثالي، معادلة فاندرفالز، الطاقة الداخلية للغاز.                                                                                                           | الغازات               | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |





|                         |   |                                                                                                                                              |                                  |                            |                  |
|-------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------|------------------|
| الثاني عشر              | 2 | الحرارة النوعية للغازات $C_v, C_p$ العلاقة بين $C_v, C_p$ حساب $C_v, C_p$ للغاز المثالي ، الشغل المنجز بواسطة الغاز المثالي.                 | الغازات                          | المحاضرة والمناقشة والحوار | امتحان يومي      |
| الثالث عشر              | 2 | ضغط الغاز المثالي، أمثلة محلولة.                                                                                                             | الغازات                          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع عشر              | 2 | حل الأسئلة.                                                                                                                                  | الغازات                          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الخامس عشر              | 2 | حل الأسئلة.                                                                                                                                  | الغازات                          | المحاضرة والمناقشة والحوار | امتحان شهري      |
| الأسبوع السادس عشر      | 2 | الكثافة والوزن النوعي، الخاصية الشعرية، الشد السطحي، سطح السائل، زاوية الاتصال.                                                              | السوائل                          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الأسبوع السابع عشر      | 2 | اللزوجة، الضغط في السوائل، قاعدة باسكال، قاعدة أرخميدس                                                                                       | السوائل                          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الأسبوع الثامن عشر      | 2 | الجريان المنتظم الانسيابي، معادلة بواسيل، معادلة برنولي، معادلة تورشلي                                                                       | السوائل                          | المحاضرة والمناقشة والحوار | امتحان يومي      |
| الأسبوع التاسع عشر      | 2 | مقاييس الجريان، مقياس فتوري، أنبوية بيتوت، أمثلة محلولة                                                                                      | السوائل                          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الأسبوع العشرون         | 2 | حل الأسئلة                                                                                                                                   | السوائل                          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الأسبوع الحادي والعشرون | 2 | الإجهاد وأنواعه، المطاوعة وأنواعها، منحنى الإجهاد، المطاوعة، معامل المرونة،                                                                  | الخواص الميكانيكية للمواد الصلبة | المحاضرة والمناقشة والحوار | امتحان يومي      |
| الأسبوع الثاني والعشرون | 2 | معامل يونك، تجربة لقياس معامل يونك، نسبة بواسون، تجربة لقياس نسبة بواسون                                                                     | الخواص الميكانيكية للمواد الصلبة | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الأسبوع الثالث والعشرون | 2 | علاقة الخواص الميكانيكية بدرجة الحرارة، تأثير درجات الحرارة على جميع الخواص، المعاملة الحرارية للمادة بدرجات حرارة مرتفعة ومنخفضة، حل أمثلة. | الخواص الميكانيكية للمواد الصلبة | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |



| الاسبوع الرابع والعشرون | حل الأسئلة | الخواص الميكانيكية للمواد الصلبة                                                                                                                              | المحاضرة والمناقشة والحوار | امتحان يومي      |
|-------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------|
| الاسبوع الخامس والعشرون | 2          | الخواص المغناطيسية للمواد الصلبة                                                                                                                              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السادس والعشرون | 2          | تصنيف المواد المغناطيسية، المواد الدايامغناطيسية ، المواد البارامغناطيسية، المواد الفيرومغناطيسية                                                             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السابع والعشرون | 2          | المواد ضديدة الفيرومغناطيسية، المواد الفيرومغناطيسية، العناصر المغناطيسية،                                                                                    | المحاضرة والمناقشة والحوار | امتحان يومي      |
| الاسبوع الثامن والعشرون | 2          | التوصيلية الكهربائية ، العوازل والموصلات ، أشباه الموصلات ، العوازل، المقاومة الكهربائية ، التوصيلية الكهربائية وعلاقتها بدرجة الحرارة ، ظاهرة التوصيل الفائق | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 2          | المجال المغناطيسي الحرج ، الانهيار الكهربائي الحراري ، العوازل المؤثرة على الانهيار الكهربائي ، مسائل                                                         | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الثلاثون        | 2          | البلازما، توليد البلازما، دراسة البلازما، البلازما والمجال الكهربائي، احتواء البلازما، المجال المغناطيسي الأرضي والبلازما الكونية، أسئلة                      | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |

### 11. تقييم المقرر

توزيع الدرجة من 15 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية و25 درجة نصف السنة ومتبقى امتحان نهائي ودرجته من 60 وفق النظام السنوي

### 12. مصادر التعلم والتدريس

| مصادر التعلم والتدريس                                                                                                                                                                                                       | الكتب المقررة المطلوبة (المنهجية ان وجدت)                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 1- الحرارة وخواص المادة. ( د. كاظم احمد )<br>2- الترموداينمك ( د. سامي مظلوم ، د. امجد كرجية ، د. عبد اللطيف ابراهيم )<br>3- Mechanic, Heat and Sound, By: Sears.<br>4- Physics ( part 1 ), By: R. Resuich and D. Halliday. | المراجع الاساسية (المصادر)                                       |
| المواقع الالكترونية المتعلقة بالحرارة وخواص المادة.                                                                                                                                                                         | الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير) |
| مواقع ومواضع متنوعة عن الحرارة وخواص المواد على الانترنت.                                                                                                                                                                   | المراجع الالكترونية، مواقع الانترنت                              |





## نموذج وصف المقرر

|                                                         |                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. اسم المقرر                                           |                                                                                                                                                                                                                                                                                       |
| اللغة الإنكليزية                                        |                                                                                                                                                                                                                                                                                       |
| 2. رمز المقرر                                           |                                                                                                                                                                                                                                                                                       |
| UOH102                                                  |                                                                                                                                                                                                                                                                                       |
| 3. الفصل / السنة                                        |                                                                                                                                                                                                                                                                                       |
| سنوي / المرحلة الاولى                                   |                                                                                                                                                                                                                                                                                       |
| 4. تاريخ اعداد هذا الوصف                                |                                                                                                                                                                                                                                                                                       |
| 2025\9\21                                               |                                                                                                                                                                                                                                                                                       |
| 5. اشكال الحضور المتاحة                                 |                                                                                                                                                                                                                                                                                       |
| حضور يومي                                               |                                                                                                                                                                                                                                                                                       |
| 6. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية) |                                                                                                                                                                                                                                                                                       |
| ساعة واحدة / بنظام وحدتين                               |                                                                                                                                                                                                                                                                                       |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)      |                                                                                                                                                                                                                                                                                       |
| الاسم: اري دجيل عبدال                                   |                                                                                                                                                                                                                                                                                       |
| الايمل: Aridasi@uohamdaniya.edu.iq                      |                                                                                                                                                                                                                                                                                       |
| 8. اهداف المقرر                                         |                                                                                                                                                                                                                                                                                       |
| اهداف المادة الدراسية                                   | ١- إثراء وتطوير مهارات اللغة الإنكليزية لدى الطلاب.<br>٢- تطوير قدرات الطلاب ومهاراتهم اللغوية.<br>٣- تنمية مهارات التحدث باللغة الإنكليزية.                                                                                                                                          |
| 9. استراتيجيات التعليم والتعلم                          |                                                                                                                                                                                                                                                                                       |
| الاستراتيجية                                            | ١- تنمية قدرة الطلاب على التعرف على أهم المفردات والمصطلحات اللغوية في اللغة الإنكليزية.<br>٢- إثراء مفردات الطلاب.<br>٣- فهم أهمية تعلم اللغة الإنكليزية وأثرها على تعلم المواد الدراسية الأخرى.<br>٤- تنمية مهارات الطلاب في اللغة الإنكليزية.<br>٥- تنمية مهارات القراءة والكتابة. |



# 10. بنية المقرر

| الاسبوع | الساعات | مخرجات التعلم المطلوبة                   | اسم الوحدة والموضوع                                  | طريقة التعلم                                                             | طريقة التقييم                 |
|---------|---------|------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------|
| الاول   | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الأولى أفعال الفاعل/كلمات الاستفهام.          | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| الثاني  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثانية الأسماء الملكية/الجمع                 | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب  | الأسئلة المباشرة وردود الفعل  |
| الثالث  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثالثة أسئلة بكلمات استفهام/أسئلة بنعم أو لا | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| الرابع  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثالثة أفعال الفاعل/الإيجاب والسلب           | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| الخامس  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الرابعة لدي بالمفرد/ لدي بالجمع               | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| السادس  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الرابعة الأسماء الجمع                         | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| السابع  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الرابعة ضمير الملكية                          | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| الثامن  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الخامسة صفة الملكية                           | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| التاسع  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الخامسة المضارع البسيط                        | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| العاشر  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الخامسة أنا/ صفة أو اسم                       | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |
| الحادي  | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة السادسة المضارع البسيط                        | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل  |





|                              |                                                                          |                                |                                          |   |            |
|------------------------------|--------------------------------------------------------------------------|--------------------------------|------------------------------------------|---|------------|
| الأسئلة المباشرة وردود الفعل | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة السادسة ظروف التكرار    | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الثاني عشر |
| الأسئلة المباشرة وردود الفعل | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة السابعة كلمات الاستفهام | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الثالث عشر |
| الأسئلة المباشرة وردود الفعل | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة السابعة الضمائر         | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الرابع عشر |
| الأسئلة المباشرة وردود الفعل | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة السابعة هذا وذاك        | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الخامس عشر |
| الأسئلة المباشرة وردود الفعل | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة الثامنة هناك وتلك       | المعرفة النظرية والتطبيق التربوي العملي. | 1 | السادس عشر |
| الأسئلة المباشرة وردود الفعل | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة الثامنة بعض وأي         | المعرفة النظرية والتطبيق التربوي العملي. | 1 | السابع عشر |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير... الخ

#### 12. مصادر التعلم والتدريس

|                                                                                                                  |                                                                     |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| New Headway Plus for Beginners.                                                                                  | الكتب المقررة المطلوبة (المنهجية ان وجدت)                           |
|                                                                                                                  | المراجع الرئيسية (المصادر)                                          |
|                                                                                                                  | الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير...) |
| متابعة المراجع الإلكترونية والإنترنت بما فيها المواقع العلمية الموثوقة ومواقع المكتبات في بعض الجامعات العالمية. | المراجع الإلكترونية ، مواقع الانترنت                                |



## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                          |                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. اسم المقرر                                                                                                                                                                                                                                                                                            |                                                                                                   |
| الرياضيات I                                                                                                                                                                                                                                                                                              |                                                                                                   |
| 2. رمز المقرر                                                                                                                                                                                                                                                                                            |                                                                                                   |
| PHY109                                                                                                                                                                                                                                                                                                   |                                                                                                   |
| 3. الفصل / السنة                                                                                                                                                                                                                                                                                         |                                                                                                   |
| المرحلة الاولى / 2025-2026                                                                                                                                                                                                                                                                               |                                                                                                   |
| 4. تاريخ اعداد هذا الوصف                                                                                                                                                                                                                                                                                 |                                                                                                   |
| 2025/9/1                                                                                                                                                                                                                                                                                                 |                                                                                                   |
| 5. اشكال الحضور المتاحة                                                                                                                                                                                                                                                                                  |                                                                                                   |
| التعليم الحضوري                                                                                                                                                                                                                                                                                          |                                                                                                   |
| 6. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                                                                                                                  |                                                                                                   |
| 90 ساعة / 6 وحدات                                                                                                                                                                                                                                                                                        |                                                                                                   |
| 7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)                                                                                                                                                                                                                                                       |                                                                                                   |
| الاسم: م.م. شهاب احمد حسن                                                                                                                                                                                                                                                                                | الايميل: <a href="mailto:shahab19862023@uohamdaniya.edu.iq">shahab19862023@uohamdaniya.edu.iq</a> |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                          |                                                                                                   |
| <p>● أهداف المادة الدراسية</p> <p>• تأهيل وتدريب الطالب وتعليمه قواعد وطرق التفاضلات الاعتيادية وتطبيقاتها وطرق التكاملات الاعتيادية والاستفادة منها في مادة الرياضيات في المرحلة الثانية وتأهيل الطالب لحل المعادلات وربطها مع بقية المواضيع .تعطى محاضرات التفاضل والتكامل 3 ساعات نظرية اسبوعياً.</p> |              |



## 9. استراتيجيات التعليم والتعلم

### الاستراتيجية

- \* إدارة المحاضرة على نحو يشير الى اهمية الوقت
- \* تكليف الطلاب ببعض الواجبات الجماعية
- \* تكليف الطلاب بجمع المصادر والمراجع وكتابة تقرير حول عنوان المحاضرة

## 10. بنية المقرر

| الأسبوع | الماعات | مخرجات التعلم المطلوبة            | اسم الوحدة / أو الموضوع                                                                         | طريقة التعليم                            | طريقة التقييم    |
|---------|---------|-----------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------|------------------|
| 1       | 3       | المعرفة النظرية والتحليل التطبيقي | تعريف مجموعة الاعداد وتعريف الفترات مع الامثلة المتباينات والقيمة المطلقة وخواصها               | حسب طرائق التعليم والتعلم المذكورة اعلاه | الاسئلة المباشرة |
| 2       | 3       | المعرفة النظرية والتحليل التطبيقي | تركيب الدوال وخواصها                                                                            | حسب طرائق التعليم والتعلم المذكورة اعلاه | الاسئلة المباشرة |
| 3       | 3       | المعرفة النظرية والتحليل التطبيقي | انواع الدوال ( الثابتة ، الذاتية ، المطلقة، التربيعية متعددة الحدود)                            | حسب طرائق التعليم والتعلم المذكورة اعلاه | الاسئلة المباشرة |
| 4       | 3       | المعرفة النظرية والتحليل التطبيقي | انواع الدوال ( الجذر التربيعي ، الزوجية والفردية ، دالة الاشارة ، النمبية بدالة اصظم عدد صحيح ) | حسب طرائق التعليم والتعلم المذكورة اعلاه | الاسئلة المباشرة |
| 5       | 3       | المعرفة النظرية والتحليل التطبيقي | الدوال المثلثية مع البراهين                                                                     | حسب طرائق التعليم والتعلم المذكورة اعلاه | الاسئلة المباشرة |
| 6       | 3       | المعرفة النظرية والتحليل التطبيقي | الغاية                                                                                          | حسب طرائق التعليم والتعلم المذكورة اعلاه | الاسئلة المباشرة |
| 7       | 3       | المعرفة النظرية والتحليل التطبيقي | الغاية باستخدام التعريف وايجاد الغاية من جهة واحدة + امتحان نصف الكورس                          | حسب طرائق التعليم والتعلم المذكورة اعلاه | الاسئلة المباشرة |
| 8       |         | المعرفة النظرية والتحليل          | الاستمرارية (تعريف                                                                              | حسب طرائق التعليم والتعلم                | الاسئلة المباشرة |



|    |   | التطبيقي                             | الاستمرارية، شروط<br>الاستمرارية ( مع امثلة<br>متنوعة                                               | المنكورة اعلاه                              |                  |
|----|---|--------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------|------------------|
| 9  | 3 | المعرفة النظرية والتحليل<br>التطبيقي | توضيح العلاقة بين الغاية<br>والاستمرارية من خلال امثلة<br>متنوعة وحل التمارين<br>والواجبات          | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 10 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | حل اسئلة متنوعة حول<br>الغاية والاستمرارية مرتكزة<br>حول اسئلة الطلبة                               | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 11 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | تعريف المشتقة رياضيا<br>وفيزيائيا مع الرسم البياني<br>وايجاد المشتقة باستخدام<br>التعريف مع الامثلة | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 12 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | اشتقاق الدوال المثلثية مع<br>امثلة متنوعة                                                           | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 13 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | قوانين الدوال الزائدية<br>والمشتقة من رتب عليا<br>والاشتقاق الضمني                                  | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 14 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | قاعدة لوبيتال مع امثلة<br>متنوعة                                                                    | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 15 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | قاعدة السلسلة مع امثلة<br>متنوعة                                                                    | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 16 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | قواعد الميل والعمامس مع<br>الامثلة                                                                  | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 17 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | قواعد التكامل مع الامثلة<br>وتكامل الدوال المثلثية                                                  | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 18 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | ايجاد المساحة تحت وفوق<br>المنحني والمساحة بين<br>منحنيين باستخدام التكامل<br>المحدد                | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 19 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | الدوال العكسية وايجاد<br>المجال والمجال المقابل<br>للدوال العكسية                                   | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |
| 20 | 3 | المعرفة النظرية والتحليل<br>التطبيقي | مشتقة الدوال المثلثية<br>العكسية وتكامل الدوال<br>المثلثية العكسية مع امثلة                         | حسب طرائق التعليم والتعلم<br>المنكورة اعلاه | الاسئلة المباشرة |





|                  |                                             |                                                                                                  |                                      |   |    |
|------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------|---|----|
|                  |                                             | متنوعة                                                                                           |                                      |   |    |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | مشتقة الدوال الزائدية وتكامل<br>الدوال الزائدية وقواعدها مع<br>الامثلة                           | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 21 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | طرق التكامل (طريقة u dv<br>طريقة تعويض الدوال<br>المثلثية)<br>مع الامثلة                         | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 22 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | طريقة التعويض مع امثلة<br>متنوعة + امتحان يومي                                                   | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 23 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | طريقة تجزئة الكسور ( )<br>الحالة الأولى + الحالة الثانية<br>(مع الامثلة )                        | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 24 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | ايجاد التكامل بطريقة<br>$\sqrt{ax+b}$ + طريقة<br>القسمه مع الامثلة + امتحان<br>نصف الكورس        | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 25 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | الدوال المشاسمية (تعريف<br>دالة اللوغاريتم الطبيعي<br>ومخططاتها وخواصها مع<br>امثلة متنوعة )     | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 26 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | مشتقة دالة اللوغاريتم<br>الطبيعي وتكاملها مع امثلة<br>متنوعة                                     | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 27 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | تعريف الدالة الاسية<br>ومخططاتها وخواصها مع<br>الامثلة ومشتقة الدالة الاسية<br>وتكاملها مع امثلة | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 28 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | خواص ومشتقة الدالة الاسية<br>للأساس a والدالة<br>اللوغاريتمية للأساس a                           | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 29 |
| الامثلة المباشرة | حسب طرائق التعلم والتعليم<br>المذكورة اعلاه | حل التمارين والواجبات<br>والامثلة المرتكزة حول نقطة<br>ضعف الطالب                                | المعرفة النظرية والتحليل<br>التطبيقي | 3 | 30 |



| 11.تقييم المقرر                                                                      |                                                                       |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 15 درجة / امتحانات شهرية<br>25 درجة / نصف السنة<br>60 درجة / الامتحان النهائي        |                                                                       |
| 12.مصادر التعلم والتدريس                                                             |                                                                       |
| حساب التفاضل والتكامل                                                                | الكتب المقررة المطلوبة (المنهجية ان وجدت)                             |
| نظرية حساب التفاضل والتكامل, Calculus                                                | المراجع الرئيسية (المصادر)                                            |
| Calculus I,II,III –Jerrold Marsdon & Alan Weinstein (2 <sup>nd</sup> edition , 2003) | الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير (...) |
| اليوتيوب                                                                             | المراجع الالكترونية ، مواقع الانترنت                                  |

| 13.خطة تطوير المقرر الدراسي                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• إضافة موضوعات معاصرة: <ul style="list-style-type: none"> <li>▪ تطبيقات في الاقتصاد (حساب الفائدة المركبة، معدلات التغير).</li> <li>▪ تطبيقات في الفيزياء (الحركة، الشغل ، الطاقة)</li> <li>▪ مقدمة في المعادلات التفاضلية كامتداد طبيعي للتكامل.</li> </ul> </li> <li>• التعلم النشط: إدخال أنشطة صفية تفاعلية ومسائل جماعية.</li> <li>• الاعتماد على برامج مثل: Desmos ، GeoGebra لتوضيح الرسوم والاشتقاقات.</li> <li>• الاعتماد على المصادر الحديثة في تدريس المقرر مثل: <ul style="list-style-type: none"> <li>• Thomas calculus-George B,2024.</li> <li>• Calculus Volume 1-Edwin Jed Herman, 2020.</li> </ul> </li> </ul> |





## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |
| علم النفس التربوي والنمو                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |
| EPS105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |
| 2025-2026 المرحلة الاولى                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |
| 2025/09/21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |
| التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
| 6. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
| 60 ساعة / (4) وحدات                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |
| الاسم: م.م محمد قازي جاسم الايميل: mohammedalhadidi@uohamdanitya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
| <p>اهداف المقرر الى تعريف الطلبة بـ:</p> <ol style="list-style-type: none"> <li>1- علم النفس التربوي ومفهومه واهدافه .</li> <li>2- مفهوم التعلم وتطبيقاته ونظرياته وتطبيقاتها التربوية في العملية التعليمية.</li> <li>3- نظرية معالجة المعلومات، وتطبيقاتها التربوية .</li> <li>4- انتقال التعلم وأنواعه والتغذية الراجعة وأهميتها للمتعلمين .</li> <li>5- الدافعية تعريفها، وظائفها أنواعها، نظرياتها، الدافعية والتدريس .</li> <li>6- حل المشكلات، تعريف المشكلة، تعلم مهارات حل المشكلات .</li> <li>7- الخلفية التاريخية للتعلم بواسطة البرامج الحاسوبية ومبادئه وفاعليته في عملية التعلم.</li> <li>8- مفهوم علم النفس النمو .</li> <li>9- بيان مراحل التطور اللغوي .</li> <li>10- مراحل التطور المعرفي للإنسان .</li> <li>11- مراحل نشأة الانسان .</li> <li>12- التمييز بين فروع علم نفس النمو .</li> </ol> | <p>اهداف المادة الدراسية</p> |

## 9. استراتيجيات التعليم والتعلم

|              |                                                                                                                                                                                                                                                                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الاستراتيجية | <ul style="list-style-type: none"> <li>- المحاضرة.</li> <li>- المناقشة.</li> <li>- العصف الذهني.</li> <li>- المجموعات التعاونية.</li> <li>- التعلم الذاتي.</li> <li>- الواجبات المنزلية والقائما في الصف من قبل الطلبة</li> <li>- استخدام الوسائل التعليمية:</li> <li>- الكتب العلمية، السبورة، الأقلام الملونة، جهاز عرض الشرائح (البوربوينت).</li> </ul> |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. بنية المقرر

| الاسبوع | الساعات | مخرجات التعلم المطلوب                                                                                         | اسم الوحدة او الموضوع | طريقة التعلم                               | طريقة التقييم                            |
|---------|---------|---------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------|------------------------------------------|
| الاول   | 2       | تعريف الطلبة ب:<br>علم النفس التربوي: تعريفه،<br>تطوره التاريخي<br>هذاف ومجالات وموضوعات<br>علم النفس التربوي | علم النفس التربوي     | المحاضرة والمناقشة                         | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثاني  | 2       | الأهداف التربوية، مستوياتها،<br>صياغتها<br>تعلم والتعليم: المفهوم ، طبيعة<br>عملية التعلم                     | علم النفس التربوي     | المحاضرة ، والمناقشة                       | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثالث  | 2       | خصائصه<br>لفرق بين التعلم والتعليم                                                                            | علم النفس التربوي     | المحاضرة والمناقشة ، أساليب العصف الذهني   | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الرابع  | 2       | العوامل المؤثرة في التعلم<br>نظريات التعلم والتعليم<br>وتطبيقاتها التربوية                                    | علم النفس التربوي     | المحاضرة والمناقشة                         | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الخامس  | 2       | نظريات: لورن دايك ، بافلوف،<br>سكندر ، الجشطت                                                                 | علم النفس التربوي     | المحاضرة والمناقشة<br>وأساليب العصف الذهني | التغذية الراجعة عن طريق الأسئلة المباشرة |
| السادس  | 2       | نظرية التعلم الاجتماعي<br>نظرية التعلم المعرفية                                                               | علم النفس التربوي     | المحاضرة والمناقشة<br>، أساليب الشك العلمي | التغذية الراجعة عن طريق الأسئلة المباشرة |
| السابع  | 2       | امتحان الشهر الأول                                                                                            | امتحان الشهر الأول    | المحاضرة والمناقشة<br>وأساليب العصف الذهني | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثامن  | 2       | التفكير والذاكرة<br>الذاكرة ، وأنواعها                                                                        | علم النفس التربوي     | المحاضرة والمناقشة<br>والعصف الذهني        | التغذية الراجعة عن طريق الأسئلة المباشرة |





|                          |   |                                                                                                                                                                                                 |                     |                                              |                                                |
|--------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------|------------------------------------------------|
| التاسع                   | 2 | النظريات المفصلة للديان<br>استراتيجيات مساعدة على<br>الحفظ والتذكر، تطبيقات في<br>الاكتساب والحفظ                                                                                               | علم النفس التربوي   | المحاضرة والمناقشة<br>أساليب العصف<br>الذهني | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| العاشر                   | 2 | نظرية معالجة المعلومات،<br>تطبيقات النظرية<br>انتقال أثر التعلم: تعريفه،<br>أنواعه                                                                                                              | علم النفس التربوي   | الجلسات النقاشية                             | النشاطات الالصفية                              |
| الحادي<br>عشر            | 2 | نظرياته وتطبيقاته التربوية،<br>التقنيات المساعدة على انتقال<br>أثر التعلم<br>تعلم المفاهيم: تعريف المفهوم،<br>طبيعة مكوناته، العوامل<br>المؤثرة<br>ي اكتساب المفاهيم، نظريات<br>اكتساب المفاهيم | علم النفس التربوي   | المحاضرة والمناقشة<br>والحوار                | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الثاني<br>عشر            | 2 | التفكير ، مفهومه ، التفكير<br>الإبداعي، تعلم المهارات<br>والعادات الدافعية والتفاعل<br>الصفى، التغذية الراجعة:<br>تعريفها، أنواعها، تطبيقاتها<br>التربوية، تطبيق عملي                           | علم النفس التربوي   | المحاضرة والمناقشة<br>أساليب العصف<br>الذهني | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الثالث<br>عشر            | 2 | حل المشكلات<br>برامج لتعليم حل المشكلات،<br>تطبيق عملي                                                                                                                                          | علم النفس التربوي   | المحاضرة والمناقشة<br>التعلم التعاوني        | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الرابع<br>عشر            | 2 | امتحان الشهر الثاني                                                                                                                                                                             | امتحان الشهر الثاني | المحاضرة والمناقشة                           | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الخامس<br>عشر            | 2 | التعلم الإلكتروني المحوسب                                                                                                                                                                       | علم النفس التربوي   | المحاضرة والمناقشة                           | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الاسبوع<br>السادس<br>عشر | 2 | علم نفس النمو: تعريفه ،<br>أهميته ، معنى النمو<br>القوانين (المبادئ) العامة للنمو                                                                                                               | علم نفس النمو       | المحاضرة والمناقشة<br>والحوار                | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الاسبوع<br>السابع<br>عشر | 2 | العوامل المؤثرة في النمو<br>العوامل الوراثية - العوامل<br>البيئية                                                                                                                               | علم نفس النمو       | المحاضرة والمناقشة<br>والحوار                | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الاسبوع<br>الثامن<br>عشر | 2 | مناهج البحث في علم نفس<br>النمو<br>البحوث: طولية ، مستعرضة ،<br>تجريبية ، ارتباطية.                                                                                                             | علم نفس النمو       | المحاضرة والمناقشة<br>والحوار                | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الاسبوع<br>التاسع<br>عشر | 2 | مرحلة الطفولة<br>تعريفها، أهميتها ، ومراحلها                                                                                                                                                    | علم نفس النمو       | المحاضرة والمناقشة<br>والحوار                | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الاسبوع<br>العشرون       | 2 | التطور العقلي واللغوي<br>التطور الاجتماعي والانفعالي<br>- التطور الخلقي                                                                                                                         | علم نفس النمو       | المحاضرة والمناقشة<br>والحوار                | التغذية الراجعة عن<br>طريق الأسئلة<br>المباشرة |
| الاسبوع                  | 2 | نمو المؤسسات الاجتماعية في                                                                                                                                                                      | علم نفس النمو       | أساليب العصف                                 | التغذية الراجعة عن                             |



|                         |   |                                                                                                                 |                           |                                          |
|-------------------------|---|-----------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------|
| الحادي والعشرون         |   | التثنية الاجتماعية للطفل الأسرة ، المدرسة ، الأقران ، وسائل الإعلام                                             | الذهني ، والنقل والمحاضرة | طريق الأسئلة المباشرة                    |
| الاسبوع الثاني والعشرون | 2 | امتحان الشهر الاول                                                                                              | امتحان شهري               | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع الثالث والعشرون | 2 | علم نفس النمو                                                                                                   | المناقشة والحوار          | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع الرابع والعشرون | 2 | المراقب والمجتمع                                                                                                | المناقشة والحوار          | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع الخامس والعشرون | 2 | المراقب والمهنة: أهمية العمل في حياة المراقب . أهمية اختيار المهنة والعوامل المؤثرة فيها . توافق المراقب للعمل. | المناقشة والحوار          | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع السادس والعشرون | 2 | اتجاهات المراقبين وميولهم أهمية الميول والاتجاهات                                                               | المناقشة والحوار          | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع السابع والعشرون | 2 | مصادر اكتساب الميول والاتجاهات العوامل المؤثرة في اتجاهات المراقبين وميولهم                                     | المناقشة والحوار          | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع الثامن والعشرون | 2 | بعض مشكلات المراقبين - التأخر الدراسي                                                                           | المناقشة والحوار          | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 2 | امتحان الشهر الثاني                                                                                             | امتحان الشهر الثاني       | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الاسبوع الثلاثون        | 2 | السلوك العدواني - جنوح المراهقين                                                                                | المناقشة والحوار          | عن طريق تقييم جلسة عملية                 |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشغوية والشهرية والتحريرية والتقارير.... الخ

مصادر التعلم والتدريس:

(١) علم النفس التربوي نظريات واساليب وتطبيقات (٢٠٢٤) نبيل عد الهادي، دار البازوري





العلمية.

(٢) علم النفس التربوي النظرية والتطبيق عدنان يوسف العنوم وشفيق فلاح علاونة وعبد  
الناصر نياح الجراح ومعاوية محمود غال (٢٠١٣)، دار المسيرة للنشر والتوزيع  
والطباعة ، عمان الاردن.

(٣) علم النفس التربوي، عبد المجيد نشواتي (٢٠٠٣) دار الفرقان للنشر والتوزيع ، الاردن

(٤) علم النفس التربوي، صالح ابو جادو . غزال دار المسيرة للنشر والتوزيع والطباعة ، عمان  
الاردن.

(٥) أسس سيكولوجية الطفولة والمراهقة ، الكويت مكتبة الفلاح . مسن ، بول ، وآخرون

(٦) علم النفس التطوري ، الأردن . عمان ، دار مجدلاوي. عريفج ، سامي (١٩٩٣)

(٧) مقدمة في علم النفس الإرتقائي ، القاهرة- مكتبة الدار العربية للكتاب. علوان ، فادية.



## نموذج وصف المقرر

|                                                          |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|----------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------|---------------|
| 1. اسم المقرر:                                           |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | الميكانيك                                                                                                                                                                                                                                                                                                           |                         |               |               |
| 2. رمز المقرر:                                           |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | PHY107                                                                                                                                                                                                                                                                                                              |                         |               |               |
| 3. الفصل/ السنة:                                         |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | 2026-2025                                                                                                                                                                                                                                                                                                           |                         |               |               |
| 4. تاريخ اعداد هذا الوصف:                                |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | 2025/9/20                                                                                                                                                                                                                                                                                                           |                         |               |               |
| 5. اشكال الحضور المتاحة:                                 |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | التعليم الحضوري                                                                                                                                                                                                                                                                                                     |                         |               |               |
| 6. عدد الساعات الدراسية (الكلية) // عدد الوحدات (الكلية) |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | 7 / 90                                                                                                                                                                                                                                                                                                              |                         |               |               |
| 7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)       |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | الاسم: أ.م.د. علي حسين احمد سليمان                                                                                                                                                                                                                                                                                  |                         |               |               |
|                                                          |         | الايمل: dr.aha.suliman@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                           |                         |               |               |
| 8. اهداف المقرر                                          |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | يهدف المقرر إلى تزويد الطلاب بالمعلومات والمهارات المتعلقة بالميكانيكا، وعلاقة الأجسام وحركتها، وخصائص المادة، والتي سيتمتع منها الطالب في المرحلة الجامعية المتقدمة، والتي يمكن أن توفله للدراسات العليا في علوم الفيزياء، مما يبني خلفية قوية لمن سيواصل دراسة الميكانيكا وخصائص المادة.                          |                         |               |               |
| 9. استراتيجيات التعليم والتعلم                           |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
|                                                          |         | 1- تمكين الطلاب من اكتساب المعرفة والفهم لمواضيع ميكانيكا الجسم والحركة وخصائصه.<br>2- تمكين الطلاب من اكتساب المعرفة والفهم لتطبيقات ميكانيكا الجسم وإجراء التجارب على العمليات المختلفة.<br>3- تمكين الطلاب من اكتساب المعرفة والفهم لاستخدام القوانين الفيزيائية الأساسية في الميكانيكا واستخدامها لحل المشكلات. |                         |               |               |
| 10. بنية المقرر                                          |         |                                                                                                                                                                                                                                                                                                                     |                         |               |               |
| الاسبوع                                                  | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                              | اسم الوحدة او الموضوع   | طريقة التعلم  | طريقة التقييم |
| الأسبوع                                                  | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                              | اسم الوحدة / أو الموضوع | طريقة التعليم | طريقة التقييم |





|            |   |                                                            |                                  |                            |                  |
|------------|---|------------------------------------------------------------|----------------------------------|----------------------------|------------------|
| الاول      | 3 | Unit System and Dimensions                                 | Vectors Introduction             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني     | 3 | Vectors and scalar                                         | Vectors Introduction             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث     | 3 | Vector algebra                                             | Vectors Introduction             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع     | 3 | Vector products (dot and cross)                            | Vectors Introduction             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الخامس     | 3 | Triple products                                            | Vectors Introduction             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السادس     | 3 | Application of vectors                                     | Vectors Introduction             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السابع     | 3 | Solution of Problems                                       | Vectors Introduction             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثامن     | 3 | Position                                                   | Motion in a straight line Motion | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| التاسع     | 3 | Average velocity                                           | Motion in a straight line Motion | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| العاشر     | 3 | Instantaneous velocity, Average Instantaneous acceleration | Motion in a straight line Motion | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الحادي عشر | 3 | Motion with constant acceleration                          | Motion in a straight line Motion | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني عشر | 3 | Freely falling bodies                                      | Motion in a straight line Motion | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث عشر | 3 | Solution of Problems                                       | Motion in a straight line Motion | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |



|                  |                               |                                                          |                                                                                              |   |                         |
|------------------|-------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------|---|-------------------------|
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Motion in a plane<br>Motion in two<br>dimensions (plane) | Motion in three<br>dimensions                                                                | 3 | الرابع عشر              |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Motion in a plane<br>Motion in two<br>dimensions (plane) | Component of<br>acceleration, and<br>motion of projectile                                    | 3 | الخامس عشر              |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Motion in a plane<br>Motion in two<br>dimensions (plane) | Trajectory of a<br>projectile                                                                | 3 | الاسبوع السادس عشر      |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Motion in a plane<br>Motion in two<br>dimensions (plane) | Application on a<br>projectile motion                                                        | 3 | الاسبوع السابع عشر      |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Motion in a plane<br>Motion in two<br>dimensions (plane) | Solution of Problems                                                                         | 3 | الاسبوع الثامن عشر      |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Forces Newton 's<br>laws                                 | Mass, Weight, Friction<br>(Statics and dynamics),<br>and Friction laws                       | 3 | الاسبوع التاسع عشر      |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Forces Newton 's<br>laws                                 | Application of force                                                                         | 3 | الاسبوع العشرون         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Forces Newton 's<br>laws                                 | Center mass, and<br>Equilibrium.                                                             | 3 | الاسبوع الحادي والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Work and Energy<br>Work done by<br>constant force        | work done by varying<br>force, work and kinetic<br>energy, Gravitational<br>potential energy | 3 | الاسبوع الثاني والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Work and Energy<br>Work done by<br>constant force        | Elastic potential<br>energy, Power, Power<br>and velocity.                                   | 3 | الاسبوع الثالث والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Rotation of Rigid<br>Bodies Introduction                 | Rotation with constant<br>linear velocity, Kinetic<br>energy of rotation,<br>moment Inertia  | 3 | الاسبوع الرابع والعشرون |





|                  |                               |                                                       |                                                                                                                            |   |                               |
|------------------|-------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---|-------------------------------|
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Rotation of Rigid<br>Bodies Introduction              | Work and power<br>rotational motion, and<br>the Torque.                                                                    | 3 | الاسبوع<br>الخامس<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Momentum and<br>Impulse                               | Conservation law of<br>linear momentum,<br>Angular momentum<br>and impulse                                                 | 3 | الاسبوع<br>اساس<br>والعشرون   |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Momentum and<br>Impulse                               | Relation between<br>momentum and<br>impulse in linear and<br>rotational motion,<br>Energy of Rotational<br>motion of body. | 3 | الاسبوع<br>السابع<br>والعشرون |
| الأسئلة المباشرة | المناقشة والحوار              | Collisions                                            | Elastic Collisions in<br>one-dimension,<br>Inelastic collision, and<br>Collisions in two<br>dimensions                     | 3 | الاسبوع<br>الثامن<br>والعشرون |
| الأسئلة المباشرة | المناقشة والحوار              | Conservation of<br>Energy<br>Conservation laws        | Conservation and non-<br>Conservation force,<br>Conservation energy,<br>and Potential energy<br>curve                      | 3 | الاسبوع<br>التاسع<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | Universal<br>Gravitation<br>Meaning of<br>gravitation | Newton 's law of<br>gravitation, Definition<br>of gravitation,<br>Gravitation field,<br>Gravitation potential,             | 3 | الاسبوع<br>الثلاثون           |

#### 11. تقييم المقرر

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, quizzes

| No. | Evaluation method        | Marks      | % Grads     |
|-----|--------------------------|------------|-------------|
| 1   | Lab. Exam                | 10         | %10         |
| 2   | Quizzes                  | 10         | %10         |
| 3   | Term Exam                | 02         | %20         |
| 4   | Final Exam(experimental) | 01         | %10         |
| 5   | Final Exam (Theory)      | 05         | %50         |
|     | sum                      | <b>100</b> | <b>100%</b> |



|                                                                                                                             |                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| University Physics by Francis W. Sears, Mark W. Zemanseky and Hugh D. Young, 1982.                                          | Required textbooks (curricular books, if any)                      |
| Introduction to Physics by John D. Cutnell, Kenneth W. Johnson 8th.Ed., 2010.                                               | Main references (sources)                                          |
| Zainul Huda. <i>Metallurgy for Physicists and Engineers-Fundamentals, Applications, and Calculations</i> . CRC Press, 2020. | Recommended books and references (scientific journals, reports...) |
| Wikipedia                                                                                                                   | Electronic References, Websites                                    |



## نموذج وصف المقرر

|         |                                                                           |                                                                                                                                                                                                                                                                                                        |
|---------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.      | اسم المقرر:                                                               |                                                                                                                                                                                                                                                                                                        |
|         | اللغة العربية العامة                                                      |                                                                                                                                                                                                                                                                                                        |
| 2.      | رمز المقرر:                                                               |                                                                                                                                                                                                                                                                                                        |
|         | UOH101                                                                    |                                                                                                                                                                                                                                                                                                        |
| 3.      | الفصل/ السنة:                                                             |                                                                                                                                                                                                                                                                                                        |
|         | 2025-2026 المرحلة الأولى                                                  |                                                                                                                                                                                                                                                                                                        |
| 4.      | تاريخ إعداد هذا الوصف:                                                    |                                                                                                                                                                                                                                                                                                        |
|         | 2025-9-21                                                                 |                                                                                                                                                                                                                                                                                                        |
| 5.      | اشكال الحضور المتاحة:                                                     |                                                                                                                                                                                                                                                                                                        |
|         | التعليم الحضوري                                                           |                                                                                                                                                                                                                                                                                                        |
| 6.      | عدد الساعات الدراسية (الكلية) // عدد الوحدات (الكلية)                     |                                                                                                                                                                                                                                                                                                        |
|         | (30) ساعة / 2 وحدات.                                                      |                                                                                                                                                                                                                                                                                                        |
| 7.      | اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                           |                                                                                                                                                                                                                                                                                                        |
|         | الاسم : م. م. محمود جمعة سهيل<br>الايمل: mahmod.suhail@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                        |
| 8.      | أهداف المقرر                                                              |                                                                                                                                                                                                                                                                                                        |
|         | أهداف المادة الدراسية                                                     | <ol style="list-style-type: none"> <li>1. تعرف الطلبة على أهمية مادة اللغة العربية وآدابها، وفهم قواعد نحوها.</li> <li>2. تطوير مهارات الطلاب اللغوية.</li> <li>3. أن يكتسب الطالب المهارات اللازمة والقدرة على فهم التركيب النحوي والدلالي.</li> <li>4. تنمية ذائقة الطلاب الشعرية والفنية</li> </ol> |
| 9.      | استراتيجيات التعليم والتعلم                                               |                                                                                                                                                                                                                                                                                                        |
|         | الاستراتيجية                                                              | <ol style="list-style-type: none"> <li>1. إكساب الطلبة معلومات ومفاهيم اللغة العربية، وإعداد كوادر مدربة ومؤهلة للعمل في المؤسسات.</li> <li>2. تعليم الطلبة كيفية توظيف قواعد العربية العامة في كتابتهم.</li> <li>3. مناقشة الطلبة وإجراء اختبارات لمناقشة الأخطاء اللغوية والتعبيرية معهم.</li> </ol> |
| 10.     | بنية المقرر                                                               |                                                                                                                                                                                                                                                                                                        |
| الاسبوع | الساعات                                                                   | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                 |
|         |                                                                           | اسم الوحدة او الموضوع                                                                                                                                                                                                                                                                                  |
|         |                                                                           | طريقة التعلم                                                                                                                                                                                                                                                                                           |
|         |                                                                           | طريقة التقييم                                                                                                                                                                                                                                                                                          |



| الأسبوع    | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع                  | طريقة التعليم                    | طريقة التقييم       |
|------------|---------|------------------------|------------------------------------------|----------------------------------|---------------------|
| الأول      | 1       | القرآن الكريم          | سورة الحج الآية رقم 5                    | قراءة السورة وتفسيرها            | الأسئلة المباشرة    |
| الثاني     | 1       | الحديث النبوي الشريف   | إنما بعثت لأتمم مكارم الأخلاق            | شرح الحديث ومعانيه               | الأسئلة المباشرة    |
| الثالث     | 1       | الأدب العربي           | مختارات شعرية من العصر الجاهلي/ المعلمات | قراءة النص وتحليله فنياً ولغوياً | أسئلة تفاعلية       |
| الرابع     | 1       | الأدب العربي           | قصيدة الأفعى الأودي في الحكم             | قراءة النص وتحليله بمستويات عدة  | أسئلة مباشرة وقراءة |
| الخامس     | 1       | الصرف                  | الميزان الصرفي                           | محاضرة وتطبيقات عملية            | الأسئلة المباشرة    |
| السادس     | 1       | الصرف                  | تصريف الأفعال                            | محاضرة وتطبيقات عملية            | الأسئلة المباشرة    |
| السابع     | 1       | امتحان الشهر الأول     |                                          |                                  |                     |
| الثامن     | 1       | المهارات اللغوية       | الحروف الهجائية                          | محاضرة وتطبيقات عملية            | أسئلة تفاعلية       |
| التاسع     | 1       | علامات الترقيم         | أحكام كتابة علامات الترقيم               | محاضرة وتطبيقات عملية            | أسئلة تفاعلية       |
| العاشر     | 1       | أحكام كتابة الهمزة     | الأولى، المتوسطة، المتطرفة، الوصل والقطع | محاضرة وتطبيقات عملية            | أسئلة تفاعلية       |
| الحادي عشر |         | المعاجم العربية        | معجم الألفاظ                             | محاضرة وأسئلة                    | الأسئلة المباشرة    |





|                    |   |                                               |                                                            |                  |
|--------------------|---|-----------------------------------------------|------------------------------------------------------------|------------------|
| عشر                |   | (تعريفه، أهميته،<br>أنواع المعاجم)            | وتطبيقات                                                   |                  |
| الثاني عشر         | 1 | المعاجم العربية                               | منهج (العين<br>والأساس) ومعرفة<br>استخراج الألفاظ          | الأسئلة المباشرة |
| الثالث عشر         | 1 | من الأخطاء اللغوية<br>الشائعة                 | أخطاء شائعة في<br>اللسان المعاصر                           | الأسئلة المباشرة |
| الرابع عشر         | 1 | امتحان الشهر الثاني                           |                                                            |                  |
| الخامس عشر         | 1 | القرآن الكريم                                 | سورة البقرة/ الآيات<br>260 - 263                           | الأسئلة المباشرة |
| الأسبوع السادس عشر | 1 | الحديث النبوي الشريف                          | خيركم من تعلم<br>القرآن وعلمه                              | أسئلة تفاعلية    |
| الأسبوع السابع عشر | 1 | الأدب العربي                                  | 7 أبيات من بائية<br>الرومي                                 | الأسئلة المباشرة |
| الأسبوع الثامن عشر | 1 | القيم الإنسانية في الشعر<br>الجاهلي والإسلامي | العطف                                                      | الأسئلة المباشرة |
| الأسبوع التاسع عشر | 1 | النحو العربي                                  | أقسام الكلام/ أعراب<br>المبني والمعرّب/<br>المعرفة والنكرة | الأسئلة المباشرة |
| الأسبوع العشرون    | 1 | أقسام الكلام                                  | المبتدأ والخبر                                             | الأسئلة المباشرة |
| الأسبوع الحادي     | 1 | النواسخ                                       | كان وأخواتها                                               | الأسئلة المباشرة |



|                         |   |                    |                                                                         |                            |                  |
|-------------------------|---|--------------------|-------------------------------------------------------------------------|----------------------------|------------------|
| والعشرون                |   |                    |                                                                         |                            |                  |
| الاسبوع الثاني والعشرون | 1 | امتحان الشهر الأول |                                                                         |                            |                  |
| الاسبوع الثالث والعشرون | 1 | أقسام الكلام       | الفاعل ونائب الفاعل                                                     | محاضرة وتطبيقات عملية      | أسئلة مباشرة     |
| الاسبوع الرابع والعشرون | 1 | البلاغة العربية    | تعريف البلاغة لغة واصطلاحاً/ علاقة البلاغة باللغة العربية               | محاضرة وعرض تاريخي         | الأسئلة المباشرة |
| الاسبوع الخامس والعشرون | 1 | البلاغة العربية    | تعريف البيان وأنواعه                                                    | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السادس والعشرون | 1 | البلاغة العربية    | التشبيه والحقيقة والمجاز                                                | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السابع والعشرون | 1 | البلاغة العربية    | المجاز اللغوي (تعريفه وعلاقته وتطبيقاته + الاستعارة تعريفها وتطبيقاتها) | والمناقشة والحوار          | الأسئلة المباشرة |





|                         |   |                         |                                                       |                       |                  |
|-------------------------|---|-------------------------|-------------------------------------------------------|-----------------------|------------------|
| الاسبوع الثامن والعشرون | 1 | المجاز العقلي           | تعريفه وعلاقاته وتطبيقاته، الكناية تعريفها وتطبيقاتها | محاضرة وتطبيقات عملية | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 1 | امتحان الشهر الثاني     |                                                       |                       |                  |
| الاسبوع الثلاثون        | 1 | الأخطاء اللغوية الشائعة | أخطاء شائعة في الصحافة التلفزيونية                    | محاضرة وتطبيقات عملية | الأسئلة المباشرة |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريب

|                                                                                           |                                                                  |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| لا يوجد                                                                                   | الكتب المقررة المطلوبة (المنهجية إن وجدت)                        |
| شرح ابن عقيل على ألفية ابن مالك/ البلاغة والتطبيق، أحمد مطلوب                             | المراجع الأساسية (المصادر)                                       |
| معاني النحو - د.فاضل السامرائي، النحو الوافي - عباس حسن، الصرف الكافي، أيمن أمين عبدالغني | الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) |
| المكتبة الوقفية، أرشيف الشارخ، المكتبة المركزية - جامعة الموصل                            | المراجع الإلكترونية، مواقع الإنترنت                              |



## نموذج وصف المقرر

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1.                    | اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|                       | الكهربائية والمغناطيسية                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| 2.                    | رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
|                       | PHY108                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| 3.                    | الفصل \ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |
|                       | 2026-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 4.                    | تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
|                       | 2025\9\21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 5.                    | اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|                       | التعليم الحضورى                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| 6.                    | عدد الساعات الدراسية (الكلية) \ عدد الوحدات (الكلية):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|                       | 90 نظري + 90 عملي \ عدد الوحدات (8)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| 7.                    | اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|                       | الاسم: م.م أحمد صبحي علي حسين                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
|                       | الايميل: ahmed.subhi.ali@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| 8.                    | اهداف المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| اهداف المادة الدراسية | <ul style="list-style-type: none"> <li>- تعرف الطلبة على أساسيات الكهرباء والمغناطيسية وأهميتها في حياتنا والدمج بين المعاني الفيزيائية والقوانين والاشتقاقات الرياضية وفتح أفق الطالب نحو النظريات العلمية وتطبيقاتها.</li> <li>• جعل الطالب قادر على معرفة أساسيات علم الفيزياء .</li> <li>- جعل الطالب قادر على فهم الظواهر الفيزيائية من وجهة نظر رياضية.</li> <li>- تمكين الطالب من الحصول على المعرفة والفهم للقوانين العلمية في الفيزياء والتطبيقات العملية لعلوم الفيزياء والتحليل المنطقي والعلمي وتفسير للظواهر الفيزيائية</li> <li>- تعليم الطالب مهارات التفكير وتمكينه من فهم وحل المشاكل العلمية المرتبطة بالقوانين الفيزيائية .</li> </ul> |  |
| 9.                    | استراتيجيات التعلم والتعليم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| الاستراتيجية          | <ol style="list-style-type: none"> <li>1- تمكين الطلبة من الحصول على المعرفة والفهم الكهربائية والمغناطيسية.</li> <li>2- تمكين الطلبة من الحصول على المعرفة للشحنات والمجال الكهربائي .</li> <li>3- تمكين الطلبة من الحصول على المعرفة والفهم لمعادلات المجال</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                  |  |





|  |                                                                                                                                                                                                                                                                                                                                                                                             |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>الكهربائي والمغناطيسي والتيار الكهربائي</p> <p>4- تمكين الطلبة من الحصول على المعرفة والفهم لربط المتسعات وتأثير المادة العازلة عليها.</p> <p>5- قدرة الطالب على معرفة كيف تعمل دوائر التيار المستمر.</p> <p>6- قدرة الطالب على حل المسائل الحسابية المتعلقة بالتيار في الشبكات الكهربائية.</p> <p>7- قدرة الطالب على فهم ادق واشمل للمواضيع الرياضية المتعلقة بالمقاومات والمتسعات.</p> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. بنية المقرر:

| الاسبوع | الساعات | مخرجات التعلم المطلوبة                                       | اسم الوحدة او الموضوع   | طريقة التعلم                   | طريقة التقييم                      |
|---------|---------|--------------------------------------------------------------|-------------------------|--------------------------------|------------------------------------|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة                                       | اسم الوحدة / أو الموضوع | طريقة التعلم                   | طريقة التقييم                      |
| الاول   | 3       | اثبات قانون كولوم وحل المسائل المتعلقة بقانون التربيع العكسي | قانون كولوم             | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة والواجبات اليومية |
| الثاني  | 3       | تحقيق قانون كولوم، نواة الذرة في تجربة رذرفورد               | قانون كولوم             | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة                   |
| الثالث  | 3       | شدة المجال الكهربائي                                         | المجال الكهربائي        | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة                   |
| الرابع  | 3       | خطوط القوة الكهربائية                                        | المجال الكهربائي        | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة                   |
| الخامس  | 3       | تطبيقات على كيفية حساب شدة المجال الكهربائي                  | المجال الكهربائي        | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة                   |
| السادس  | 3       | شحنة الإلكترون                                               | المجال الكهربائي        | المحاضرة والمناقشة وحل المسائل | امتحان شهري                        |
| السابع  | 3       | فيض المجال الكهربائي                                         | قانون كاوس              | المحاضرة والمناقشة وحل المسائل |                                    |
| الثامن  | 3       | المجال الكهربائي بين لوحين                                   | قانون كاوس              | المحاضرة والمناقشة             |                                    |



|                         |          |                                                   |                                      |                  |
|-------------------------|----------|---------------------------------------------------|--------------------------------------|------------------|
|                         | متوازيين |                                                   | وحل المسائل                          |                  |
| التاسع                  | 3        | الجهد الكهربائي                                   | المحاضرة<br>والمناقشة<br>وحل المسائل | امتحان شهري      |
| العاشر                  | 3        | تطبيقات عن الجهد الكهربائي                        | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الحادي عشر              | 3        | طاقة الوضع الكهربائية                             | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الثاني عشر              | 3        | مولد فان دي كراف                                  | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الثالث عشر              | 3        | السعة الكهربائية                                  | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الرابع عشر              | 3        | كيفية حساب السعة                                  | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الخامس عشر              | 3        | اهمية استخدام العوازل في المتسعات                 | المحاضرة<br>والمناقشة<br>وحل المسائل |                  |
| الاسبوع السادس عشر      | 3        | توصيل المتسعات                                    | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الاسبوع السابع عشر      | 3        | المتسعات المستخدمة للاغراض العملية                | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثامن عشر      | 3        | الطاقة المخزنة في المتسعات                        | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الاسبوع التاسع عشر      | 3        | المتسعات المتغيرة                                 | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الاسبوع العشرون         | 3        | المعرفة النظرية والتطبيقية والقدرة على حل المسائل | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الاسبوع الحادي والعشرون | 3        | التيار الكهربائي                                  | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثاني والعشرون | 3        | المقاومة والمقاومة النوعية                        | المحاضرة<br>والمناقشة<br>وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثالث والعشرون | 3        | حل مسائل حول المقاومة النوعية                     | المحاضرة<br>والمناقشة<br>وحل المسائل |                  |





|                         |   |                                  |                  |                                |                  |
|-------------------------|---|----------------------------------|------------------|--------------------------------|------------------|
| الاسبوع الرابع والعشرون | 3 | المعامل الحراري للمقاومة النوعية | التيار والمقاومة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الخامس والعشرون | 3 | المقاومات المستخدمة عمليا        | التيار والمقاومة | المحاضرة والمناقشة وحل المسائل |                  |
| الاسبوع السادس والعشرون | 3 | دليل الوان المقاومات             | التيار والمقاومة | المحاضرة والمناقشة وحل المسائل | امتحان شهري      |
| الاسبوع السابع والعشرون | 3 | قانون اوم                        | التيار والمقاومة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثامن والعشرون | 3 | القدرة الحرارية في المقاومات     | التيار والمقاومة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 3 | قانون جول                        | التيار والمقاومة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثلاثون        | 3 | حل مسائل                         | التيار والمقاومة | المحاضرة والمناقشة وحل المسائل |                  |

#### 11. تقييم المقرر:

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس:

|                                                                   |                                                                                                                       |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت).                        | اساسيات الكهربائية والمغناطيسية (تأليف يحيى عبد الحميد الحاج علي).                                                    |
| المراجع الاساسية (المصادر).                                       | كتاب الكهرباء والمغناطيسية الجزء الاول: ترجمة الدكتور حازم فلاح سكيك.                                                 |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير). | متابعة المراجع الالكترونية والانترنت التي تتضمن المواقع الالكترونية للرصيفة ومواقع المكتبات في بعض الجامعات العالمية. |







## نموذج وصف المقرر

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. | اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
|    | حاسوب                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| 2. | رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
|    | UOH104                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| 3. | الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
|    | سنوي/المرحلة الاولى                                                                                                                                                                                                                                                                                                                                                                                                            |  |
| 4. | تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|    | 2025/9/1                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| 5. | اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|    | التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| 6. | عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                                                                                                                           |  |
|    | 30 ساعة/ 2 وحدات                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| 7. | اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                                                |  |
|    | الاسم: م.م. الاء سالم عبدالرزاق                                                                                                                                                                                                                                                                                                                                                                                                |  |
|    | الايميل: alaasalimabd161194@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                 |  |
| 8. | اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|    | اهداف المادة الدراسية                                                                                                                                                                                                                                                                                                                                                                                                          |  |
|    | <ul style="list-style-type: none"> <li>توضيح مفهوم الحاسوب وتحديد خصائصه وأنواعه المختلفة.</li> <li>توضيح مكونات الحاسوب ووظائفها.</li> <li>توضيح مكونات الحاسوب المادية وأنواعها المختلفة.</li> <li>اعطاء نبذة مختصرة عن البرمجيات الحاسوبية وتطبيقاتها.</li> <li>التعرف على بعض البرامج التطبيقية وتمكينه من طباعة التقارير وإعداد العروض التقديمية والجداول.</li> <li>التعرف على كيفية التعامل مع شبكة الانترنت.</li> </ul> |  |



| 9. استراتيجيات التعلم والتعليم                                                                                                                                                                                                                                                                                                                                             | الاستراتيجية |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| <p>تخريج افراد لهم ثقافة ومعرفة بكل ما يخص الحاسوب والتطورات السريعة في هذا المجال.</p> <p>جعل الطالب مستخدم جيد لجهاز الكمبيوتر ومحب لاستخدامه من خلال بيان الخصائص التي سوف يتمتع بها من خلال استخدام الجهاز.</p> <p>بناء جيل مواكب لعصر الكمبيوتر محب له.</p> <p>اتاحة المجال للطلاب بالمتابعة والتفكير والتنفيذ العملي والتطبيقي لاستحصال المعرفة في مجال الحاسوب.</p> |              |

| 10. بنية المقرر | الاسبوع | الساعات                | مخرجات التعلم المطلوبة                          | اسم الوحدة او الموضوع | طريقة التعلم   | طريقة التقييم |
|-----------------|---------|------------------------|-------------------------------------------------|-----------------------|----------------|---------------|
| الأسبوع         | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة / أو الموضوع                         | طريقة التعلم          | طريقة التقييم  |               |
| الاول           | 1       | اكتساب معرفة           | مقدمة عن الحاسوب                                | شرح ومناقشة           | مناقشة         |               |
| الثاني          | 1       | اكتساب معرفة           | مكونات الحاسوب Hardware                         | شرح ومناقشة           | مناقشة         |               |
| الثالث          | 1       | اكتساب معرفة           | مكونات الحاسوب 2 البرمجيات                      | شرح ومناقشة           | مناقشة         |               |
| الرابع          | 1       | اكتساب مهارات          | وحدات و أجهزة التخزين في الحاسوب                | تدريب مهارات          | مناقشة         |               |
| الخامس          | 1       | تقييم الاداء           | اختبار بالمحاضرات السابقة                       | اختبار                | اختبار         |               |
| السادس          | 1       | اكتساب معرفة           | امن الحاسوب                                     | شرح ومناقشة           | مناقشة         |               |
| السابع          | 1       | اكتساب معرفة           | تراكيب برامج الحاسوب                            | شرح ومناقشة           | اسئلة و مناقشة |               |
| الثامن          | 1       | اكتساب معرفة           | شبكات الحاسوب                                   | شرح ومناقشة           | اسئلة و مناقشة |               |
| التاسع          | 1       | تقييم الاداء           | اختبار بالمحاضرات السابقة                       | اختبار                | اختبار         |               |
| العاشر          | 1       | اكتساب المعرفة         | الانترنت                                        | شرح ومناقشة           | مناقشة         |               |
| الحادي عشر      | 1       | اكتساب المعرفة         | مواقع الويب                                     | شرح ومناقشة           | مناقشة         |               |
| الثاني عشر      | 1       | اكتساب المعرفة         | البريد الإلكتروني                               | شرح ومناقشة           | مناقشة         |               |
| الثالث عشر      | 1       | اكتساب المعرفة         | اساسيات نظام التشغيل                            | شرح ومناقشة           | مناقشة         |               |
| الرابع عشر      | 1       | اكتساب المعرفة         | اساسيات نظام التشغيل 2                          | شرح ومناقشة           | مناقشة         |               |
| الخامس عشر      | 1       | قياس المعارف           | الامتحان النظري (نصف السنة)                     | اسئلة و اختبارات      | اختبار         |               |
| السادس عشر      | 1       | اكتساب معرفة           | تعريف برنامج معالج النصوص Microsoft office word | تدريب مهارات          | مناقشة         |               |





|                  |   |              |                                                            |                    |                                                          |
|------------------|---|--------------|------------------------------------------------------------|--------------------|----------------------------------------------------------|
| السابع عشر       | 1 | اكتساب معرفة | تعريف صفحة العمل الرئيسية والأشرطة الموجودة                | شرح ومناقشة        | مناقشة واسئلة                                            |
| الثامن عشر       | 1 | اكتساب معرفة | شريط القوانين: قائمة ملف                                   | شرح ومناقشة        | مناقشة واسئلة                                            |
| التاسع عشر       | 1 | اكتساب معرفة | شريط القوانين : القائمة الرئيسية                           | شرح ومناقشة        | مناقشة واسئلة                                            |
| عشرون            | 1 | تقييم الأداء | اختبار                                                     | اختبار             | اختبار                                                   |
| واحد و عشرون     | 1 | اكتساب معرفة | شريط القوانين: قائمة ادراج                                 | شرح ومناقشة        | مناقشة                                                   |
| الثاني و عشرون   | 1 | اكتساب معرفة | قائمة تصميم                                                | شرح ومناقشة        | مناقشة                                                   |
| الثالث و العشرون | 1 | اكتساب معرفة | قائمة تخطيط الصفحة                                         | شرح ومناقشة        | مناقشة                                                   |
| الرابع و العشرون | 1 | تقييم اداء   | اختبار                                                     | اختبار             | اختبار                                                   |
| الخامس والعشرون  | 1 | اكتساب معرفة | تعريف برنامج العروض التقديمية power point                  | شرح ومناقشة        | مناقشة                                                   |
| السادس والعشرون  | 1 | اكتساب معرفة | تعريف صفحة العمل الرئيسية والأشرطة الموجودة                | شرح ومناقشة        | مناقشة                                                   |
| السابع والعشرون  | 1 | اكتساب معرفة | ادراج وحذف وتكرار الشرائح وتصميم الشريحة                   | شرح ومناقشة وتطبيق | منح درجات للمشاركين واجراء امتحان يومي بالمحاضرة السابقة |
| الثامن والعشرون  | 1 | تقييم الاداء | اختبار                                                     | اختبار             | اختبار                                                   |
| التاسع والعشرون  | 1 | اكتساب معرفة | التأثيرات الحركية على الكائنات والحركات الانتقالية للشرائح | شرح ومناقشة وتطبيق | منح درجات للمشاركين واجراء امتحان يومي بالمحاضرة السابقة |
| الثلاثون         | 1 | قياس المعارف | اختبار النهائي                                             | اختبار             | اختبار                                                   |

## 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

## 12. مصادر التعلم والتدريس

|                                                                  |                                                                                                                             |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        | ملزمة من اعداد مدرس المادة                                                                                                  |
| المراجع الاساسية (المصادر)                                       | <p>1. أساسيات الحاسوب اعداد : الخضر علي الخضر بحاث</p> <p>2. مهارات الحاسوب م.وسيم يوسف ليلاس مظلوم</p>                     |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |



<https://en.wikipedia.org/>  
<https://mawdoo3.com>

المراجع الالكترونية، مواقع الانترنت





## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                            |         |                        |                       |              |                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------|-----------------------|--------------|------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                             |         |                        |                       |              |                              |
| حقوق أنسان                                                                                                                                                                                                                                                                                                                                                                                                 |         |                        |                       |              |                              |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                             |         |                        |                       |              |                              |
| UOH103                                                                                                                                                                                                                                                                                                                                                                                                     |         |                        |                       |              |                              |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                           |         |                        |                       |              |                              |
| 2025-2024                                                                                                                                                                                                                                                                                                                                                                                                  |         |                        |                       |              |                              |
| 4. تاريخ أعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                  |         |                        |                       |              |                              |
| 2025/3/17                                                                                                                                                                                                                                                                                                                                                                                                  |         |                        |                       |              |                              |
| 5. أشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                   |         |                        |                       |              |                              |
| التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                            |         |                        |                       |              |                              |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                                                                                                                                                                                                                                                                                       |         |                        |                       |              |                              |
| 90 ساعة                                                                                                                                                                                                                                                                                                                                                                                                    |         |                        |                       |              |                              |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                         |         |                        |                       |              |                              |
| الاسم: م.م. دلشاد محمد زرا dilshad.harki@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                |         |                        |                       |              |                              |
| 8. أهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                            |         |                        |                       |              |                              |
| <p>(التعريف بحقوق الإنسان الأساسية وبيان حقوق الإنسان في الدستور والقوانين العراقية ومبادئ الأديان وإكساب الطلبة معلومات عن حقوقهم وإعطاء معلومات كافية عن حقوق الإنسان على النطاق الداخلي والدولي والتعريف بالديمقراطية ومفاهيمها وبيان أنواع الديمقراطية ومدى إمكانية تطبيقها في العراق).</p>                                                                                                            |         |                        |                       |              | <p>أهداف المادة الدراسية</p> |
| 9. استراتيجيات التعلم والتعليم                                                                                                                                                                                                                                                                                                                                                                             |         |                        |                       |              |                              |
| <p>1.. التعرف على الحقوق في ظل الحداثة والتطور.<br/>                 2.. التعرف على القوانين وتعديلاتها في مجال حقوق الإنسان<br/>                 3.. اكتساب الطلبة المهارات الأساسية بالحقوق والأنظمة ومنها الديمقراطية<br/>                 4.. إكساب الطلبة معلومات عن الحقوق في الدستور والقوانين العراقية<br/>                 5.. إكساب الطالب معلومات على الحقوق في المعاهدات والمواثيق الدولية</p> |         |                        |                       |              | <p>الاستراتيجية</p>          |
| 10. بنية المقرر                                                                                                                                                                                                                                                                                                                                                                                            |         |                        |                       |              |                              |
| الأسبوع                                                                                                                                                                                                                                                                                                                                                                                                    | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة أو الموضوع | طريقة التعلم | طريقة التقييم                |
| الأسبوع                                                                                                                                                                                                                                                                                                                                                                                                    | الساعات | مخرجات التعلم المطلوبة |                       |              |                              |



|            |   |                                              |                                                       |              |                                |
|------------|---|----------------------------------------------|-------------------------------------------------------|--------------|--------------------------------|
| الأول      | 2 | التعريفات الأساسية                           | تعريف حقوق الإنسان                                    | الشرح النظري | توضيح                          |
| الثاني     | 2 | التطور التاريخي                              | التطور التاريخي لحقوق الإنسان في وادي الرافدين        | الشرح النظري | توضيح                          |
| الثالث     | 2 | تعريف الطلبة بحقوق الإنسان في الديانات       | حقوق الإنسان في الديانة الإسلامية والمسيحية واليهودية | الشرح النظري | توضيح                          |
| الرابع     | 2 | تعريف الطلبة بأنواع الحقوق وخصائصها          | أنواع الحقوق وخصائصها                                 | الشرح النظري | توضيح ونقاش                    |
| الخامس     | 2 | حقوق الإنسان في الدستور العراقي              | الدستور العراقي لسنة 2005                             | الشرح النظري | توضيح ونقاش وامتحان يومي       |
| السادس     | 2 | حقوق الإنسان في الدستور العراقي              | تكملة نصوص الدستور العراقي لسنة 2005                  | الشرح النظري | نقاش وحوار                     |
| السابع     | 2 | حقوق الإنسان في الدستور العراقي              | تكملة نصوص الدستور العراقي لسنة 2005                  | الشرح النظري | نقاش وحوار                     |
| الثامن     | 2 | حقوق الإنسان في القوانين والاتفاقيات الدولية | حقوق الإنسان في القوانين والاتفاقيات الدولية          | الشرح النظري | توضيح                          |
| التاسع     | 2 | حقوق الإنسان في القوانين والاتفاقيات الدولية | حقوق الإنسان في القوانين والمنظمات الدولية            | الشرح النظري | توضيح                          |
| العاشر     | 2 | حقوق الإنسان في القوانين والاتفاقيات الدولية | حقوق الإنسان في المنظمات العالمية                     | الشرح النظري | توضيح ونقاش                    |
| الحادي عشر | 2 | حقوق الإنسان في القوانين والاتفاقيات الدولية | حقوق الإنسان في المنظمات الإقليمية                    | الشرح النظري | توضيح ونقاش                    |
| الثاني عشر | 2 | حقوق الإنسان في بعض القوانين العراقية        | قانون العمل والضمان الاجتماعي                         | الشرح النظري | توضيح ونقاش                    |
| الثالث عشر | 2 | حقوق الإنسان في بعض القوانين العراقية        | قانون الأحوال الشخصية                                 | الشرح النظري | توضيح ونقاش وحوار وامتحان يومي |
| الرابع عشر | 2 | حقوق الإنسان في بعض القوانين العراقية        | حقوق الإنسان في القانون المدني                        | الشرح النظري | توضيح ونقاش                    |
| الخامس عشر | 2 | تعليمات انضباط الطلبة                        | تعليمات انضباط الطلبة                                 | الشرح النظري | سؤال وجواب ونقاش               |





|                         |   |                                    |                                               |              |                   |
|-------------------------|---|------------------------------------|-----------------------------------------------|--------------|-------------------|
| الأسبوع السادس عشر      | 2 | مراجعة عامة                        | حقوق الإنسان في القوانين العراقية             | الشرح النظري | سؤال وجواب ونقاش  |
| الأسبوع السابع عشر      | 2 | مراجعة عامة                        | حقوق الإنسان في القوانين العراقية             | الشرح النظري | نقاش وامتحان يومي |
| الأسبوع الثامن عشر      | 2 | تعريفات الديمقراطية                | تعريفات عامة للديمقراطية                      | الشرح النظري | توضيح             |
| الأسبوع التاسع عشر      | 2 | مفاهيم أساسية في النظام الديمقراطي | مفاهيم أساسية في النظام الديمقراطي            | الشرح النظري | توضيح             |
| الأسبوع العشرون         | 2 | أنواع الديمقراطية                  | اشكال الديمقراطية في العراق                   | الشرح النظري | توضيح             |
| الأسبوع الحادي والعشرون | 2 | تقييم النظام الديمقراطي            | مزايا وعيوب الديمقراطية                       | الشرح النظري | توضيح ونقاش       |
| الأسبوع الثاني والعشرون | 2 | تطبيق النظام الديمقراطي في العراق  | مدى إمكانية تطبيق النظام الديمقراطي في العراق | الشرح النظري | توضيح ونقاش       |
| الأسبوع الثالث والعشرون | 2 | الأنظمة العالمية في الحكم          | أمثلة ونماذج                                  | الشرح النظري | توضيح ونقاش       |



|                         |   |                                   |                                         |                     |                    |
|-------------------------|---|-----------------------------------|-----------------------------------------|---------------------|--------------------|
| الأسبوع الرابع والعشرون | 2 | الديمقراطية في بلدان الشرق الأوسط | أمثلة ونماذج                            | الشرح النظري        | توضيح ونقاش        |
| الأسبوع الخامس والعشرون | 2 | الديمقراطية في الواقع العراقي     | أمثلة ونماذج ووقائع                     | الشرح النظري        | توضيح ونقاش        |
| الأسبوع السادس والعشرون | 2 | مراجعة عامة                       | تعريفات وتطور النظام الديمقراطي وأنواعه | الشرح النظري        | توضيح وامتحان يومي |
| الأسبوع السابع والعشرون | 2 | مراجعة عامة للمنهج                | حقوق الانسان                            | الشرح النظري        | إعادة توضيح        |
| الأسبوع الثامن والعشرون | 2 | مراجعة عامة للمنهج                | حقوق الانسان                            | الشرح النظري        | إعادة توضيح        |
| الأسبوع التاسع والعشرون | 2 | مراجعة عامة للمنهج                | الديمقراطية                             | الشرح النظري        | إعادة توضيح        |
| الأسبوع الثلاثون        | 2 | مراجعة عامة للمنهج                | الديمقراطية                             | الشرح النظري والعمل | إعادة توضيح        |
| 11. تقييم المقرر        |   |                                   |                                         |                     |                    |



توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

| 12. مصادر التعلم والتدريس                                        |                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الكتب المفردة المطلوبة (المنهجية أن وجدت)                        | <p>1- د. رياض عزيز حقوق الإنسان والديمقراطية</p> <p>2- Omar MA., 1975, Elementary solid state physics, principles and applications, Addison-Wesley Publishing Company</p> <p>3- فيزياء الحالة الصلبة، مزيد جبرائيل الجزء الأول والثاني</p> <p>4- فيزياء حالة صلبة، يحيى الجمال</p> |
| المراجع الأساسية (المصادر)                                       | حقوق الإنسان (د. حميد حنون)                                                                                                                                                                                                                                                        |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | حقوق الإنسان (ا.د. علي يوسف الشكري)                                                                                                                                                                                                                                                |
| المراجع الإلكترونية، مواقع الأنترنت                              | المواقع الإلكترونية الخاصة بمنظمات حقوق الإنسان.                                                                                                                                                                                                                                   |



### نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |
| أصول التربية والتعليم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |
| EPS106                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                              |
| 2005-2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |
| 18-9-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                              |
| التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |
| 60 ساعة دراسية/ 2 وحدات                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |
| الاسم: م. م. مهدي احمد سلطان                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |
| الايميل: mohand.1993@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                              |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |
| <p>1. زيادة وعي الطلبة بأهمية ربط الجانب العلمي بالعمل لاسيما اذا كان يتعلق بالارتقاء في جوانب الحياة اليومية والتي من خلالها إصلاح المجتمع وخدمة الوطن والعيش الذي يحقق السعادة للجميع.</p> <p>2. زيادة فهم الطالب للواقع التربوي والاجتماعي على مر العصور وإدراك المسيرة التربوية في أقصى ضرورتاتها وفهم النظريات التربوية على مختلف الشعوب قديما وحديثا</p> <p>3. تفسير العملية التربوية من وجهة النظر التاريخية وفلسفية والقاء الضوء على التنشئة والتربية، وبيان أهمية دور مؤسسات التنشئة التربوية الاجتماعية، ومساعدة الطلاب على التدريب والإحساس بأهمية العملية التعليمية،</p> <p>4. ومن أهم أهدافه تحديد الواقع التربوي التي كشفت عنه المدارس الفلسفية في التربية وتحديد أهداف تربية المجتمع وتطبيق المفاهيم التربوية،</p> <p>5. ودراسة العلاقات بين النظام التربوي القائم على التفاعل الاجتماعي والنظم التربوية الأخرى، ودراسة الإنسان الفرد عندما يدخل مع إنسان آخر في المؤسسات التربوية وفي العلاقات وتعاملات الإنسانية وتفاعله مع الأنظمة التي يقرها المجتمع .</p> <p>6. تعريف الطلبة بأهمية مواكبة التطوير والتجديد لاسيما على جانب العملية التعليمية (التعليم الحديث )</p> | <p>لهداف المادة الدراسية</p> |



|                                |                                                                                                                                                                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |                                                                                                                                                                                                                                                                                      |
| 9. استراتيجيات التعليم والتعلم |                                                                                                                                                                                                                                                                                      |
| الاستراتيجية                   | 1. الحوار والمناقشة<br>2. العصف الذهني وحل المشكلات.<br>3. القياس والاستقراء<br>4. التعلم التعاوني.<br>5. الحلقات التعليمية "السيمنار".<br>6. استراتيجية الأعمدة الخمسة والربط مع واقع الحياة اليومية للطلبة لتوسيع ما تعلموه.<br>7. التعليم المدمج.<br>8. الواجبات والأنشطة الصفية. |

| 10. بنية المقرر |         |                                                       |                               |                  |                     |
|-----------------|---------|-------------------------------------------------------|-------------------------------|------------------|---------------------|
| الاسبوع         | الساعات | مخرجات التعلم المطلوبة                                | اسم الوحدة او الموضوع         | طريقة التعليم    | طريقة التقييم       |
| 1               | 2       | ان يوضح الطلبة معنى التربية واهدافها ضرورتها          | معنى التربية واهدافها ضرورتها | الحوار والمناقشة | اختبار شفهي وتحريري |
| 2               | 2       | ان يميز الطلبة بين نظرياتها ، ومجالاتها               | نظرياتها ، ومجالاتها          | الحوار والمناقشة | اختبار شفهي وتحريري |
| 3               | 2       | ان يتعرف الطلبة على الأساس التاريخي للتربية           | الأساس التاريخي للتربية       | الحوار والمناقشة | اختبار شفهي وتحريري |
| 4               | 2       | ان يفهم التربية القديمة                               | الأساس التاريخي للتربية       | الحوار والمناقشة | اختبار شفهي وتحريري |
| 5               | 2       | ان يلخص كيفية التربية الصينية                         | الأساس التاريخي للتربية       | الحوار والمناقشة | اختبار شفهي وتحريري |
| 6               | 2       | ان يوضح التربية اليونانية                             | الأساس التاريخي للتربية       | الحوار والمناقشة | اختبار شفهي وتحريري |
| 7               | 2       | ان يوضح تربية القرون الوسطى                           | الأساس التاريخي للتربية       | الحوار والمناقشة | اختبار شفهي وتحريري |
| 8               | 2       | ان يقارن بين التربية العربية قبل الاسلام وبعد الاسلام | الأساس التاريخي للتربية       | الحوار والمناقشة | اختبار شفهي وتحريري |
| 9               | 2       | ان يميز الطلبة بين التحديات التي تعيق                 | الأساس التاريخي للتربية       | الحوار والمناقشة | اختبار شفهي وتحريري |



|    |   |                                                    |                                               |                  |                     |
|----|---|----------------------------------------------------|-----------------------------------------------|------------------|---------------------|
|    |   |                                                    | والعوامل التي تساهم في تطبيق التربية الحديثة. |                  |                     |
| 10 | 2 | بين العلاقة بين التربية والمجتمع                   | الاساس الاجتماعي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 11 | 2 | يلخص العلاقة بين الفرد والبيئة                     | الاساس الاجتماعي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 12 | 2 | ان يمارس التربية الخلقية                           | الاساس الاجتماعي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 13 | 2 | ان يطبق الطلبة التربية العائلية،                   | الاساس الاجتماعي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 14 | 2 | ان يطبق الطلبة التربية الوطنية،                    | الاساس الاجتماعي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 15 | 2 | ان يطبق الطلبة التربية الصحية                      | الاساس الاجتماعي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 16 | 2 | يوضح التربية واثرها في التنمية الاقتصادية          | الاساس الاقتصادي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 17 | 2 | ان يعدد الموارد الطبيعية وكيفية استثمارها          | الاساس الاقتصادي للتربية                      | الحوار والمناقشة | اختبار شفهي وتحريري |
| 18 | 2 | ان يبين التربية والمنهج في البحث                   | الاساس العلمي للتربية                         | الحوار والمناقشة | اختبار شفهي وتحريري |
| 19 | 2 | الاسس الوطنية والاجتماعية                          | الاسس الوطنية والاجتماعية                     | الحوار والمناقشة | اختبار شفهي وتحريري |
| 20 | 2 | التربية في المنظور الاسلامي                        | التربية في المنظور الاسلامي                   | الحوار والمناقشة | اختبار شفهي وتحريري |
| 21 | 2 | يوضح المدرسة الشاملة                               | التجديد التربوي في العراق                     | الحوار والمناقشة | اختبار شفهي وتحريري |
| 22 | 2 | يفهم التربية المنهجية                              | التجديد التربوي في العراق                     | الحوار والمناقشة | اختبار شفهي وتحريري |
| 23 | 2 | يعبر عن أهمية مدارس المتميزين التمرير              | التجديد التربوي في العراق                     | الحوار والمناقشة | اختبار شفهي وتحريري |
| 24 | 2 | تقبل الفرد البيئة البدائية وكيف نسجت التربية نفسها | التربية البدائية                              | الحوار والمناقشة | اختبار شفهي وتحريري |
| 25 | 2 | ان يكون لدى الطلبة حاجة اجتماعية معينة.            | التربية الاجتماعية                            | الحوار والمناقشة | اختبار شفهي وتحريري |
| 26 | 2 | ايجاد علاقة التناسق بين الحضارات                   | التربية عبر التاريخ                           | الحوار والمناقشة | اختبار شفهي وتحريري |





|    |   |                                                                        |                                  |                  |                     |
|----|---|------------------------------------------------------------------------|----------------------------------|------------------|---------------------|
| 27 | 2 | يعني التماثل والاتساق في التفكير والعمل بما يمليه علينا ديننا          | التربية الاسلامية                | الحوار والمناقشة | اختبار شفهي وتحريري |
| 28 | 2 | ان يطبق الطلبة أبرز البرامج التثقيفية والتوعية التي تخدم المجتمع       | تطبيقات تربوية مجتمعية           | الحوار والمناقشة | اختبار شفهي وتحريري |
| 29 |   | أن يتمكن الطلبة من الأسس التي تقوم عليها التطبيقات المنهجية.           | تطبيقات تربوية منهجية            | الحوار والمناقشة | اختبار شفهي وتحريري |
| 30 | 2 | ان يساهم الطلبة في الحد من المعوقات التي تواجه التقدم المجتمعي والوطني | تحديات الأسس الاجتماعية والوطنية | الحوار والمناقشة | اختبار شفهي وتحريري |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والاختبارات اليومية والشفوية والشهرية التحريرية والتقارير.... الخ

#### 12. مصادر التعليم والتدريس

|                                                                  |                                                                                                                                                                                                                                       |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        |                                                                                                                                                                                                                                       |
| المراجع الاساسية (المصادر)                                       | <p>1. ابن رشد وفلسفته بين التراث والمعاصرة، الأعسم، عبد الأمير، ج ١، بيت الحكمة، بغداد ١٩٩٩ م</p> <p>2. د. إبراهيم ناصر، اسس التربية، دار الطليعة، عمان، 2004</p> <p>3. الجمهورية، أفلاطون، ترجمة حنا خباز، دار التراث بيروت ١٩٦٩</p> |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) |                                                                                                                                                                                                                                       |



|                                                                                                                                                                                                                       |                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <p>4. د. ماهر الجعفري ، اسس التربية، دار<br/>عمار ، عمان ، 1998</p> <p>5. د. ابراهيم عثمان، التربية ، دار كاظمة،<br/>الكويت، 1983</p> <p>6. د. محمود السيد، دراسات في التربية<br/>والمجتمع، النديم، القاهرة، 1988</p> |                                     |
|                                                                                                                                                                                                                       | المراجع الالكترونية، مواقع الانترنت |





## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                  |               |                                                                                                                                              |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                   |               | الحاسوب/المرحلة الثانية                                                                                                                      |                         |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                   |               | UOH204                                                                                                                                       |                         |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                 |               | 2025-2026                                                                                                                                    |                         |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                        |               | 2025/9/1                                                                                                                                     |                         |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                         |               | حضورى وصف الكترونى                                                                                                                           |                         |
| 6. عدد الساعات الدراسية (الكلية)/ عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                           |               | ساعتان وحدتان                                                                                                                                |                         |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                               |               | 1.م.د. رياض مبارك عبدالله      البريد الإلكتروني: <a href="mailto:drriwad_mubarak@uohamdaniva.edu.iq">drriwad_mubarak@uohamdaniva.edu.iq</a> |                         |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                  |               | اهداف المادة الدراسية                                                                                                                        |                         |
| <ul style="list-style-type: none"><li>• فهم مبادئ وتقنيات محاكاة الذكاء البشرى بالحاسوب.</li><li>• تنمية مهارات التفكير النقدي والابداعي لدى الطالب للتعامل مع الذكاء الاصطناعي</li><li>• تعلم استكشاف اخطاء الكمبيوتر واصلاحها.</li><li>• تعلم الامن والشبكات والتجارة الالكترونية.</li></ul>                                   |               |                                                                                                                                              |                         |
| 9. استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                   |               | الاستراتيجية                                                                                                                                 |                         |
| <ul style="list-style-type: none"><li>• قراءة كتب ومحاضرات خاصة بالمنهج.</li><li>• التدريبات والانشطة اثناء المحاضرة وخارجها.</li><li>• عروض تقديمية خاصة بمواضيع المحاضرة.</li><li>• المحاضرة والمناقشة والحوار والتحليل التطبيقي.</li><li>• المحاضرة النظرية والعملية، الحوار والمناقشات، الاسئلة الشفوية والتقارير.</li></ul> |               |                                                                                                                                              |                         |
| 10. بنية المقرر                                                                                                                                                                                                                                                                                                                  |               |                                                                                                                                              |                         |
| الأسبوع                                                                                                                                                                                                                                                                                                                          | الساعات       | مخرجات التعلم المطلوبة                                                                                                                       | اسم الوحدة / أو الموضوع |
| طريقة التعليم                                                                                                                                                                                                                                                                                                                    | طريقة التقييم |                                                                                                                                              |                         |





|            |   |               |                                                                                               |                    |                                     |
|------------|---|---------------|-----------------------------------------------------------------------------------------------|--------------------|-------------------------------------|
| الأول      | 1 | اكتساب معرفة  | الأمن والشبكات: ماهي الشبكة؟ أنواع الشبكات، المكونات الأساسية للشبكة                          | شرح ومناقشة        | منح درجات للمشاركين                 |
| الثاني     | 1 | اكتساب مهارات | اساسيات أمن الشبكات                                                                           | تدريب مهارات       | تقديم حوافز التشجيع                 |
| الثالث     | 1 | اكتساب معرفة  | استكشاف اخطاء الشبكة واصلاحها                                                                 | شرح ومناقشة وتطبيق | منح درجات للمشاركين                 |
| الرابع     | 1 | قياس المعارف  | اجراء امتحان يومي بالمحاضرات السابقة                                                          | اسئلة واختبارات    | تطبيق معايير الاختبار العلمي والعمل |
| الخامس     | 1 | اكتساب معرفة  | التجارة الالكترونية: مفاهيم الخدمات المصرفية الالكترونية وتشمل الخدمات المصرفية عبر الانترنت، | شرح ومناقشة وتطبيق | منح درجات للمشاركين                 |
| السادس     | 1 | اكتساب مهارات | خدمات اجهزة الصراف الآلي وبطاقات الخصم                                                        | تدريب مهارات       | تقديم حوافز التشجيع                 |
| السابع     | 1 | اكتساب معرفة  | الخدمات المصرفية عبر الرسائل النصية                                                           | شرح ومناقشة وتطبيق | منح درجات للمشاركين                 |
| الثامن     | 1 | اكتساب مهارات | التبنيات الالكترونية والخدمات المصرفية عبر الهاتف المحمول                                     | تدريب مهارات       | تقديم حوافز التشجيع                 |
| التاسع     | 1 | قياس المعارف  | اجراء امتحان يومي بالمحاضرات السابقة                                                          | اسئلة واختبارات    | تطبيق معايير الاختبار العلمي والعمل |
| العاشر     | 1 | اكتساب مهارات | استكشاف اخطاء الحاسوب                                                                         | تدريب مهارات       | تقديم حوافز التشجيع                 |
| الحادي عشر | 1 | اكتساب معرفة  | تحديد وحل المشاكل الشائعة في الاجهزة والبرامج التي يواجهها مستخدمو الحاسوب                    | شرح ومناقشة وتطبيق | منح درجات للمشاركين                 |
| الثاني عشر | 1 | اكتساب مهارات | تقنيات أدوات أساسية لتشخيص المشكلات وحلها                                                     | تدريب مهارات       | تقديم حوافز التشجيع                 |
| الثالث عشر | 1 | قياس المعارف  | اجراء امتحان يومي بالمحاضرات السابقة                                                          | اسئلة واختبارات    | تطبيق معايير الاختبار العلمي والعمل |
| الرابع عشر | 1 | قياس المعارف  | الاختبار النظري الفصلي                                                                        | اسئلة واختبارات    | تطبيق معايير الاختبار العلمي والعمل |
| الخامس عشر | 1 | قياس المهارات | الاختبار العملي الفصلي                                                                        | تقديم مشاريع       | تطبيق معايير الاختبار العلمي والعمل |
| السادس عشر | 1 | اكتساب معرفة  | مقدمة في الذكاء الاصطناعي                                                                     | شرح ومناقشة وتطبيق | منح درجات للمشاركين                 |
| السابع عشر | 1 | اكتساب معرفة  | تعريف الذكاء الاصطناعي، تاريخه، تقنياته ومنهجيته                                              | تدريب مهارات       | تقديم حوافز التشجيع                 |



|                               |   |               |                                                                                  |                    |                                         |
|-------------------------------|---|---------------|----------------------------------------------------------------------------------|--------------------|-----------------------------------------|
| الاسبوع<br>الثامن<br>عشر      | 1 | اكتساب معرفة  | التحديات والاعتبارات<br>الاخلاقية للذكاء الاصطناعي                               | شرح ومناقشة        | منح درجات للمشاركين                     |
| الاسبوع<br>التاسع<br>عشر      | 1 | اكتساب مهارات | الذكاء الاصطناعي في<br>حياتنا اليومية                                            | تدريب مهارات       | تقديم حوافز التشجيع                     |
| الاسبوع<br>العشرون            | 1 | اكتساب مهارات | تطبيقات الذكاء الاصطناعي                                                         | شرح ومناقشة وتطبيق | منح درجات للمشاركين                     |
| الاسبوع<br>الحادي<br>والعشرون | 1 | قياس المعارف  | اجراء امتحان يومي<br>بالمحاضرات السابقة                                          | اسئلة واختبارات    | تطبيق معايير الاختبار<br>العلمي والعلمي |
| الاسبوع<br>الثاني<br>والعشرون | 1 | اكتساب معرفة  | الذكاء الاصطناعي<br>والمجتمع                                                     | شرح ومناقشة        | منح درجات للمشاركين                     |
| الاسبوع<br>الثالث<br>والعشرون | 1 | اكتساب معرفة  | تأثيره على العلاقات<br>الاجتماعية والدولية<br>ومستقبل البشرية                    | شرح ومناقشة        | تقديم حوافز التشجيع                     |
| الاسبوع<br>الرابع<br>والعشرون | 1 | اكتساب معرفة  | التحديات الاخلاقية في<br>الذكاء الاصطناعي                                        | شرح ومناقشة        | منح درجات للمشاركين                     |
| الاسبوع<br>الخامس<br>والعشرون | 1 | اكتساب معرفة  | الخصوصية والعراقبة                                                               | تدريب مهارات       | تقديم حوافز التشجيع                     |
| الاسبوع<br>سادس<br>والعشرون   | 1 | اكتساب معرفة  | تأثير الذكاء الاصطناعي<br>على سوق العمل                                          | شرح ومناقشة        | منح درجات للمشاركين                     |
| الاسبوع<br>السابع<br>والعشرون | 1 | اكتساب معرفة  | مستقبل الذكاء الاصطناعي                                                          | شرح ومناقشة        | منح درجات للمشاركين                     |
| الاسبوع<br>الثامن<br>والعشرون | 1 | اكتساب مهارات | الاتجاهات المستقبلية في<br>الذكاء الاصطناعي الأبحاث<br>الحديثة والتحديات الناشئة | تدريب مهارات       | تقديم حوافز التشجيع                     |





|                                                                                                                                            |   |               |                                                                                                                                                         |                 |                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------------|
| الاسبوع التاسع والعشرون                                                                                                                    | 1 | قياس المعارف  | الاختبار النظري الفصلي                                                                                                                                  | اسئلة واختبارات | تطبيق معايير الاختبار العلمي والعمل |
| الاسبوع الثلاثون                                                                                                                           | 1 | قياس المهارات | الاختبار العملي الفصلي                                                                                                                                  | تقديم مشاريع    | تطبيق معايير الاختبار العلمي والعمل |
| 11. تقييم المقرر                                                                                                                           |   |               |                                                                                                                                                         |                 |                                     |
| توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ |   |               |                                                                                                                                                         |                 |                                     |
| 12. مصادر التعلم والتدريس                                                                                                                  |   |               |                                                                                                                                                         |                 |                                     |
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                                                                                                  |   |               | <ul style="list-style-type: none"> <li>• عادل عبد النور، "مدخل الى عالم الذكاء الاصطناعي"، 2005.</li> <li>• محاضرات تشتمل على مفردات المنهج.</li> </ul> |                 |                                     |
| المراجع الاساسية (المصادر)                                                                                                                 |   |               | Ahmed Banafa," Introduction to Artificial Intelligence (AI)", 1 st Edition (2024)                                                                       |                 |                                     |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير)                                                                           |   |               | David L. Poole & Alan K. Mackworth," Artificial Intelligence: Foundations of Computational Agents" (2017)                                               |                 |                                     |
| المراجع الالكترونية، مواقع الانترنت                                                                                                        |   |               | <a href="https://www.csail.mit.edu">https://www.csail.mit.edu</a>                                                                                       |                 |                                     |





## نموذج وصف المقرر

|    |                                                                                                                                                                                                                                                                                                                                                                                                |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                    |
|    | الكهربائية والمغناطيسية المتقدم                                                                                                                                                                                                                                                                                                                                                                |
| 2. | رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                    |
|    | PHY210                                                                                                                                                                                                                                                                                                                                                                                         |
| 3. | الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                  |
|    | 2026-2025                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. | تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                         |
|    | 2025/9/1                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. | اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                          |
|    | التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                |
| 6. | عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                                                                                                                                                                                                                                                                              |
|    | 60 ساعة/ 5 وحدات                                                                                                                                                                                                                                                                                                                                                                               |
| 7. | اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                |
|    | الاسم: م.م. احمد تركي عبد الحميد<br>الايمل: <a href="mailto:phy.ahmedturki@uohamdaniya.edu.iq">phy.ahmedturki@uohamdaniya.edu.iq</a>                                                                                                                                                                                                                                                           |
| 8. | اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                   |
|    | <p>اهداف المادة الدراسية</p> <p>تعريف الطلبة بالنظريات والمفاهيم الاساسية في علم الكهربائية والمغناطيسية والقوانين التي تربط بينهما والتي يتمكن من خلالها الطالب على فهم المبرهنات وحل المسائل المتعلقة بعلمي الكهربائية والمغناطيسية.</p>                                                                                                                                                     |
| 9. | استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                                                                                    |
|    | <p>الاستراتيجية</p> <p>1- تعزيز الفهم العميق لمفاهيم الكهرباء والمغناطيسية وعلاقتها بالطبيعة والعلوم الأخرى.</p> <p>2- تطوير القدرة على تحليل المشكلات المتعلقة بالتيار الكهربائي والحقول المغناطيسية وفهم الظواهر المتعلقة بها.</p> <p>3- تمكين الطلاب من فهم التطبيقات العملية لمفاهيم الكهرباء والمغناطيسية في مجالات مثل الهندسة الكهربائية والإلكترونيات والاتصالات والطاقة المتجددة.</p> |



|    |                                                                                                                                                        |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4- | تطوير المهارات الحسابية اللازمة لحل المسائل الفيزيائية المعقدة، بالإضافة إلى تعزيز المهارات التجريبية من خلال القيام بالتجارب العملية وتحليل البيانات. |
|    | التفاعل والتواصل: تشجيع التفاعل والتواصل بين الطلاب من خلال مناقشة المفاهيم وحل المشكلات الفيزيائية بشكل جماعي                                         |

#### 10. بنية المقرر

| الاسبوع | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة او الموضوع                                                                  | طريقة التعلم               | طريقة التقييم    |
|---------|---------|-----------------------------------|----------------------------------------------------------------------------------------|----------------------------|------------------|
| الاول   | 2       | المعرفة النظرية والتحليل التطبيقي | المجال المغناطيسي-<br>الفيض المغناطيسي-<br>حركة الجسيمات المشحونة في المجال المغناطيسي | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني  | 2       | المعرفة النظرية والتحليل التطبيقي | تجربة ثومسن-القوة المغناطيسية المؤثرة على التيار الكهربائي                             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث  | 2       | المعرفة النظرية والتحليل التطبيقي | العزم الدوراني                                                                         | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع  | 2       | المعرفة النظرية والتحليل التطبيقي | حل اسئلة الفصل الاول                                                                   |                            | الأسئلة المباشرة |
| الخامس  | 2       | المعرفة النظرية والتحليل التطبيقي | اجهزة قياس التيار المستمر-<br>الكلفانومتري-<br>الكلفانومتر ذو الملف المعلق             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السادس  | 2       | المعرفة النظرية والتحليل التطبيقي | اميتر التيار المستمر-فولتميتر التيار المستمر                                           | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |





|                  |                            |                                                                                                        |                                   |   |                    |
|------------------|----------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------|---|--------------------|
|                  |                            |                                                                                                        |                                   |   |                    |
|                  |                            | حل اسئلة الفصل الثاني                                                                                  |                                   | 2 | السابع             |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | المجالات المغناطيسية الناشئة عن الاسلاك الحاملة للتيار قانون بايوت وسافرت                              | المعرفة النظرية والتحليل التطبيقي | 2 | الثامن             |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | تطبيقات على قانون بايوت وسافرت- المجال المغناطيسي عن سلك مستقيم- المجال المغناطيسي الناشئ عن سلك دائري | المعرفة النظرية والتحليل التطبيقي | 2 | التاسع             |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | قانون امبير- تطبيقات على قانون امبير                                                                   | المعرفة النظرية والتحليل التطبيقي | 2 | العاشر             |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | المجال المغناطيسي لسلك طويل اسطوانتي الشكل                                                             | المعرفة النظرية والتحليل التطبيقي | 2 | الحادي عشر         |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | المجال المغناطيسي لملف حلزوني                                                                          | المعرفة النظرية والتحليل التطبيقي | 2 | الثاني عشر         |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | المجال المغناطيسي لملف حلزوني حلقي                                                                     | المعرفة النظرية والتحليل التطبيقي | 2 | الثالث عشر         |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | القوة المتبادلة بين سلكين متوازيين                                                                     | المعرفة النظرية والتحليل التطبيقي | 2 | الرابع عشر         |
|                  |                            | حل اسئلة الفصل الثالث                                                                                  |                                   | 2 | الخامس عشر         |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار | الحث الكهرومغناطيسي- قانون فاراداي- القوة الدافعة الكهربائية المحتثة الحركية- قانون لنز                | المعرفة النظرية والتحليل التطبيقي | 2 | الاسبوع السادس عشر |





|                  |                               |                                                                            |                                      |   |                               |
|------------------|-------------------------------|----------------------------------------------------------------------------|--------------------------------------|---|-------------------------------|
|                  |                               |                                                                            |                                      |   |                               |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | قياس شدة المجال<br>المغناطيسي<br>باستخدام ملف<br>البحث المولد<br>الكهربائي | المعرفة النظرية<br>والتحليل التطبيقي | 2 | الاسبوع<br>السابع<br>عشر      |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المجالات<br>المغناطيسية<br>المتغيرة                                        | المعرفة النظرية<br>والتحليل التطبيقي | 2 | الاسبوع<br>الثامن<br>عشر      |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الخاصية الحثية                                                             | المعرفة النظرية<br>والتحليل التطبيقي | 2 | الاسبوع<br>التاسع<br>عشر      |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | نمو واضمحلال<br>التيار في دائرة<br>مكونة من محث<br>ومقاومة على<br>التوالي  | المعرفة النظرية<br>والتحليل التطبيقي | 2 | الاسبوع<br>العشرون            |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الطاق المخزونة في<br>المجال المغناطيسي-<br>الحث المتبادل                   | المعرفة النظرية<br>والتحليل التطبيقي | 2 | الاسبوع<br>الحادي<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المحولة الكهربائية-<br>نقل الطاقة الى<br>مسافات بعيدة                      | المعرفة النظرية<br>والتحليل التطبيقي | 2 | الاسبوع<br>الثاني<br>والعشرون |
|                  |                               | حل اسئلة الفصل<br>الرابع                                                   |                                      | 2 | الاسبوع<br>الثالث<br>والعشرون |



|                         |   |                                   |                                                                                                  |                            |                  |
|-------------------------|---|-----------------------------------|--------------------------------------------------------------------------------------------------|----------------------------|------------------|
| الاسبوع الرابع والعشرون | 2 | المعرفة النظرية والتحليل التطبيقي | اساسيات التيار المتناوب                                                                          | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الخامس والعشرون | 2 | المعرفة النظرية والتحليل التطبيقي | الفولتية -الطور                                                                                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السادس والعشرون | 2 | المعرفة النظرية والتحليل التطبيقي | تسليط فولتية جيبيه على مقاومة خالصة تسليط فولتية على متسعة خالصة تسليط فولتية جيبيه على محث خالص | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السابع والعشرون | 2 | المعرفة النظرية والتحليل التطبيقي | القيمة الفعالة للتيار المتناوب-القيمة المتوسطة للتيار الفعالة-القدرة الكهربائية                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الثامن والعشرون | 2 | المعرفة النظرية والتحليل التطبيقي | دائرة مقاومة ملف متسعة متوالية الربط-القدرة في دائرة مقاومة ملف متسعة متوالية الربط              | المناقشة والحوار           | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 2 | المعرفة النظرية والتحليل التطبيقي | الرنين في دائرة التوالي-دائرة مقاومة ملف متسعة متوازية الربط                                     | المناقشة والحوار           | الأسئلة المباشرة |
| الاسبوع الثلاثون        | 2 |                                   | حل اسئلة الفصل الخامس                                                                            |                            |                  |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير..... الخ

#### 12. مصادر التعلم والتدريس



|                                                                  |                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        | <ul style="list-style-type: none"> <li>أساسيات الكهربائية والمغناطيسية، تأليف : يحيى عبد الحميد الحاج علي</li> </ul>                                                                                                                                          |
| المراجع الأساسية (المصادر)                                       | <p>1- مدخل إلى الكهربائية والمغناطيسية، تأليف د. منى عبد الكريم الخشاب، د. كاظم احمد محمد</p> <p>2- الكهربائية والمغناطيسية، الجزء الثاني، تأليف: إبراهيم ناصر إبراهيم<br/>أساسيات النظرية الكهرومغناطيسية ، ترجمة: يحيى عبد الحميد الحاج علي ، رحمن رستم</p> |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية                                                                                                                                  |
| المراجع الإلكترونية، مواقع الانترنت                              | مواقع الانترنت التي تخص الكهربائية والمغناطيسية                                                                                                                                                                                                               |





## نموذج وصف المقرر

|                                                                                                                                    |                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 1. اسم المقرر:                                                                                                                     |                                                                                                                |
| الصوت والحركة الموجية                                                                                                              |                                                                                                                |
| 2. رمز المقرر:                                                                                                                     |                                                                                                                |
| PHY211                                                                                                                             |                                                                                                                |
| 3. الفصل/ السنة:                                                                                                                   |                                                                                                                |
| 2026-2025                                                                                                                          |                                                                                                                |
| 4. تاريخ اعداد هذا الوصف:                                                                                                          |                                                                                                                |
| 2025/9/20                                                                                                                          |                                                                                                                |
| 5. اشكال الحضور المتاحة:                                                                                                           |                                                                                                                |
| التعليم الحضوري                                                                                                                    |                                                                                                                |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                               |                                                                                                                |
| 60 ساعة / 2 وحدات                                                                                                                  |                                                                                                                |
| 7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)                                                                                 |                                                                                                                |
| الاسم: م.م. اسلام ناصر يوسف                                                                                                        | الايميل: islam-nasser@uoahmdaniya.edu.iq                                                                       |
| 8. اهداف المقرر                                                                                                                    |                                                                                                                |
| الاهداف العامة للمادة الدراسية                                                                                                     | الاهداف المهاراتية لمادة الصوت لطلبة المرحلة الثانية في قسم الفيزياء قد تشمل ما يلي:                           |
| 1. فهم المفاهيم الخاصة بالصوت: القدرة على فهم الطبيعة الموجية للصوت والمفاهيم الاساسية مثل الموجة والتردد والطول الموجي.           |                                                                                                                |
| 2. تحليل السلوك للموجات الصوتية: فهم وتحليل سلوك الصوت وكيفية انتشاره في الاوساط المختلفة وتأثيره على الوسط المحيط.                |                                                                                                                |
| 3. فهم تطبيقات الصوت: القدرة على استيعاب وفهم تطبيقات الصوت في المجالات المختلفة مثل تكنولوجيا الصوت والفيديو، والصوتيات الصناعية. |                                                                                                                |
| 4. التفاعل: القدرة على التفاعل مع البيئة الصوتية المحيطة وتطبيقات الصوت.                                                           |                                                                                                                |
| 9. استراتيجيات التعليم والتعلم                                                                                                     |                                                                                                                |
| الاستراتيجية                                                                                                                       | 1. فهم طبيعة الموجة الصوتية وفهم أساسيات الصوت كظاهرة موجية وفهم العلاقة بين سرعة الصوت والتردد والطول الموجي. |
|                                                                                                                                    | 2. تحليل الصوت وسلوكه: المقدرة على تحليل سلوك الصوت وكيفية انعكاسه وانكساره وانتشاره وانحنائه بوجود العوائق.   |



| <p>3. تفاعل مع البيئة الصوتية: القدرة على التفاعل مع البيئة الصوتية المحيطة وتأثيرها على الإنسان والبيئة.</p> <p>4. تمكين الطالب من الحصول على المعرفة والفهم للقوانين العلمية في الفيزياء والتطبيقات العملية لعلوم الفيزياء والتحليل المنطقي والعلمي وتفسير للظواهر الفيزيائية.</p> |         |                                   |                                                                                                       |                            |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------|------------------|
| 10. بنية المقرر                                                                                                                                                                                                                                                                      |         |                                   |                                                                                                       |                            |                  |
| الأسبوع                                                                                                                                                                                                                                                                              | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة / أو الموضوع                                                                               | طريقة التعليم              | طريقة التقييم    |
| الاول                                                                                                                                                                                                                                                                                | 2       | المعرفة النظرية والتحليل التطبيقي | مفاهيم أساسية في الحركة الموجية ، وسائل انتقال الطاقة ، مميزات الحركة الموجية الميكانيكية             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني                                                                                                                                                                                                                                                                               | 2       | المعرفة النظرية والتحليل التطبيقي | أنواع الحركة الموجية ، أصناف الموجات الميكانيكية ، الخواص الأساسية لانتقال الحركة الموجية الميكانيكية | المحاضرة والمناقشة والحوار |                  |
| الثالث                                                                                                                                                                                                                                                                               | 2       | المعرفة النظرية والتحليل التطبيقي | انتقال الحركة الموجية الميكانيكية                                                                     | المحاضرة والمناقشة والحوار |                  |
| الرابع                                                                                                                                                                                                                                                                               | 2       | المعرفة النظرية والتحليل التطبيقي | الموجات في الأوتار المهتزة ، الموجات في النابض الحلزوني                                               | المحاضرة والمناقشة والحوار |                  |
| الخامس                                                                                                                                                                                                                                                                               | 2       | المعرفة النظرية والتحليل التطبيقي | الموجات على سطح سائل ، الموجات الصوتية                                                                | المحاضرة والمناقشة والحوار |                  |



|            |   |                                      |                                                                                                        |                                  |
|------------|---|--------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------|
| السادس     | 2 | المعرفة النظرية<br>والتحليل التطبيقي | شرح مبسط على المكبس<br>، خواص الموجات<br>الصوتية في المكبس                                             | المحاضرة<br>والمناقشة<br>والحوار |
| السابع     | 2 | المعرفة النظرية<br>والتحليل التطبيقي | سرعة الموجة وسرعة<br>الجسيم ، التمثيل<br>الرياضي للحركة<br>الموجية                                     | المحاضرة<br>والمناقشة<br>والحوار |
| الثامن     | 2 | المعرفة النظرية<br>والتحليل التطبيقي | نظرية الاهتزاز الحر ،<br>الحركة الاهتزازية ،<br>الحركة التوافقية البسيطة                               | المحاضرة<br>والمناقشة<br>والحوار |
| التاسع     | 2 | المعرفة النظرية<br>والتحليل التطبيقي | معادلة الحركة التوافقية<br>الخطية ، طاقة المهتز<br>التوافقي البسيط ،<br>متوسط الطاقة الحركية<br>للمهتز | المحاضرة<br>والمناقشة<br>والحوار |
| العاشر     | 2 | المعرفة النظرية<br>والتحليل التطبيقي | تطبيقات الحركة التوافقية<br>البسيطة ، البندول<br>البسيط ، الجسم الطافي                                 | المحاضرة<br>والمناقشة<br>والحوار |
| الحادي عشر | 2 | المعرفة النظرية<br>والتحليل التطبيقي | سائل في انبوبة على<br>شكل حرف U ، الاهتزاز<br>المستعرض لجسيم في<br>وسط سلك متوتر                       | المحاضرة<br>والمناقشة<br>والحوار |
| الثاني عشر | 2 | المعرفة النظرية<br>والتحليل التطبيقي | الاهتزاز الطولي لجسم<br>موضوع بين نابضين<br>متماثلين ، اهتزاز<br>المكبس في أسطوانة<br>تحتوي على غاز    | المحاضرة<br>والمناقشة<br>والحوار |
| الثالث عشر | 2 | المعرفة النظرية<br>والتحليل التطبيقي | المرنان ، نظرية المرنان                                                                                | المحاضرة<br>والمناقشة<br>والحوار |





|                               |   |                                      |                                                                                    |                                  |
|-------------------------------|---|--------------------------------------|------------------------------------------------------------------------------------|----------------------------------|
| الرابع<br>عشر                 | 2 | المعرفة النظرية<br>والتحليل التطبيقي | الحركة التوافقية الزاوية<br>البسيطة ، بندول اللي                                   | المحاضرة<br>والمناقشة<br>والحوار |
| الخامس<br>عشر                 | 2 | المعرفة النظرية<br>والتحليل التطبيقي | البندول المركب                                                                     | المحاضرة<br>والمناقشة<br>والحوار |
| الاسبوع<br>السادس<br>عشر      | 2 | المعرفة النظرية<br>والتحليل التطبيقي | تركيب الحركات التوافقية<br>البسيطة ، مبدأ التراكب                                  | المحاضرة<br>والمناقشة<br>والحوار |
| الاسبوع<br>السابع<br>عشر      | 2 | المعرفة النظرية<br>والتحليل التطبيقي | نتائج تركيب الحركتين<br>التوافقيتين الاتيتين                                       | المحاضرة<br>والمناقشة<br>والحوار |
| الاسبوع<br>الثامن<br>عشر      | 2 | المعرفة النظرية<br>والتحليل التطبيقي | تركيب حركتين توافقيتين<br>بسيطتين في اتجاهين<br>متعامدين ، اشكال<br>ليساجو ،       | المحاضرة<br>والمناقشة<br>والحوار |
| الاسبوع<br>التاسع<br>عشر      | 2 | المعرفة النظرية<br>والتحليل التطبيقي | الطريقة البيانية لتركيب<br>حركتين توافقيتين<br>متعامدتين لهما نفس<br>التردد الزاوي | المحاضرة<br>والمناقشة<br>والحوار |
| الاسبوع<br>العشرون            | 2 | المعرفة النظرية<br>والتحليل التطبيقي | تركيب حركتين<br>متعامدتين نسبة تردد<br>احدهما ضعف الاخر                            | المحاضرة<br>والمناقشة<br>والحوار |
| الاسبوع<br>الحادي<br>والعشرون | 2 | المعرفة النظرية<br>والتحليل التطبيقي | الضربات                                                                            | المحاضرة<br>والمناقشة<br>والحوار |
| الاسبوع<br>الثاني<br>والعشرون | 2 | المعرفة النظرية<br>والتحليل التطبيقي | الاهتزاز المضمحل ،<br>القوة المسببة<br>للاضمحل                                     | المحاضرة<br>والمناقشة<br>والحوار |

امتحان شهري



|                                                                                                                                             |   |                                   |                                                                                        |                  |
|---------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------|----------------------------------------------------------------------------------------|------------------|
| الاسبوع الثالث والعشرون                                                                                                                     | 2 | المعرفة النظرية والتحليل التطبيقي | معادلة الحركة المضمحلة ، حل معادلة الحركة التوافقية المضمحلة                           | المناقشة والحوار |
| الاسبوع الرابع والعشرون                                                                                                                     | 2 | المعرفة النظرية والتحليل التطبيقي | حالات الاضمحلال : انعدام الاضمحلال ، تناقص الاضمحلال ، تزايد الاضمحلال ، الحالة الحرجة | المناقشة والحوار |
| الاسبوع الخامس والعشرون                                                                                                                     | 2 | المعرفة النظرية والتحليل التطبيقي | مقاييس الاضمحلال : التناقص اللوغارتمي ، زمن الاسترخاء ، معامل النوعية                  | المناقشة والحوار |
| الاسبوع السادس والعشرون                                                                                                                     | 2 | المعرفة النظرية والتحليل التطبيقي | الاهتزاز القسري                                                                        | المناقشة والحوار |
| الاسبوع السابع والعشرون                                                                                                                     | 2 | المعرفة النظرية والتحليل التطبيقي | الموجات المستعرضة في بعد واحد                                                          | المناقشة والحوار |
| الاسبوع الثامن والعشرون                                                                                                                     | 2 | المعرفة النظرية والتحليل التطبيقي | الموجات الطولية (الموجات الصوتية)                                                      | المناقشة والحوار |
| الاسبوع التاسع والعشرون                                                                                                                     | 2 | المعرفة النظرية والتحليل التطبيقي | اعتبارات عامة في الصوت والظاهرة الموجية                                                | المناقشة والحوار |
| الاسبوع الثلاثون                                                                                                                            | 2 | المعرفة النظرية والتحليل التطبيقي | الموجات فوق السمعية وتطبيقاتها                                                         | المناقشة والحوار |
| 11. تقييم المقرر                                                                                                                            |   |                                   |                                                                                        |                  |
| توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير .... الخ |   |                                   |                                                                                        |                  |
| 12. مصادر التعلم والتدريس                                                                                                                   |   |                                   |                                                                                        |                  |



|                                                                  |                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| أكتب المقررة المطلوبة (المنهجية ان وجدت)                         | الصوت والحركة الموجية / تأليف امجد عبدالرزاق كرجية                                                                           |
| المراجع الاساسية (المصادر)                                       | فيزياء الصوت والحركة الموجية / تأليف د. مصطفى امين مصطفى                                                                     |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعة المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الإلكترونية، مواقع الانترنت                              | مواقع الانترنت التي تخص الصوت والحركة الموجية                                                                                |







## نموذج وصف المقرر

|                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. اسم المقرر:                                       | البصريات                                                                                                                                                                                                                                                                                                                                                                                              |
| 2. رمز المقرر:                                       | PHY208                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. الفصل/ السنة:                                     | 2026-2025                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. تاريخ اعداد هذا الوصف:                            | 2025/9/24                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. اشكال الحضور المتاحة:                             | التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي) | 90 ساعة/ 7 وحدات                                                                                                                                                                                                                                                                                                                                                                                      |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)   | الاسم: م.م. شيماء هيثم زكي<br>الايمل: haimahaithemalkady@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                           |
| 8. اهداف المقرر                                      | اهداف المادة الدراسية<br>هذه دورة تمهيدية في البصريات الهندسية والموجية، مع التركيز على المفاهيم والمبادئ والتقنيات الأساسية.<br>1- تقدم الدورة الاولى أساسيات الكهرومغناطيسية، والمرآيا، والعدسات، والمرآيا السميكة، والعدسات السميكة، والزيغ في المرآيا والعدسات.<br>2- تغطي الدورة الثانية البصريات الموجية، مع التركيز على التداخل وتجاريه، والحيود وتجاريه، والاستقطاب وأنواعه وطرق الحصول عليه. |
| 9. استراتيجيات التعليم والتعلم                       | الاستراتيجية<br>النتائج المرجوة من الدورة<br>1- القدرة على شرح النظريات التي تحكم طبيعة الضوء .<br>2- القدرة على شرح خصائص الصورة حسابيًا وبيانيًا.<br>3- القدرة على التمييز بين أنواع العدسات المختلفة.                                                                                                                                                                                              |



| <p>4- القدرة على وصف التداخل والحيود، بالإضافة إلى طريقة الحصول عليهما.</p> <p>5- القدرة على وصف الضوء المستقطب وغير المستقطب.</p> <p>6- القدرة على وصف نوع الضوء المستقطب.</p> <p>7- القدرة على وصف طرق الحصول على الضوء المستقطب</p> |         |                                                                             |                         |                            |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------|-------------------------|----------------------------|------------------|
| 10. بنية المقرر                                                                                                                                                                                                                        |         |                                                                             |                         |                            |                  |
| الاسبوع                                                                                                                                                                                                                                | الساعات | مخرجات التعلم المطلوبة                                                      | اسم الوحدة او الموضوع   | طريقة التعلم               | طريقة التقييم    |
| الاسبوع                                                                                                                                                                                                                                | الساعات | مخرجات التعلم المطلوبة                                                      | اسم الوحدة / أو الموضوع | طريقة التعليم              | طريقة التقييم    |
| الاول                                                                                                                                                                                                                                  | 3       | عرض منهج المادة، مقدمة في الفيزياء البصرية                                  | التركيب البلوري         | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني                                                                                                                                                                                                                                 | 3       | مفهوم شعاع الضوء، فيزياء الضوء وخصائصه، موجات الضوء، الموجة الكهرومغناطيسية | وحدة الخلية             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث                                                                                                                                                                                                                                 | 3       | الموجات، أنواع الموجات، الموجة الكهرومغناطيسية، المفردات، التعاريف،         | معاملات ميلر            | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع                                                                                                                                                                                                                                 | 3       | أنواع الموجات الكهرومغناطيسية، الموجة، الموجات الطولية، الموجات المستعرضة،  | الحيود                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الخامس                                                                                                                                                                                                                                 | 3       | الأمشاط الكهرومغناطيسية، الطول الموجي، التردد،                              | طرق الحيود              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السادس                                                                                                                                                                                                                                 | 3       | سرعة الضوء ومعامل الانكسار، أمثلة على الحل                                  | الشبيكة المقلوبة        | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السابع                                                                                                                                                                                                                                 | 3       | الامتحان                                                                    |                         |                            |                  |
| الثامن                                                                                                                                                                                                                                 | 3       | انتشار الضوء، الانعكاس، قوانين الانعكاس،                                    | ديناميكية الشبيكة       | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |





|                  |                               |                      |                                                                                 |   |                    |
|------------------|-------------------------------|----------------------|---------------------------------------------------------------------------------|---|--------------------|
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | اهتزاز الشبكة        | الانعكاس المنتظم والانعكاس غير المنتظم للضوء، المرايا المستوية، H.W             | 3 | التاسع             |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | نظرية الانطقة        | الانكسار، قانون انكسار الضوء، الانعكاس الداخلي الكلي، أمثلة على الحل            | 3 | العاشر             |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الثنائي البلوري      | المرآة المقعرة، المرآة المحدبة، معادلة المرآة الكروية، أمثلة على الحل           | 3 | الحادي عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | اشباه الموصلات       | مبدأ الانعكاسية، مبدأ هيرما، السطح الكروي، المرايا الكروية                      | 3 | الثاني عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | انواع اشباه الموصلات | الامتحان                                                                        | 3 | الثالث عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار |                      | العدسات، انواع العدسات                                                          | 3 | الرابع عشر         |
|                  |                               |                      | مخططات أشعة العدسات، تكوين الصورة بالعدسة المحدبة، تكوين الصورة بالعدسة المقعرة | 3 | الخامس عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | اجهزة اشباه الموصلات | العدسات، انواع العدسات، المحدبة عدسة، عدسات مقعرة                               | 3 | الاسبوع السادس عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | ليزر اشباه الموصلات  | عيوب العدسات الكروية، انواع الزيغ، الزيغ الكروي، الزيغ اللونى،                  | 3 | الاسبوع السابع عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المواد النانوية      | الأجهزة البصرية، تطبيقات العدسات، العدسات في العين                              | 3 | الاسبوع الثامن عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | خواص المواد النانوية | مركز الصور، تصحيح الرؤية، قصر النظر ومد النظر                                   | 3 | الاسبوع التاسع عشر |
| الأسئلة المباشرة | المحاضرة                      | العيوب البلورية      | الاستقطاب، التلصوب الكاسرة المعاصر                                              | 3 | الاسبوع            |



|                               |   |                                                                       |                       |                               |                  |
|-------------------------------|---|-----------------------------------------------------------------------|-----------------------|-------------------------------|------------------|
| العشرون                       |   |                                                                       |                       | والمناقشة والحوار             |                  |
| الاسبوع<br>الحادي<br>والعشرون | 3 | الامتحان،                                                             | انواع العيوب          | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>الثاني<br>والعشرون | 3 | مثلة على حل مسائل تداخل وجود<br>الموجة، تداخل الشقين.                 | العيوب السطحية        | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>الثالث<br>والعشرون | 3 | الموجات المتماثلة، قياس الطول<br>الموجي للضوء، أمثلة على حل<br>مسائل. |                       |                               |                  |
| الاسبوع<br>الرابع<br>والعشرون | 3 | حيود الضوء، حيود الشق الواحد،<br>نمط الحيود، أمثلة على حل<br>مسائل.   | فرط الايصال           | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>الخامس<br>والعشرون | 3 | محزات الحيود، قياس الطول<br>الموجي.                                   | تأثير جوزيفسون        | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>سادس<br>والعشرون   | 3 | أمثلة على حل مسائل.                                                   | الالكترونيات الحرة    | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>السابع             | 3 | قوة تحليل الحساسات معيار رالي                                         | احصاء فيرمي-<br>ديراك | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |





|                         |   |              |                  |                  |
|-------------------------|---|--------------|------------------|------------------|
| والعشرون                |   |              |                  |                  |
| الاسبوع الثامن والعشرون | 3 | الاستقطاب    | المناقشة والحوار | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 3 | مراجعة مقالة | المناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الثلاثون        | 3 | الامتحان     |                  |                  |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس

|                                                                  |                                                                                                                                                                                            |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        | اساسيات البصريات: 1- ف. ا. جينكينز و هر. اي. وايت، ماكجرو هيل<br>براهمال للنشر المخصص، 2001                                                                                                |
| المراجع الاساسية (المصادر)                                       | 2- مبادئ البصريات وتطبيقاتها، شارما ٢٠٠٦<br>2- حايلاز ف. كلاين وتوماس اي. فورتاك، البصريات، الطبعة الثانية، ١٩٨٦                                                                           |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | ١- البصريات: المبادئ والتطبيقات، دار نشر إلسفير (٢٠٠٦)<br>٢- البصريات، الطبعة الرابعة، دار نشر أديسون ويسلي (٢٠٠٢)<br>٣- البصريات الحديثة، الطبعة الأولى، دار نشر جون وايلي وأولاده (١٩٩٠) |
| المراجع الالكترونية، مواقع الانترنت                              | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمي                                                                |





## نموذج وصف المقرر

### وصف المقرر

|                                                                                                                                                                                                                                                            |                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <p>وفّر وصف المقرر هذا إيجازاً مقتضياً لأهم خصائص المقرر ومخرجات المقرر ومخرجات التعلم المتوقعة من طالب تحقيقها مبهرنا عما إذا كان قد حقق الاستفادة من فرص التعلم المتاحة . ولا بد من الربط بينها وبين وصف البرنامج ؛</p>                                  |                                       |
| 1- اسم المقرر                                                                                                                                                                                                                                              |                                       |
| تعليم التفكير                                                                                                                                                                                                                                              |                                       |
| 2- رمز المقرر                                                                                                                                                                                                                                              |                                       |
| EPS206                                                                                                                                                                                                                                                     |                                       |
| 3- الفصل / السنة                                                                                                                                                                                                                                           |                                       |
| 2026-2025                                                                                                                                                                                                                                                  |                                       |
| 4- تاريخ إعداد هذا الوصف                                                                                                                                                                                                                                   |                                       |
| 2025/9/21                                                                                                                                                                                                                                                  |                                       |
| 5- أشكال الحضور المتاحة                                                                                                                                                                                                                                    |                                       |
| لتعليم الحضور                                                                                                                                                                                                                                              |                                       |
| 6- عدد الساعات الدراسية (الكلّي / عدد الوحدات) (الكلّي)                                                                                                                                                                                                    |                                       |
| 30 ساعة - 1 وحدة                                                                                                                                                                                                                                           |                                       |
| 7- اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                         |                                       |
| لاسم: م.م. مريم يلدا متي                                                                                                                                                                                                                                   |                                       |
| الايمل <a href="mailto:maryamyaldoka@uohamdaniya.edu.iq">maryamyaldoka@uohamdaniya.edu.iq</a>                                                                                                                                                              |                                       |
| 8- أهداف المقرر                                                                                                                                                                                                                                            |                                       |
| <p>1. تعريف الطلبة بأهمية تعليم التفكير</p> <p>2. تعريف الطلبة بأهداف تعليم التفكير</p> <p>3. تمكين الطلبة من تعرف أنواع التفكير</p> <p>4. التعرف على مهارات التفكير</p>                                                                                   | <p>9- استراتيجيات التعليم والتعلم</p> |
| <p>1- الحوار والمناقشة وطرح الأفكار والسؤال</p> <p>2- التعليم التعاوني</p> <p>3- الحلقات التعليمية-سيمنار</p> <p>4- التعليم الجماعي</p> <p>5- التدريب الفردي للطلبة على المهارات الأساسية</p> <p>6- الاختبار التحريري</p> <p>7- الواجب والأنشطة الصفية</p> | <p>الاستراتيجية</p>                   |
| 10- بنية المقرر                                                                                                                                                                                                                                            |                                       |



| الأسبوع | الساعات    | مخرجات التعليم المطلوبة                       | اسم الوحدة او الموضوع               | طريقة التعليم          | طريقة التقييم                |
|---------|------------|-----------------------------------------------|-------------------------------------|------------------------|------------------------------|
| 1       | ساعة واحدة | تعريف الطالب بالتفكير                         | التطور التاريخي لتعليم التفكير      | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 2       | ساعة واحدة | تعريف الطالب بمعايير عالمية التفكير           | تعريف التفكير ووظيفته               | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 3       | ساعة واحدة | تعريف الطالب بأهمية التفكير واليات التذكر     | خصائص عملية التفكير وأنواعه         | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 4       | ساعة واحدة | تعريف الطالب بمعوقات التفكير                  | أهمية تعليم التفكير                 | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 5       | ساعة واحدة | تعريف الطالب بأنواع التفكير                   | اتجاهات تعليم التفكير               | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 6       | ساعة واحدة | تمكين الطلبة من طرائق تعليم التفكير           | مهارات التعليم الأساسية             | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 7       | ساعة واحدة | اهمية مفهوم مهارات التفكير                    | عمليات التفكير                      | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 8       | ساعة واحدة | تعريف الطلبة كيفية تصنيف مهارات تعليم التفكير | عوامل نجاح تعليم التفكير            | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 9       | ساعة واحدة | تعريف الطالب بالتفكير                         | معوقات تعليم التفكير                | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 10      | ساعة واحدة | تعريف الطالب بمعايير عالمية التفكير           | طريقة وأسلوب لتنمية التفكير         | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 11      | ساعة واحدة | تعريف الطالب بأهمية التفكير واليات التذكر     | اتجاهات تعليم التفكير واستراتيجياته | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 12      | ساعة واحدة | تعريف الطالب بمعوقات التفكير                  | أنماط التفكير                       | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |





|    |            |                                                                                                                                 |                                      |                        |                              |
|----|------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------|------------------------------|
| 13 | ساعة واحدة | تعريف الطالب بأنواع التفكير                                                                                                     | التفكير الناقد                       | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 14 | ساعة واحدة | تمكين الطلبة من طرائق تعليم التفكير<br>اهمية مفهوم مهارات التفكير                                                               | التفكير الإبداعي وحل المشكلات        | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 15 | ساعة واحدة | امتحان الفصل الاول                                                                                                              | -----                                | -----                  | مناقشات جماعية واسئلة مباشرة |
| 16 | ساعة واحدة | التفكير، ماهية التفكير ، كيف تتم عملية التفكير ، المكونات (الواقع ،الدماغ ،الحواس ،المعلومات والخبرات السابقة)                  | التفكير السابر                       | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 17 | ساعة واحدة | معايير عالمية التفكير (الوضوح ،الصحة ،الدقة ،العلاقة ،العمق ،الاتساع ،المنطقية)                                                 | التفكير الخوقي المعرفي               | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 18 | ساعة واحدة | اهمية التفكير واليات التذكر                                                                                                     | التفكير المنتج                       | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 19 | ساعة واحدة | معارف التفكير                                                                                                                   | برامج تعليم التفكير                  | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 20 | ساعة واحدة | التفكير، ماهية التفكير ، كيف تتم عملية التفكير ، المكونات (الواقع ،الدماغ ،الحواس ،المعلومات والخبرات السابقة)                  | برنامج الكورد                        | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 21 | ساعة واحدة | معايير عالمية التفكير (الوضوح ،الصحة ،الدقة ،العلاقة ،العمق ،الاتساع ،المنطقية)                                                 | برنامج الفبعات الست                  | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 22 | ساعة واحدة | اهمية التفكير واليات التذكر                                                                                                     | برنامج ترويز                         | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 23 | ساعة واحدة | انواع التفكير (التفكير التقاربي ، التباعدي، الاستقرائي ، الاستنتاجي ،المنطقي ،المحسوس ،الابتكاري ، الناقد، الابتداعي<br>000000) | طرق وأساليب لتنمية التفكير           | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 24 | ساعة واحدة | طرائق تعليم التفكير                                                                                                             | أسلوب أنشطة التفكير<br>حدائق الأفكار | المناقشة وتبادل الآراء | مناقشات جماعية واسئلة مباشرة |
| 25 | ساعة واحدة | تعريف الطالب بأنواع مهارات التفكير                                                                                              | تطبيقات عملية                        | المناقشة وتبادل الآراء | مناقشات جماعية               |





|    |            |                                           |                             |                        |                                       |
|----|------------|-------------------------------------------|-----------------------------|------------------------|---------------------------------------|
| 26 | ساعة واحدة | تعريف الطالب بمهارات الطلاقة              | العصف الذهني-<br>تطبيق عملي | المناقشة وتبادل الآراء | مناقشات<br>جماعية<br>واسئلة<br>مباشرة |
| 27 | ساعة واحدة | تعريف الطالب بمهارة حل المشكلات           | تألف الاثنان                | المناقشة وتبادل الآراء | مناقشات<br>جماعية<br>واسئلة<br>مباشرة |
| 28 | ساعة واحدة | تعريف الطالب بمهارة تقييم الدليل          | تطبيقات عملية               | المناقشة وتبادل الآراء | مناقشات<br>جماعية<br>واسئلة<br>مباشرة |
| 29 | ساعة واحدة | تعريف الطالب بمهارات عمل الخيارات الشخصية | الخرائط الذهنية             | المناقشة وتبادل الآراء | مناقشات<br>جماعية<br>واسئلة<br>مباشرة |
| 30 | ساعة واحدة | امتحان الفصل النهائي                      | -----                       | -----                  | -----                                 |

#### 1-تقييم المقرر

وزيع الدرجة من 100 على وفق المهام المكلف به الطالب مثل:-

لتحضير اليومى الامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.....

#### 2-مصادر التعليم والتدريس

|                                                          |                                                                                            |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة                                   | أبو جادو، صالح، نوفل، محمد بكر، 2007، تعليم التفكير - النظرية والتطبيق، دار المسيرة للنشر. |
| المراجع الرئيسية (المصادر)                               | تعليم التفكير سما تركي داخل وآخرون                                                         |
| لكتب والمراجع التي يوصي بها ( المجلات العلمية , لتقارير) | فتحي عبد الرحمن، ط، 2020، 11، تعليم التفكير- مفاهيم وتطبيقات، دار الفكر -ناشرون-بيروت.     |
| لمراجع الالكترونية -مواقع الانترنت                       |                                                                                            |



نموذج وصف المقرر  
الجامعة : الحمدانية      الكلية : التربية للعلوم الصرفة      القسم او الفرع : الفيزياء

|                                                                                                                                                                                                                                                    |                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 1. اسم المقرر                                                                                                                                                                                                                                      |                                                                                                                    |
| المناهج والكتب المدرسية                                                                                                                                                                                                                            |                                                                                                                    |
| 2. رمز المقرر                                                                                                                                                                                                                                      |                                                                                                                    |
| EPS207                                                                                                                                                                                                                                             |                                                                                                                    |
| 3. الفصل / السنة                                                                                                                                                                                                                                   |                                                                                                                    |
| 2026-2025                                                                                                                                                                                                                                          |                                                                                                                    |
| 4. تاريخ إعداد هذا الوصف                                                                                                                                                                                                                           |                                                                                                                    |
| 2025/9/23                                                                                                                                                                                                                                          |                                                                                                                    |
| 5. أشكال الحضور المتاحة                                                                                                                                                                                                                            |                                                                                                                    |
| حضوري                                                                                                                                                                                                                                              |                                                                                                                    |
| 6. عدد الساعات الدراسية (الكلي) / عدد الوحدات (الكلي)                                                                                                                                                                                              |                                                                                                                    |
| 28 ساعة                                                                                                                                                                                                                                            |                                                                                                                    |
| 7. اسم مسؤول المقرر الدراسي ( إذا أكثر من اسم يذكر )                                                                                                                                                                                               |                                                                                                                    |
| الاسم: م.م. إلهام عبد الصمد محمد                                                                                                                                                                                                                   | الأيمل<br><a href="mailto:elhamabdulsamad@uohamdaniya.edu.iq">elhamabdulsamad@uohamdaniya.edu.iq</a>               |
| 8. اهداف المقرر                                                                                                                                                                                                                                    |                                                                                                                    |
| <ul style="list-style-type: none"> <li>• الهدف العام: تعرف الطلبة على انواع المناهج الدراسية وأهميتها واسس اعتمادها وتصميمها والكتب المدرسية وكيفية تصميمها.</li> <li>• الهدف الخاص:</li> <li>1. تعرف الطلبة على مفهوم المناهج الدراسية</li> </ul> | <p>اهداف المادة الدراسية</p>  |

|                                |  |
|--------------------------------|--|
| 2. أنواع المناهج الدراسية      |  |
| 3. أسس تصميمها                 |  |
| 4. تقويم المناهج الدراسية      |  |
| 5. الكتب المدرسية              |  |
| 6. تحليل الكتب المدرسية        |  |
| 7. معايير تصميم الكتب المدرسية |  |
| 8. الكتب الإلكترونية           |  |
| 9. تدريبات ونشاطات عملية       |  |

### 9. استراتيجيات التعليم والتعلم

|              |                                                                                             |
|--------------|---------------------------------------------------------------------------------------------|
| الاستراتيجية | المحاضرة - الاستجواب - المناقشة - الاستقراء - التعلم التعاوني - العصف الذهني - التعلم النشط |
|--------------|---------------------------------------------------------------------------------------------|

### 10. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة                                                                       | اسم الوحدة او الموضوع  | طريقة التعلم                   | طريقة التقييم         |
|---------|---------|----------------------------------------------------------------------------------------------|------------------------|--------------------------------|-----------------------|
| 1       | 3       | المناهج: مفهومها - خصائصها - أهميتها.                                                        | المناهج الدراسية       | المحاضرة                       | امتحان يومي           |
| 2       | 3       | أسس المناهج: الأساس الفلسفي (الفكري) - الأساس الثقافي (الاجتماعي) - الأساس النفسي (النمائي). | أسس المناهج            | المحاضرة - المناقشة            | طرح الاسئلة والمناقشة |
| 3       | 3       | عناصر المنهج المدرسي: الأهداف التربوية - المحتوى التعليمي.                                   | عناصر المنهج           | المحاضرة - العصف الذهني        | اختبار شفهي           |
| 4       | 3       | نشاط عملي: اهداف تدريس الرياضيات العامة والسلوكية                                            | نشاط عملي              | التعلم التعاوني - التعلم النشط | تقارير جماعية         |
| 5       | 3       | أنواع المناهج الدراسية: منهج المواد الدراسية - منهج النشاط - المنهج المحوري.                 | أنواع المناهج الدراسية | المحاضرة - الاستقراء           | التفاعل الصفّي        |
| 6       |         | نشاط عملي تعاوني                                                                             | تصميم وحدة لمنهج       | التعلم التعاوني                | التقارير              |



|              |                            |                                     |                                                                                                                                                 |   |    |
|--------------|----------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---|----|
|              |                            | الرياضيات وفق احدى<br>أنواع التصميم |                                                                                                                                                 |   |    |
|              |                            | اختبار تحريري I                     | اختبار تحريري                                                                                                                                   | 3 | 7  |
| واجبات فردية | المحاضرة -<br>العصف الذهني | تقويم المناهج الدراسية              | تقويم المناهج الدراسية:<br>مفهوم تقويم المنهج -<br>أهداف تقويم المنهج<br>- معايير التقويم -<br>طرق التقويم -<br>خطوات التقويم.                  | 3 | 8  |
| واجبات فردية | التعلم النشط               | نشاط عملي                           | نشاط عملي فردي لتقويم<br>مناهج الأول المتوسط                                                                                                    | 3 | 9  |
| واجبات فردية | التعلم النشط               | نشاط عملي                           | نشاط عملي فردي لتقويم<br>مناهج الثاني المتوسط                                                                                                   | 3 | 10 |
| واجبات فردية | التعلم النشط               | نشاط عملي                           | نشاط عملي فردي لتقويم<br>مناهج الثالث المتوسط                                                                                                   | 3 | 11 |
| واجبات فردية | التعلم النشط               | نشاط عملي                           | نشاط عملي فردي لتقويم<br>مناهج الرابع العلمي                                                                                                    | 3 | 12 |
| واجبات فردية | التعلم النشط               | نشاط عملي                           | نشاط عملي فردي لتقويم<br>مناهج الخامس العلمي                                                                                                    | 3 | 13 |
| واجبات فردية | التعلم النشط               | نشاط عملي                           | نشاط عملي فردي لتقويم<br>مناهج السادس العلمي                                                                                                    | 3 | 14 |
| اختبار يومي  | المحاضرة -<br>الاستجواب    | تطوير المناهج الدراسية              | تطوير المناهج الدراسية<br>ونماذج: مفهوم<br>تطوير المنهج -<br>دوافع تطوير المنهج<br>- مبادئ تطوير<br>المنهج - نماذج<br>أساسية لتطوير<br>المناهج. |   | 15 |
| واجبات فردية | التعلم النشط               | نشاط عملي                           | نشاط عملي جماعي<br>لتطوير مناهج<br>الرياضيات للمرحلة<br>المتوسطة                                                                                |   | 16 |

|                |                               |                                                     |                                                                                                       |   |    |
|----------------|-------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------|---|----|
| واجبات فردية   | التعلم النشط                  | نشاط عملي                                           | نشاط عملي جماعي<br>لتطوير مناهج<br>الرياضيات للمرحلة<br>الاعدادية                                     | 3 | 17 |
| تقارير مشتركة  | التعلم التعاوني -<br>المحاضرة | عرض التجارب                                         | تجارب عالمية في<br>تطوير المناهج                                                                      | 3 | 18 |
| تقارير مشتركة  | التعلم التعاوني               | مقارنة بين بعض المناهج<br>العالمية ومناهجنا المحلية | تدريب                                                                                                 |   | 19 |
| اختبارات يومية | المحاضرة -<br>المناقشة        | الكتاب المدرسي                                      | الكتاب المدرسي:<br>مفهومه - أهميته -<br>الكتاب المنهجي<br>الورقي - تقويم<br>الكتاب المدرسي<br>وتطويره | 3 | 20 |
| واجبات فردية   | التعلم النشط                  | نشاط عملي                                           | نشاط عملي: تحليل كتب<br>الاول المتوسط                                                                 | 3 | 21 |
| واجبات فردية   | التعلم النشط                  | نشاط عملي                                           | نشاط عملي: تحليل كتب<br>الثاني المتوسط                                                                |   | 22 |
| واجبات فردية   | التعلم النشط                  | نشاط عملي                                           | نشاط عملي: تحليل كتب<br>الثالث المتوسط                                                                |   | 23 |
| واجبات فردية   | التعلم النشط                  | نشاط عملي                                           | نشاط عملي: تحليل كتب<br>الرابع الاعدادي                                                               | 3 | 24 |
| واجبات فردية   | التعلم النشط                  | نشاط عملي                                           | نشاط عملي: تحليل كتب<br>الخامس الاعدادي                                                               |   | 25 |
| واجبات فردية   | التعلم النشط                  | نشاط عملي                                           | نشاط عملي: تحليل كتب<br>السادس الاعدادي                                                               |   | 26 |
| التفاعل الصفّي | المحاضرة -<br>المناقشة        | الكتاب الالكتروني                                   | الكتاب الالكتروني:<br>أهميته - مميزاته -<br>عيوبه - تطويره                                            | 3 | 27 |
| التفاعل الصفّي | المحاضرة -<br>المناقشة        | الكتاب الالكتروني                                   | نشاط عملي كتب<br>الالكترونية للمرحلة<br>المتوسطة                                                      | 3 | 28 |



|                                                                                                                                             |   |                                                |                                                                                                                                                                                                                                                |                        |               |
|---------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|
| 29                                                                                                                                          | 3 | نشاط عملي كتب<br>الكثرونية للمرحلة<br>المتوسطة | الكتاب الالكتروني                                                                                                                                                                                                                              | المحاضرة -<br>المناقشة | التفاعل الصفی |
| 30                                                                                                                                          | 3 | اختبار تحريري                                  | اختبار تحريري II                                                                                                                                                                                                                               |                        |               |
| 11. تقييم المقرر                                                                                                                            |   |                                                |                                                                                                                                                                                                                                                |                        |               |
| توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشهوية والشهرية والتحريرية والتقارير .... الخ |   |                                                |                                                                                                                                                                                                                                                |                        |               |
| 12. مصادر التعلم والتدريس                                                                                                                   |   |                                                |                                                                                                                                                                                                                                                |                        |               |
| الكتب المقررة المطلوبة ( المنهجية أن وجدت )                                                                                                 |   |                                                |                                                                                                                                                                                                                                                |                        |               |
| المراجع الرئيسية ( المصادر )                                                                                                                |   |                                                |                                                                                                                                                                                                                                                |                        |               |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية،<br>التقارير .... )                                                                   |   |                                                | <ul style="list-style-type: none"> <li>• الوكيل، حلمي والمفتي، محمد (2011). أسس بناء المنهج وتنظيماتها، عمان: دار المسيرة.</li> <li>• مرعي، توفيق والحيلة، محمد (2011). المناهج التربوية الحديثة. عمان: دار المسيرة للنشر والتوزيع.</li> </ul> |                        |               |
| المراجع الإلكترونية ، مواقع الانترنت                                                                                                        |   |                                                |                                                                                                                                                                                                                                                |                        |               |

اسم وتوقيع رئيس القسم او

اسم وتوقيع صاحب المقرر  
الفرع





## بـانـمـوـذـج وـصـف المـقـرـر

|                                                                                                                              |                                        |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| 1. اسم المقرر                                                                                                                |                                        |
| القيادة والإدارة التربوية                                                                                                    |                                        |
| 2. رمز المقرر                                                                                                                |                                        |
| EPS205                                                                                                                       |                                        |
| 3. الفصل / السنة                                                                                                             |                                        |
| 2025 - 2026                                                                                                                  |                                        |
| 4. تاريخ إعداد هذا الوصف                                                                                                     |                                        |
| 18/9/2025                                                                                                                    |                                        |
| 5. أشكال الحضور المتاحة                                                                                                      |                                        |
| حضور                                                                                                                         |                                        |
| 6. عدد الساعات الدراسية (الكلية / عدد الوحدات) (الكلية)                                                                      |                                        |
| 2 / العدد الكلية (50) (4)                                                                                                    |                                        |
| 7. اسم مسؤول المقرر الدراسي ( إذا أكثر من اسم يذكر)                                                                          |                                        |
| م.م. مهند أحمد سلطان                                                                                                         | الايمل: mohand.1993@uohamdaniya.edu.iq |
| 8. أهداف المقرر                                                                                                              |                                        |
| 1. تعريف الطلبة بأهمية الإدارة التربوية                                                                                      |                                        |
| 2. تعريف الطلبة بمبادئ الإدارة التربوية                                                                                      |                                        |
| 3. تمكين الطلبة من الإدارة التربوية والإدارة التعليمية والإدارة المدرسية والإدارة الصفية والإشراف التربوي والعمليات الإدارية |                                        |
| 4. التعرف على الاتجاهات الحديثة في الإدارة التربوية                                                                          |                                        |
| 5. تمكين الطلبة من كيفية التعامل مع مختلف المشكلات الإدارية التي ربما قد تواجههم، وحلها بأسلوب إداري                         |                                        |
| 6. تكوين لديهم شخصية قيادية إدارية ناجحة.                                                                                    | تربوي.                                 |
| 9. استراتيجيات التعلم والتعليم                                                                                               |                                        |
| 1. المناقشة وطرح الأفكار والأمثال، طريقة المحاضرة.                                                                           |                                        |
| 2. تحضيرات عملية إلقاء محاضرات من قبل الطلبة وإعداد تقارير حول الموضوع.                                                      |                                        |
| 3. التعلم التعاوني، ثم تنفيذ استراتيجيات الصديق الناقد.                                                                      |                                        |
| 4. التعلم المدمج                                                                                                             |                                        |
| 5. الاستكشاف، الاستقصاء، العصف الذهني.                                                                                       |                                        |



| 10. بنية المقرر |         |                                                                                  |                    |                  |                     |
|-----------------|---------|----------------------------------------------------------------------------------|--------------------|------------------|---------------------|
| الاسبوع         | الساعات | مخرجات التعلم المطلوبة                                                           | اسم الموضوع        | طريقة التعليم    | طريقة التقييم       |
| 1               | 2       | أن يتمكن الطلبة من فهم معنى الإدارة التربوية والتعليمية                          | أنواع الإدارات     | المحاضرة         | اختبار شفهي وتحريري |
| 2               | 2       | معرفة الطلبة أهمية الإدارة التربوية<br>أن يوضح الطلبة واجبات الإدارة التربوية    | تاريخ الإدارة      | المحاضرة         | اختبار شفهي وتحريري |
| 3               | 2       | التفريق بين الإدارة التربوية والتعليمية                                          | الفرق بين الإدارات | الحوار والمناقشة | اختبار شفهي وتحريري |
| 4               | 2       | معرفة أهميتها والحاجة إليها<br>التكمن من حل مشكلاتها                             | العمليات الإدارية  | الحوار والمناقشة | اختبار شفهي وتحريري |
| 5               | 2       | معرفة مفهومه وأنواعه<br>التعرف على أهم واجباته                                   | التخطيط التربوي    | الحوار والمناقشة | اختبار شفهي وتحريري |
| 6               | 2       | توضيح مفهومه وأنواعه<br>معرفة مفهومه وأنواعه                                     | التنظيم الإداري    | الحوار والمناقشة | اختبار شفهي وتحريري |
| 7               | 2       | معرفة مفهومه وأنواعه<br>التعرف على واجباته                                       | التوجيه الإداري    | الحوار والمناقشة | اختبار شفهي وتحريري |
| 9               | 2       | التمكن من بناء علاقات هادفة<br>ضمن عناصر العملية التعليمية<br>سواء تدريس أو طلبة | العلاقات الإنسانية | الحوار والمناقشة | اختبار شفهي وتحريري |
| 9               | 2       | التعرف على كيفية استخدام الحوافز المعنوية أو المادية                             | الحوافز والاتصال   | الحوار والمناقشة | اختبار شفهي وتحريري |
| 10              | 2       | التعرف على الفرق بين التقييم والتقويم، وكيف استخدامها                            | التقييم والتقويم   | الحوار والمناقشة | اختبار شفهي وتحريري |
| 11              | 2       | التفريق بين الخطة والتخطيط التعرف على شروط الخطة الدراسية الناجحة                | الخطة الدراسية     | الحوار والمناقشة | اختبار شفهي وتحريري |
| 12              | 2       | الفرق بين الخطة اليومية والشهرية والسنوية.                                       | الخطة الدراسية     | الحوار والمناقشة | اختبار شفهي وتحريري |
| 13              | 2       | معرفة أسس الإدارة المدرسية الناجحة                                               | مدير المدرسة       | الحوار والمناقشة | اختبار شفهي وتحريري |
| 14              | 2       | التعرف على مفهوم الأزمة وأسبابها.                                                | إدارة الأزمة       | الحوار والمناقشة | اختبار شفهي وتحريري |





|    |   |                                                |                                 |                  |                     |
|----|---|------------------------------------------------|---------------------------------|------------------|---------------------|
| 15 | 2 | التعرف على كيفية مواجهة الأزمات وحلها.         | إدارة الأزمة                    | الحوار والمناقشة | اختبار شفهي وتحريري |
| 16 | 2 | التعرف على مفهوم الوقت معرفة أهمية ادارت الوقت | إدارة الوقت                     | الحوار والمناقشة | اختبار شفهي وتحريري |
| 17 | 2 | التعرف على نظريات الإدارة العامة               | نظريات الإدارة                  | الحوار والمناقشة | اختبار شفهي وتحريري |
| 18 | 2 | معرفة النظريات الكلاسيكية                      | النظريات الإدارية               | الحوار والمناقشة | اختبار شفهي وتحريري |
| 19 | 2 | معرفة النظريات الانسانية                       | النظريات الإدارية               | الحوار والمناقشة | اختبار شفهي وتحريري |
| 20 | 2 | معرفة النظريات السلوكية                        | النظريات الإدارية               | الحوار والمناقشة | اختبار شفهي وتحريري |
| 21 | 2 | معرفة النظريات الاجتماعية                      | النظريات الإدارية               | الحوار والمناقشة | اختبار شفهي وتحريري |
| 22 | 2 | التعرف على مفهومه وأهميته                      | الإشراف التربوي                 | الحوار والمناقشة | اختبار شفهي وتحريري |
| 23 | 2 | التعرف على أساليب الإشراف وواجباته             | الإشراف التربوي                 | الحوار والمناقشة | اختبار شفهي وتحريري |
| 24 | 2 | التعرف على مفهومها وتعريفاتها                  | القيادة التربوية                | الحوار والمناقشة | اختبار شفهي وتحريري |
| 25 | 2 | معرفة أوجه الشبه والاختلاف بشكل مفصل           | أوجه الشبه بين القيادة والإدارة | الحوار والمناقشة | اختبار شفهي وتحريري |

#### 11. تقييم المقرر

|                                                                                                                                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------|--|
| توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير .... الخ |  |
|---------------------------------------------------------------------------------------------------------------------------------------------|--|

#### 12. مصادر التعلم والتدريس

|                                                                                                                                      |  |
|--------------------------------------------------------------------------------------------------------------------------------------|--|
| الكتب المقررة المنهجية ان وجدت                                                                                                       |  |
| المصادر والمراجع المعتمدة/ خالد عبد الله دهمش (2016) الإدارة التربوية عبد الله أحمد محمد عمارات (2009) منظور الكتبة للإدارة التربوية |  |





|  |                                                                                                                                                             |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>حسنة حرام (2009) إدارة المؤسسات التربوية</p> <p>أحمد بطاح (2006)، قضايا معاصرة في الإدارة التربوية</p> <p>أحمد محمد الحبيشي (2014)، الإدارة المدرسية</p> |
|  | المراجع الالكترونية، ومواقع الانترنت.                                                                                                                       |
|  |                                                                                                                                                             |



## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                       |                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                       | 1. اسم المقرر                                                                                         |
|                                                                                                                                                                                                                                                                                       | اللغة الإنكليزية                                                                                      |
|                                                                                                                                                                                                                                                                                       | 2. رمز المقرر                                                                                         |
|                                                                                                                                                                                                                                                                                       | UOH202                                                                                                |
|                                                                                                                                                                                                                                                                                       | 3. الفصل / السنة                                                                                      |
|                                                                                                                                                                                                                                                                                       | سنوي المرحلة الثانية 2025-2026                                                                        |
|                                                                                                                                                                                                                                                                                       | 4. تاريخ اعداد هذا الوصف                                                                              |
|                                                                                                                                                                                                                                                                                       | 2025\9\21                                                                                             |
|                                                                                                                                                                                                                                                                                       | 5. اشكال الحضور المتاحة                                                                               |
|                                                                                                                                                                                                                                                                                       | حضور يومي                                                                                             |
|                                                                                                                                                                                                                                                                                       | 6. عدد الساعات الدراسية (30 ساعة) / عدد الوحدات (2 وحدات)                                             |
|                                                                                                                                                                                                                                                                                       | ساعة واحدة وبنظام وحدتين                                                                              |
|                                                                                                                                                                                                                                                                                       | 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                    |
|                                                                                                                                                                                                                                                                                       | الاسم: اري نخيل عبدال<br>الايمل: Aridasi@uohamdanaya.edu.iq                                           |
|                                                                                                                                                                                                                                                                                       | 8. اهداف المقرر                                                                                       |
| 1- إثراء وتطوير مهارات اللغة الإنكليزية لدى الطلاب.<br>2- تطوير قدرات ومهارات الطلاب اللغوية.<br>3- تنمية مهارات التحدث باللغة الإنكليزية.                                                                                                                                            | اهداف المادة الدراسية                                                                                 |
| 9. استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                        |                                                                                                       |
| 1- تنمية قدرة الطلاب على التعرف على أهم المفردات والمصطلحات اللغوية في اللغة الإنكليزية.<br>2- إثراء مفردات الطلاب.<br>3- فهم أهمية تعلم اللغة الإنكليزية وأثرها على تعلم المواد الدراسية الأخرى.<br>4- تنمية مهارات الطلاب في اللغة الإنكليزية.<br>5- تنمية مهارات القراءة والكتابة. | الاستراتيجية<br> |

# 10.بنية المقرر

| الاسبوع    | الساعات | مخرجات التعلم المطلوبة                   | اسم الوحدة والموضوع            | طريقة التعلم                                                             | طريقة التقييم                 |
|------------|---------|------------------------------------------|--------------------------------|--------------------------------------------------------------------------|-------------------------------|
| الاول      | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الأولى الأزمنة          | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| الثاني     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الأولى الأسئلة          | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| الثالث     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الأولى كلمات السؤال     | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| الرابع     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثانية المضارع المستمر | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| الخامس     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثانية لمضارع البسيط   | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| السادس     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثانية يملك/تملك       | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| السابع     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثالثة الماضي البسيط   | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| الثامن     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثالثة الماضي المستمر  | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| التاسع     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الثالثة التعبير الزمني  | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| العاشر     | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الرابعة الكمية          | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |
| الحادي عشر | 1       | المعرفة النظرية والتطبيق التربوي العملي. | الوحدة الرابعة مقالات          | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الأسئلة المباشرة وردود الفعل. |







|                               |                                                                          |                                             |                                          |   |            |
|-------------------------------|--------------------------------------------------------------------------|---------------------------------------------|------------------------------------------|---|------------|
| الأسئلة المباشرة وردود الفعل. | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة الخامسة أنماط الأفعال                | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الثاني عشر |
| الأسئلة المباشرة وردود الفعل. | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة الخامسة النوايا المستقبلية           | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الثالث عشر |
| الأسئلة المباشرة وردود الفعل. | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة السادسة المقارنة والتفضيل            | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الرابع عشر |
| الأسئلة المباشرة وردود الفعل. | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة السادسة صفات التفضيل                 | المعرفة النظرية والتطبيق التربوي العملي. | 1 | الخامس عشر |
| الأسئلة المباشرة وردود الفعل. | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة السابعة المضارع التام والماضي البسيط | المعرفة النظرية والتطبيق التربوي العملي. | 1 | السادس عشر |
| الأسئلة المباشرة وردود الفعل. | تقديم المحاضرة من خلال السبورة وشاشات العرض مع مشاركة تفاعلية من الطلاب. | الوحدة الثامنة ينبغي ويجب                   | المعرفة النظرية والتطبيق التربوي العملي. | 1 | السابع عشر |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير ... الخ

#### 12. مصادر التعلم والتدريس

|                                                                                                                  |                                                                      |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| New Headway Plus for pre- Intermediate                                                                           | الكتب المقررة المطلوبة (المنهجية ان وجدت)                            |
|                                                                                                                  | المراجع الرئيسية (المصادر)                                           |
|                                                                                                                  | الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير ...) |
| متابعة المراجع الإلكترونية والإنترنت بما فيها المواقع العلمية الموثوقة ومواقع المكتبات في بعض الجامعات العالمية. | المراجع الإلكترونية، مواقع الانترنت                                  |







## نموذج وصف المقرر

|     |                                                                                   |                                                                                                                                                                                                                                                                                                                |
|-----|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.  | اسم المقرر:                                                                       |                                                                                                                                                                                                                                                                                                                |
|     | اللغة العربية العامة                                                              |                                                                                                                                                                                                                                                                                                                |
| 2.  | رمز المقرر:                                                                       |                                                                                                                                                                                                                                                                                                                |
|     | UOH201                                                                            |                                                                                                                                                                                                                                                                                                                |
| 3.  | الفصل/ السنة:                                                                     |                                                                                                                                                                                                                                                                                                                |
|     | 2025-2026 المرحلة الثانية                                                         |                                                                                                                                                                                                                                                                                                                |
| 4.  | تاريخ اعداد هذا الوصف:                                                            |                                                                                                                                                                                                                                                                                                                |
|     | 2025-9-18                                                                         |                                                                                                                                                                                                                                                                                                                |
| 5.  | اشكال الحضور المتاحة:                                                             |                                                                                                                                                                                                                                                                                                                |
|     | التعليم الحضوري                                                                   |                                                                                                                                                                                                                                                                                                                |
| 6.  | عدد الساعات الدراسية (الكلية)/ عدد الوحدات (الكلية)                               |                                                                                                                                                                                                                                                                                                                |
|     | (30) ساعة / 2 وحدات.                                                              |                                                                                                                                                                                                                                                                                                                |
| 7.  | اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                   |                                                                                                                                                                                                                                                                                                                |
|     | الاسم : م.م. هبى محمد توفيق إبراهيم<br>الايمل: hibamohamed.149@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                |
| 8.  | اهداف المقرر                                                                      |                                                                                                                                                                                                                                                                                                                |
|     | اهداف المادة الدراسية                                                             | <ol style="list-style-type: none"> <li>1. تعرف الطلبة على اهمية مادة اللغة العربية وآدابها، وفهم قواعد النحو العربي.</li> <li>2. تطوير مهارات الطلاب اللغوية .</li> <li>3. ان يكتسب الطالب المهارات اللازمة والقدرة على فهم التركيب النحوي والدلالي.</li> <li>4. تنمية روح الاعتزاز باللغة العربية.</li> </ol> |
| 9.  | استراتيجيات التعلم والتعلم                                                        |                                                                                                                                                                                                                                                                                                                |
|     | الاستراتيجية                                                                      | <ol style="list-style-type: none"> <li>1. اكساب الطلبة معلومات ومفاهيم اللغة العربية ،و اعداد كوادر مدربة ومؤهلة للعمل في المؤسسات.</li> <li>2. تعليم الطلبة كيفية توظيف قواعد العربية العامة في كتابتهم.</li> <li>3. مناقشة الطلبة واجراء اختبارات لمناقشة اهم الأخطاء اللغوية والتعبيرية معهم.</li> </ol>    |
| 10. | بنية المقرر                                                                       |                                                                                                                                                                                                                                                                                                                |
|     | الاسبوع                                                                           | المساعات                                                                                                                                                                                                                                                                                                       |
|     | اسم الوحدة او الموضوع                                                             | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                         |
|     | طريقة التعلم                                                                      | طريقة التقييم                                                                                                                                                                                                                                                                                                  |



| الأسبوع | الساعات | مخرجات التعلم المطلوبة                                                              | اسم الوحدة / أو الموضوع     | طريقة التعليم              | طريقة التقييم    |
|---------|---------|-------------------------------------------------------------------------------------|-----------------------------|----------------------------|------------------|
| الأول   | 1       | عرض مفردات المنهاج، مقدمة، المبتدأ والخبر وأنواع المبتدأ وأنواع الخبر وحل التمارين. | المبتدأ والخبر              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني  | 1       | موضوع التشبيه وأركان التشبيه وأنواع التشبيه وحل التمارين                            | التشبيه                     | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث  | 1       | موضوع الجنس، وبيان أنواع الجنس التام، والنقص وشروط الجنس التام، وحل التمارين.       | الجنس                       | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع  | 1       | الأخطاء اللغوية، وبيان أقسامها.                                                     | الأخطاء اللغوية             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الخامس  | 1       | أنواع الأخطاء اللغوية وتطبيق أمثلة على جميع أنواع الأخطاء اللغوية                   | تطبيقات على الأخطاء اللغوية | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السادس  | 1       | 10 آيات من سورة الكهف للحفظ وشرحها بشكل مفصل مع المعاني.                            | النص القرآني الكريم         | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السابع  | 1       | امتحان                                                                              |                             |                            |                  |
| الثامن  | 1       | العدد، بيان العلاقات بين العدد والمعدود وتذكير العدد وتأنينه وحل التمارين.          | العدد                       | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| التاسع  | 1       | تعريف المفعول به، أنواع المفعول به.                                                 | المفعول به                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| العاشر  | 1       | تعريف المفعول المطلق، بيان أغراض المفعول                                            | المفعول المطلق              | المحاضرة                   | الأسئلة المباشرة |





|                  |                               |                   |                                                                                                      |   |                    |
|------------------|-------------------------------|-------------------|------------------------------------------------------------------------------------------------------|---|--------------------|
|                  |                               | والمناقشة والحوار | المطلق .                                                                                             |   |                    |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المفعول لأجله     | تعريف المفعول لأجله<br>واخذ امثلة تطبيقية .                                                          | 1 | الحادي عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المفعول معه       | تعريف المفعول معه<br>واخذ امثلة تطبيقية .                                                            | 1 | الثاني عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المفعول فيه       | تعريف المفعول فيه ،<br>أنواع المفعول فيه، حل<br>التمارين.                                            | 1 | الثالث عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار |                   | مراجعة للمنهج                                                                                        | 1 | الرابع عشر         |
|                  |                               |                   | امتحان                                                                                               | 1 | الخامس عشر         |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | النعته            | تعريف النعته ، أنواع<br>النعته                                                                       | 1 | الاسبوع السادس عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | التوكيد           | تعريف التوكيد وأنواع<br>التوكيد                                                                      | 1 | الاسبوع السابع عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | العطف             | تعريف العطف ،<br>حروف العطف ، معاني<br>حروف العطف.                                                   | 1 | الاسبوع الثامن عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | البدل             | تعريف البدل ، اقسام<br>البدل ، بدل كل من كل ،<br>بدل بعض من كل ،<br>وبدل الاشتغال ، حل<br>التمارين . | 1 | الاسبوع التاسع عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الأسماء الخمسة    | معاني الأسماء الخمسة ،<br>اعراب الأسماء الخمسة<br>، شروط اعرابها<br>بالحروف ، حل<br>التمارين.        | 1 | الاسبوع العشرون    |





|                  |                               |                       |                                                                                                                                                                  |   |                               |
|------------------|-------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------|
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الفاعل                | تعريف الفاعل ، أنواع<br>الفاعل ، حل تمارين<br>الفاعل.                                                                                                            | 1 | الاسبوع<br>الحادي<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | علامات الترقيم        | تعريف علامات الترقيم<br>، الفاصلة ، الفاصلة<br>المنقوطة، النقطة ،<br>علامة الحذف ، النقطتان<br>، علامة الاستفهام ،<br>علامة التأثر ، علامة<br>التنصيص ، القوسان. | 1 | الاسبوع<br>الثاني<br>والعشرون |
|                  |                               |                       | امتحان                                                                                                                                                           | 1 | الاسبوع<br>الثالث<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | بدر شاكر السياب       | حياته ونشأته                                                                                                                                                     | 1 | الاسبوع<br>الرابع<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | قصيدة انشودة<br>المطر | حفظ 8 ابيات من قصيدة<br>انشودة المطر وشرح<br>القصيدة وبيان معانيها<br>وتحليل القصيدة بلاغياً.                                                                    | 1 | الاسبوع<br>الخامس<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الأفعال الخمسة        | تعريف الأفعال الخمسة<br>، اعراب الأفعال<br>الخمسة.                                                                                                               | 1 | الاسبوع<br>اساس<br>والعشرون   |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | نائب الفاعل           | تعريف نائب الفاعل،<br>امثلة لنائب الفاعل.                                                                                                                        | 1 | الاسبوع<br>السادس<br>والعشرون |



|                               |   |                               |                  |                  |
|-------------------------------|---|-------------------------------|------------------|------------------|
| ن                             |   |                               |                  |                  |
| الاسبوع<br>الثامن<br>والعشرون | 1 | حل امثلة متنوعة               | المناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>التاسع<br>والعشرون | 1 | مراجعة عامة لمفردات<br>المنهج | المناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>الثلاثون           | 1 | امتحان                        |                  |                  |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشغوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس

|                                                                             |                                                                  |
|-----------------------------------------------------------------------------|------------------------------------------------------------------|
| لا يوجد                                                                     | الكتب المقررة المطلوبة (المنهجية ان وجدت)                        |
| شرح ابن عقيل على ألفية ابن مالك                                             | المراجع الاساسية (المصادر)                                       |
| معاني النحو ، د.فاضل السامرائي ، النحو الوافي لعباس حسن.                    | الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) |
| مواقع الألوكة ، مكتبة ودود ، المكتبة الوقفية ، مكتبة الأرشيف ، مكتبة النور. | المراجع الالكترونية، مواقع الانترنت                              |



## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
| علم الفلك                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
| PHY212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                     |
| 2025-2026 المرحلة الثانية                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |
| 2025/9/22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                     |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |
| التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |
| 60 ساعة / 4 وحدات                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                     |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |
| الاسم: أ. هناء نافع عزيز                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | الايميل: hanaa69@uohamdaniya.edu.iq |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |
| <p>1. تعرف الطلبة على اهمية المعرفة العلمية لمقرر علم الفلك في الحياة اليومية.</p> <p>2. التعرف على الانواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ ونظريات وقوانين تتعلق بمقرر علم الفلك.</p> <p>3. تعريف الطلبة بمبادئ علم الفلك والقوانين الفيزيائية المستخدمة لايجاد الخواص للكواكب والنجوم وأيضا التعرف على المجرات وانواعها</p> <p>4. تمكين الطلبة من كيفية اشتقاق القوانين المتعلقة بالمفاهيم الفلكية وتطبيقها</p> <p>5. ان يكتسب الطالب المهارات اللازمة للعمل في مجالات اختصاص الفيزياء.</p> <p>6. طلبة كليات التربية يشعرون بقيمة واهمية مواد الفيزياء اثناء ممارسة اختصاصاتهم كمدرسين في المدارس المتوسطة والاعدادية</p> | اهداف المادة الدراسية               |
| 9. استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |
| <p>1. اكساب الطلبة معلومات ومفاهيم فيزيائية . اعداد كوادر مدربة ومؤهلة للعمل في المؤسسات</p> <p>2. والتعرف على التطبيقات العلمية الخاصة بكل معرفة علمية.</p> <p>3. التعرف على الانواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ ونظريات والاجهزة الخاصة بعلم الفلك</p> <p>4. تمكين الطالب من الحصول على المعرفة والفهم للقوانين العلمية في الفيزياء والتطبيقات العملية لعلوم الفيزياء والتحليل المنطقي والعلمي وتفسير للظواهر الفيزيائية</p>                                                                                                                                                                                          | الاستراتيجية                        |
| 10. بنية المقرر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                     |





| الاسبوع    | الساعات | مخرجات التعلم المطلوبة                                        | اسم الوحدة او الموضوع              | طريقة التعلم                                             | طريقة التقييم    |
|------------|---------|---------------------------------------------------------------|------------------------------------|----------------------------------------------------------|------------------|
| الاسبوع    | الساعات | مخرجات التعلم المطلوبة                                        | اسم الوحدة / او الموضوع            | طريقة التعليم                                            | طريقة التقييم    |
| الاول      | 2       | الميكانيك السماوي                                             | الميكانيك السماوي                  | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| الثاني     | 2       | انظمة الاحداثيات للقبية السماوية مع حل الامثلة                | انظمة الاحداثيات للقبية السماوية   | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| الثالث     | 2       | حركة النجوم ومنطقة البروج                                     | حركة النجوم ومنطقة البروج          | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| الرابع     | 2       | الفصول الفلكية                                                | الفصول الفلكية                     | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| الخامس     | 2       | الترنح والتمايد ووحدات القياس مع حل بعض الامثلة               | الترنح والتمايد ووحدات القياس      | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| السادس     | 2       | اصل المنظومة الشمسية                                          | اصل المنظومة الشمسية               | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة + امتحان |
| السابع     | 2       | الخصائص الفيزيائية للشمس مع حل الامثلة                        | الخصائص الفيزيائية للشمس           | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| الثامن     | 2       | الخصائص الفيزيائية للقمر - كتلته القطر - الكثافة - التعجيل    | الخصائص الفيزيائية للقمر           | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| التاسع     | 2       | ظاهرتي الكسوف والخسوف                                         | ظاهرتي الكسوف والخسوف              | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة المباشرة |
| العاشر     | 2       | الدورات النجمية والاقترانية للقمر                             | الدورات النجمية                    | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة والحوار | الأسئلة + امتحان |
| الحادي عشر | 2       | الخصائص الفيزيائية للكواكب السيارة - كتلتها - قطرها - كواكبها | الخصائص الفيزيائية للكواكب السيارة | المحاضرة واستخدام جهاز العرض الداتا شو والمناقشة         | الأسئلة المباشرة |



|                  |                                                         |                                 |                                                                   |   |                         |
|------------------|---------------------------------------------------------|---------------------------------|-------------------------------------------------------------------|---|-------------------------|
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | والمذنبات                       | والمذنبات-أنواعها وتركيبها                                        | 2 | الثاني عشر              |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | قاعدة بود                       | قاعدة بود-تطبيقاتها                                               | 2 | الثالث عشر              |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | الشهب والنيازك                  | الشهب والنيازك                                                    | 2 | الرابع عشر              |
| الأسئلة + امتحان | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | المذنبات                        | المذنبات-أنواعها-خاندتها                                          | 2 | الخامس عشر              |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | حركة النجوم                     | حركة النجوم                                                       | 2 | الاسبوع السادس عشر      |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | اقدار النجوم                    | اقدار النجوم-الاقدار الظاهرية-الاقدار المطلقة-الاقدار البوليمترية | 2 | الاسبوع السابع عشر      |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | قياس اقطار وكثافة وكثافة النجوم | قياس اقطار وكثافة وكثافة النجوم مع حل الامثلة                     | 2 | الاسبوع الثامن عشر      |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | اطياف النجوم                    | اطياف النجوم-الطيف المستمر-طيف الانبعاث-طيف الامتصاص              | 2 | الاسبوع التاسع عشر      |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | مخطط هيرتز سيرانك-رسل           | مخطط هيرتز سيرانك-رسل                                             | 2 | الاسبوع العشرون         |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار | عمر النجوم ودورة حياتها         | عمر النجوم ودورة حياتها                                           | 2 | الاسبوع الحادي والعشرون |
| الأسئلة + امتحان | المحاضرة والمناقشة والحوار                              | الثقوب السوداء                  | الثقوب السوداء                                                    | 2 | الاسبوع الثاني والعشرون |
| الأسئلة المباشرة | السيورة والمناقشة واستخدام جهاز العرض الداتا شو         | النجوم الثنائية                 | النجوم الثنائية                                                   | 2 | الاسبوع الثالث          |



|                         |   |                                 |                                 |                                                         |
|-------------------------|---|---------------------------------|---------------------------------|---------------------------------------------------------|
| والعشرون                | 2 | العناقيد النجمية                | العناقيد النجمية                | العرض الداتا شو والحوار                                 |
| الاسبوع الرابع والعشرون | 2 | العناقيد النجمية                | العناقيد النجمية                | السبورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار |
| الاسبوع الخامس والعشرون | 2 | تصنيف النجوم الثنائية والمتغيرة | تصنيف النجوم الثنائية والمتغيرة | السبورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار |
| الاسبوع السادس والعشرون | 2 | انواع المجرات - البيضاوية       | انواع المجرات                   | السبورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار |
| الاسبوع السابع والعشرون | 2 | مكونات وكتلة المجرات            | مكونات المجرات                  | المحاضرة والمناقشة والحوار                              |
| الاسبوع الثامن والعشرون | 2 | الجمهرة النجمية والعناقيد       | الجمهرة النجمية والعناقيد       | السبورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار |
| الاسبوع التاسع والعشرون | 2 | السدن والكويزرات                | السدن والكويزرات                | السبورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار |
| الاسبوع الثلاثون        | 2 | تمدد الكون والزحزحة نحو الاحمر  | تمدد الكون                      | السبورة والمناقشة واستخدام جهاز العرض الداتا شو والحوار |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية .... الخ

#### 12. مصادر التعلم والتدريس

|                                                                  |                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        | كتاب علم الفلك: د.حميد مجول النعيمي ، د.فياض النجم                                                                           |
| المراجع الاساسية (المصادر)                                       | كتاب علم الفلك: د.حميد مجول النعيمي ، د.فياض النجم                                                                           |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية للرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الإلكترونية، مواقع الانترنت                              | مواقع الانترنت التي تهتم بمجال علم الفلك                                                                                     |





|                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                              | الرياضيات                     |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                              | PHY209                        |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                            | 2025-2026                     |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                   | 2025/9/19                     |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                    | التعليم الحضوري               |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                                                                                                                                                                                                                                                                                        | 90 ساعة/ 6 وحدات              |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                          | الاسم: أ.م. رجاء عبدالله بشير |
| الايمل: <a href="mailto:ragaa.habsh@uohamdaniya.edu.iq">ragaa.habsh@uohamdaniya.edu.iq</a>                                                                                                                                                                                                                                                                                                                  |                               |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                             | اهداف المادة الدراسية         |
| <p>أ- تعريف الطالب بالمبادئ الأساسية لمادة الرياضيات والتي تدخل في جميع حقول الرياضيات وتطبيقاتها والتي تدخل في تطبيقات الهندسة وجميع أقسام العلوم</p> <p>ب- اكتساب الطلبة للمهارات التي تمكنهم من تدريس مادة الرياضيات</p> <p>ت- العمل على اكتساب الطلبة لمهارات اجراء البحوث العلمية في اختصاص الرياضيات.</p> <p>ج- تعريف الطالب بأهمية علم الرياضيات واكتساب المهارات العقلية والتفكير في الرياضيات.</p> |                               |
| 9. استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                                                                                              | الاستراتيجية                  |
| <p>1. اكساب الطلبة معلومات ومفاهيم فيزيائية ورياضية . اعداد كوادرن مدرية ومؤهلة للعمل في المؤسسات</p> <p>2. والتعرف على التطبيقات العلمية الخاصة بكل معرفة علمية.</p> <p>3. التعرف على الانواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ</p>                                                                                                                                                         |                               |



| ونظريات .       |         |                                                         |                                    |                               |                                  |
|-----------------|---------|---------------------------------------------------------|------------------------------------|-------------------------------|----------------------------------|
| 10. بنية المقرر |         |                                                         |                                    |                               |                                  |
| الاسبوع         | الساعات | مخرجات التعلم المطلوبة                                  | اسم الوحدة او الموضوع              | طريقة التعلم                  | طريقة التقييم                    |
| الاسبوع         | الساعات | مخرجات التعلم المطلوبة                                  | اسم الوحدة / او الموضوع            | طريقة التعلم                  | طريقة التقييم                    |
| الاول           | 3       | عرض مفردات<br>المنهاج، يتعرف الطالب على<br>المقتربات    | المقتربات النهائية<br>واللانتهائية | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الثاني          | 3       | يتعرف الطالب على الغايات<br>للمقتربات                   | الغايات                            | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الثالث          | 3       | يتعرف الطالب على<br>المتسلسلات النهائية<br>واللانتهائية | المتسلسلات اللانتهائية             | المحاضرة والمناقشة<br>والحوار | امتحان<br>+ حل الامثلة           |
| الرابع          | 3       | يتعرف الطالب على طرق<br>حل المتسلسلات                   | المتسلسلات اللانتهائية             | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الخامس          | 3       | يتعرف الطالب على<br>المتسلسلات الهندسية                 | المتسلسلات الهندسية                | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                 |
| السادس          | 3       | يتعرف الطالب على طرق<br>اختبار المتسلسلات               | اختبارات التقارب                   | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                 |
| السابع          | 3       | يتعرف الطالب على كيفية<br>اجراء اختبار التكامل          | اختبار التكامل                     |                               | امتحان                           |
| الثامن          | 3       | يتعرف الطالب على كيفية<br>اجراء اختبار المقارنة         | اختبار المقارنة                    | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                 |
| التاسع          | 3       | يتعرف الطالب على كيفية<br>اختبار النسبة                 | اختبار النسبة                      | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                 |
| العاشر          | 3       | يتعرف الطالب على تقارب<br>المتسلسلات الاسية             | متسلسلات القوى                     | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة + امتحان     |
| الحادي          | 3       | طريقة الحل بمتسلسلة تايلر                               | متسلسلة تايلر                      | المحاضرة والمناقشة            | الأسئلة المباشرة                 |





|                         |   |                                                                                                            |                                                                          |                               |                                  |
|-------------------------|---|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------|----------------------------------|
| عشر                     |   |                                                                                                            |                                                                          |                               |                                  |
| الثاني عشر              | 3 | كيفية الحل بمتسلسلة<br>ماكلاورين                                                                           | متسلسلة ماكورين                                                          | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                 |
| الثالث عشر              | 3 | كيفية تطبيق متسلسلة ذات<br>الحددين و إيجاد الجذور                                                          | متسلسلة ذات الحددين                                                      | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                 |
| الرابع عشر              | 3 | يتعرف على المتجهات و<br>وحدات المتجه ،جمع و<br>طرح المتجهات                                                | المتجهات                                                                 | المحاضرة والمناقشة<br>والحوار | حل الامثلة                       |
| الخامس عشر              | 3 | التعرف على كيفية ضرب<br>المتجهات وإيجاد المساحات<br>والحجوم .                                              | طرق ضرب المتجهات                                                         | المحاضرة                      | امتحان                           |
| الاسبوع السادس عشر      | 3 | المشتقات الجزئية بمتغيرين<br>او أكثر من متغيرين                                                            | المشتقات الجزئية                                                         | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الاسبوع السابع عشر      | 3 | التعرف على الانحدار و<br>الانحناء و التباعد<br>واللابلاسيان للدوال<br>والمشتقة الاتجاهية الجزئية<br>للدوال | الانحدار والتباعد و<br>الانحناء و المشتقة<br>الاتجاهية الجزئية<br>للدوال | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الاسبوع الثامن عشر      | 3 | التعرف على طريقة الحل<br>باستخدام قاعدة السلسلة<br>للمشتقات الجزئية                                        | قاعدة السلسلة                                                            | المحاضرة والمناقشة<br>والحوار | حل الامثلة + امتحان              |
| الاسبوع التاسع عشر      | 3 | المعادلات التفاضلية من<br>الدرجة الاولى و طرق حلها<br>درجة ورتبة المعادلة<br>التفاضلية .                   | طرق فصل المتغيرات                                                        | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الاسبوع العشرون         | 3 | طريقة حل المعادلات<br>المتجانسة                                                                            | المعادلات المتجانسة                                                      | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الاسبوع الحادي والعشرون | 3 | طريقة حل المعادلات<br>التفاضلية التامة                                                                     | المعادلات التامة                                                         | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |
| الاسبوع الثاني والعشرون | 3 | طريقة حل المعادلات<br>الخطية                                                                               | المعادلات الخطية                                                         | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة + حل<br>الامثلة |



|     |                            |   |                                                                       |                                                 |                                        |
|-----|----------------------------|---|-----------------------------------------------------------------------|-------------------------------------------------|----------------------------------------|
| ن   | الاسبوع الثالث والعشرون    | 3 | المعادلات من الدرجة الثانية                                           | المعادلات التفاضلية من الدرجة الثانية           | امتحان                                 |
| ن   | الاسبوع الرابع والعشرون    | 3 | المتجانسة من الدرجة الثانية                                           | المعادلات التفاضلية المتجانسة من الدرجة الثانية | الأسئلة المباشرة + حل الامثلة          |
| ن   | الاسبوع الخامس والعشرون    | 3 | التعرف على المعادلات الغير المتجانسة                                  | المعادلات التفاضلية الغير المتجانسة             | الأسئلة المباشرة + حل الامثلة          |
| ن   | الاسبوع السادس والعشرون    | 3 | التعرف على طرق حل المعادلات المعتمدة من الدرجة الثانية بالدرجة الاولى | المعادلات التفاضلية ذات المتغيرات المعتمدة      | الأسئلة المباشرة + امتحان + حل الامثلة |
| ن   | الاسبوع السابع والعشرون    | 3 | حل المعادلات التفاضلية الغير المعتمدة                                 | المعادلات ذات المتغيرات الغير المعتمدة          | الأسئلة المباشرة + حل الامثلة          |
| ن   | الاسبوع الثامن والعشرون    | 3 | المعادلات ذات الرتبة الثانية                                          | معادلة برنولي                                   | الأسئلة المباشرة                       |
| ن   | الاسبوع التاسع والعشرون    | 3 | التعرف على تحويلات لابلاس                                             | تحويلات لابلاس                                  | الأسئلة المباشرة + حل الامثلة          |
| ن   | الاسبوع الثلاثون           | 3 | امتحان                                                                | معكوس تحويلات لابلاس                            | حل الامثلة                             |
| 11. | تقييم المقرر خاصة بالصياغة |   |                                                                       |                                                 |                                        |



توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والواجبات والامتحانات اليومية والشهرية والتحريرية والتقارير.... الخ

| 12. مصادر التعلم والتدريس                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | المراجع الاساسية (المصادر)                                                                                                     |
| <p>الفيزياء الرياضية، تأليف معن عبد المجيد ابراهيم، الطبعة الأولى، 2000</p> <p>المعادلات التفاضلية الجزئية للكليات العلمية و الهندسية، تأليف أس-سجي فارلو ، ترجمة د.عطا الله ثامر العاني جامعة بغداد بيت الحكمة.</p> <p>1-Calculus and analytic geometry by Gorege Thomas 7<sup>th</sup> edition</p> <p>2-Schaum ' s Outline of Theory and Problems of Advanced Calculus , 2<sup>th</sup> edition by Robert Wrede ,Murray R.Spiegel, 2002.</p> <p>3- Differential equation , With boundary value problems 2<sup>th</sup> edition , by John Polking, Albert Boggess and David Arnold, 2006.</p> <p>5-a first course in different equations, with modelling application, 8<sup>th</sup> edition by dennis G . Zill, 2005.</p> |                                                                                                                                |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | متابعه المراجع الإلكترونية والأونترنيت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الالكترونية، مواقع الانترنت                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | مواقع الانترنت التي تخص الرياضيات                                                                                              |



## نموذج وصف المقرر

|                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1- اسم المقرر                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                          |
| جرائم نظام البعث في العراق                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                          |
| 2- رمز المقرر                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                          |
| UOH203                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                          |
| 3- الفصل / السنة                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                          |
| سنوي\المرحلة الثانية 2025-2026                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                          |
| 4- تاريخ اعداد هذا الوصف                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                          |
| 2025/9/21                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                          |
| 5- اشكال الحضور المتاحة                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                          |
| حضورى أسبوعيا                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                          |
| 6- عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                           |                                                                                                                                                                                                                                                                                                          |
| 30 ساعة / وحدتان                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                          |
| 7- اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                |                                                                                                                                                                                                                                                                                                          |
| الاسم: م.م. دلشاد محمد زرا      الايميل: dilshad.harki@uohamdaniya.edu.iq                                                                                                                                         |                                                                                                                                                                                                                                                                                                          |
| 8- اهداف المقرر                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                          |
| <p>اهداف المادة الدراسية</p> <p>تعريف الطلبة بجرائم نظام البعث في العراق مثل المقابر الجماعية في العراق قبل العام 2003.</p> <p>توفير الفرصة لفهم تفصيلات واحدة من أهم الفترات الحالكه في تاريخ العراق الحديث.</p> | <p>9- استراتيجيات التعليم والتعلم</p> <p>الاستراتيجية</p> <p>1. فهم طبيعة النظام الحاكم خلال فترة حكم حزب البعث في العراق.</p> <p>2. تعريف الطلبة بفداحة جرائم حزب البعث في العراق.</p> <p>3. تنمية معلومات الطلبة عن أحلك فترة في تاريخ العراق المعاصر.</p> <p>ب - الأهداف المهارتية الخاصة بالمقرر</p> |





- الأهداف المهاراتية الخاصة بمقرر جرائم نظام البعث في العراق في المرحلة الثانية قد تشمل:
- مهارة التحليل:
- تحليل الوقائع المهمة في تاريخ العراق السياسي.
- قدرة الطلاب على فهم الفروق بين النظام الدكتاتوري والنظام الديمقراطي..
- مهارة القراءة:
- فهم النصوص القانونية الخاصة بحقوق الإنسان في الدول المحكومة بنظام دكتاتوري.

#### 10- بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة | اسم الوحدة أو الموضوع                                                                                                    | طريقة التعلم               | طريقة التقييم    |
|---------|---------|------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------|
| 1       | 1       | المعرفة النظرية        | مفهوم الجرائم وأقسامها ، وتعريف الجريمة لغة واصطلاحاً                                                                    | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| 2       | 1       | المعرفة النظرية        | أقسام الجرائم وجرائم نظام البعث وفق توثيق قانون المحكمة الجنائية العراقية العليا عام ٢٠٠٥م                               | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| 3       | 1       | المعرفة النظرية        | أنواع الجرائم الدولية                                                                                                    | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| 4       | 1       | المعرفة النظرية        | القرارات الصادرة من المحكمة الجنائية العليا ، وأبرز القضايا التي نظرت فيها المحكمة : جريمة مجزرة النجيف وجريمة قصف حلبجة | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| 5       | 1       | المعرفة النظرية        | جريمة عمليات الأنفال وجريمة إعدام عدد من التجار العراقيين                                                                | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| 6       | 1       | المعرفة النظرية        | جريمة قمع الإنتفاضة الشعبانية، وجريمة أحداث صلاة الجمعة                                                                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |



|                     |                               |                                                                                                                            |                    |   |    |
|---------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------|---|----|
|                     |                               | وتصفية الأحزاب الدينية والعلمانية<br>وجريمة تهجير الكرد الفيليين                                                           |                    |   |    |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | مستويات حماية المصالح القانونية<br>للمجتمع                                                                                 | المعرفة<br>النظرية | 1 | 7  |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | الجرائم النفسية وآلياتها                                                                                                   | المعرفة<br>النظرية | 1 | 8  |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | آثار الجرائم النفسية                                                                                                       | المعرفة<br>النظرية | 1 | 9  |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | الجرائم الاجتماعية وعسكرة<br>المجتمع                                                                                       | المعرفة<br>النظرية | 1 | 10 |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | موقف النظام البعثي من الدين                                                                                                | المعرفة<br>النظرية | 1 | 11 |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | تكملة الحديث عن موقف النظام<br>البعثي من الدين ونتائج الإنتفاضة<br>الشعبانية                                               | المعرفة<br>النظرية | 1 | 12 |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | انتهاكات القوانين العراقية وصور<br>من انتهاكات حقوق الإنسان<br>وجرائم السلطة                                               | المعرفة<br>النظرية | 1 | 13 |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | استعراض لبعض جرائم حزب<br>البعث بحق الشعب العراقي<br>والكلام عن بعض قرارات<br>الانتهاكات السياسية والعسكرية<br>لنظام البعث | المعرفة<br>النظرية | 1 | 14 |
|                     |                               | امتحان شهري                                                                                                                | المعرفة<br>النظرية | 1 | 15 |
| الأسئلة<br>المباشرة | المحاضرة والمناقشة<br>والحوار | أماكن السجون والاحتجاز لنظام<br>البعث                                                                                      | المعرفة<br>النظرية | 1 | 16 |



|    |   |                    |                                                                                |                               |                     |
|----|---|--------------------|--------------------------------------------------------------------------------|-------------------------------|---------------------|
| 17 | 1 | المعرفة<br>النظرية | الجرائم البيئية لنظام البعث في<br>العراق : التلوث الحربي<br>والإشعاعي          | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 18 | 1 | المعرفة<br>النظرية | استعمال الأسلحة المحرمة دوليا<br>كالأسلحة الكيميائية وآثارها في<br>بعض المناطق | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 19 | 1 | المعرفة<br>النظرية | التلوث بالمواد المشعة                                                          | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 20 | 1 | المعرفة<br>النظرية | تدمير المدن والقرى (سياسة<br>الأرض المحروقة)                                   | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 21 | 1 | المعرفة<br>النظرية | تجفيف الأهوار                                                                  | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 22 | 1 | المعرفة<br>النظرية | تجريف مساتين النخيل والأشجار<br>والمزروعات                                     | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 23 | 1 | المعرفة<br>النظرية | جرائم المقابر الجماعية                                                         | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 24 | 1 | المعرفة<br>النظرية | أحداث مقابر الإبادة الجماعية<br>المرتكبة من النظام البعثي في<br>العراق         | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 25 | 1 | المعرفة<br>النظرية | الأحداث الممتدة من ١٩٧٩ -<br>٢٠٠٣ وعلاقتها بالمقابر<br>الجماعية                | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 26 | 1 | المعرفة<br>النظرية | التصنيف الزمني لجرائم المقابر<br>الجماعية في العراق للمدة ١٩٦٣ -<br>٢٠٠٣       | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |
| 27 | 1 | المعرفة<br>النظرية | مقابر الإبادة الجماعية ذات<br>الصلة بالحرب العراقية الإيرانية                  | المحاضرة والمناقشة<br>والحوار | الأسئلة<br>المباشرة |





|    |   |                 |                                                                             |                            |                  |
|----|---|-----------------|-----------------------------------------------------------------------------|----------------------------|------------------|
| 28 | 1 | المعرفة النظرية | مقابر الإبادة الجماعية للأكراد ومقابر الإبادة الجماعية لضحايا مجزرة الأنفال | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| 29 | 1 | المعرفة النظرية | مقابر الإبادة الجماعية لضحايا الانتفاضة الشعبانية عام ١٩٩١                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| 30 | 1 | المعرفة النظرية | امتحان شهري                                                                 |                            |                  |

#### 11- تقييم المقرر

درجة الفصل الدراسي الأول (25) درجة، الامتحان النظري (25) درجات، من ضمنهم الحضور والنشاط.  
 درجة الفصل الدراسي الثاني (25) درجة، الامتحان النظري (25) درجات، من ضمنهم الحضور والنشاط.  
 درجة الامتحان النهائي (50) درجة لامتحان النظري  
 يصبح المجموع (100) درجة.

#### 12- مصادر التعلم والتدريس

|                                                                       |                                                                                                                                                                              |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                             | المنهاج الوزاري 'جرائم نظام البعث في العراق'                                                                                                                                 |
| المراجع الرئيسية (المصادر)                                            |                                                                                                                                                                              |
| الكتب والمراجع المساندة التي يوصى بها (المجلات العلمية، التقارير ...) | انقلاب 17 تموز 1968 - 2003، البداية المريبة والنهاية المأساة لسيف الدين الدوري.<br>التأسيس المعرفي لدراسة جرائم حزب البعث في العراق<br>لقيس ناصر ، وعبد الهادي معتوق الحاتم. |
| المراجع الالكترونية، مواقع الانترنت                                   | موقع الهيئة الوطنية العليا للمساءلة والعدالة                                                                                                                                 |



## نموذج وصف المقرر

|                                                      |                                                                                                                                                                                                                                              |                        |                       |              |               |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|--------------|---------------|
| 1. اسم المقرر:                                       |                                                                                                                                                                                                                                              |                        |                       |              |               |
| اللغة العربية العامة                                 |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 2. رمز المقرر:                                       |                                                                                                                                                                                                                                              |                        |                       |              |               |
| UOH201                                               |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 3. الفصل/ السنة:                                     |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 2025-2026 المرحلة الثانية                            |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 4. تاريخ اعداد هذا الوصف:                            |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 2025-9-18                                            |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 5. اشكال الحضور المتاحة:                             |                                                                                                                                                                                                                                              |                        |                       |              |               |
| التعليم الحضوري                                      |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي) |                                                                                                                                                                                                                                              |                        |                       |              |               |
| (30) ساعة /2وحدات.                                   |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)   |                                                                                                                                                                                                                                              |                        |                       |              |               |
| الاسم : م.م. هبي محمد توفيق إبراهيم                  |                                                                                                                                                                                                                                              |                        |                       |              |               |
| الايمل: hibamohamed.149@uohamdaniya.edu.iq           |                                                                                                                                                                                                                                              |                        |                       |              |               |
| 8. اهداف المقرر                                      |                                                                                                                                                                                                                                              |                        |                       |              |               |
| اهداف المادة الدراسية                                | 1. تعرف الطلبة على اهمية مادة اللغة العربية وآدابها، وفهم قواعد النحو العربي.<br>2. تطوير مهارات الطلاب اللغوية .<br>3. ان يكتسب الطالب المهارات اللازمة والقدرة على فهم التركيب النحوي والدلالي.<br>4. تنمية روح الاعتزاز باللغة العربية.   |                        |                       |              |               |
| 9. استراتيجيات التعليم والتعلم                       |                                                                                                                                                                                                                                              |                        |                       |              |               |
| الاستراتيجية                                         | 1. اكساب الطلبة معلومات ومفاهيم اللغة العربية ،و اعداد كوادر مدربة ومؤهلة للعمل في المؤسسات.<br>2. تعليم الطلبة كيفية توظيف قواعد العربية العامة في كتابتهم.<br>3. مناقشة الطلبة واجراء اختبارات لمناقشة اهم الأخطاء اللغوية والتعبيرية معهم |                        |                       |              |               |
| 10. بنية المقرر                                      |                                                                                                                                                                                                                                              |                        |                       |              |               |
| الاسبوع                                              | الساعات                                                                                                                                                                                                                                      | مخرجات التعلم المطلوبة | اسم الوحدة او الموضوع | طريقة التعلم | طريقة التقييم |





| الأسبوع | الساعات | مخرجات التعلم المطلوبة                                                              | اسم الوحدة / أو الموضوع     | طريقة التعليم              | طريقة التقييم    |
|---------|---------|-------------------------------------------------------------------------------------|-----------------------------|----------------------------|------------------|
| الاول   | 1       | عرض مفردات المنهاج، مقدمة، المبتدأ والخبر وأنواع المبتدأ وأنواع الخبر وحل التمارين. | المبتدأ والخبر              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني  | 1       | موضوع التشبيه وأركان التشبيه وأنواع التشبيه وحل التمارين                            | التشبيه                     | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث  | 1       | موضوع الجنس، وبيان أنواع الجنس القائم، والناقص وشروط الجنس القائم، وحل التمارين.    | الجنس                       | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع  | 1       | الأخطاء اللغوية، وبيان اقسامها .                                                    | الأخطاء اللغوية             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الخامس  | 1       | انواع الاخطاء اللغوية وتطبيق امثلة على جميع أنواع الأخطاء اللغوية                   | تطبيقات على الأخطاء اللغوية | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السادس  | 1       | 10 آيات من سورة الكهف للحفظ وشرحها بشكل مفصل مع المعاني.                            | النص القرآني الكريم         | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السابع  | 1       | امتحان                                                                              |                             |                            |                  |
| الثامن  | 1       | العدد ، بيان العلاقات بين العدد والمعدود وتذكير العدد وتأنيئه وحل التمارين.         | العدد                       | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| التاسع  | 1       | تعريف المفعول به ، أنواع المفعول به.                                                | المفعول به                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| العاشر  | 1       | تعريف المفعول المطلق ، بيان أغراض المفعول                                           | المفعول المطلق              | المحاضرة                   | الأسئلة المباشرة |





|                  |                               |                |                                                                                                      |   |                          |
|------------------|-------------------------------|----------------|------------------------------------------------------------------------------------------------------|---|--------------------------|
|                  | والمناقشة والحوار             | المطلق .       |                                                                                                      |   |                          |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المفعول لأجله  | تعريف المفعول لأجله<br>واخذ امثلة تطبيقية .                                                          | 1 | الحادي<br>عشر            |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المفعول معه    | تعريف المفعول معه<br>واخذ امثلة تطبيقية .                                                            | 1 | الثاني<br>عشر            |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | المفعول فيه    | تعريف المفعول فيه ،<br>أنواع المفعول فيه، حل<br>التمارين.                                            | 1 | الثالث<br>عشر            |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار |                | مراجعة للمنهج                                                                                        | 1 | الرابع<br>عشر            |
|                  |                               |                | امتحان                                                                                               | 1 | الخامس<br>عشر            |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | النعت          | تعريف النعت ، أنواع<br>النعت                                                                         | 1 | الاسبوع<br>السادس<br>عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | التوكيد        | تعريف التوكيد وأنواع<br>التوكيد                                                                      | 1 | الاسبوع<br>السابع<br>عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | العطف          | تعريف العطف ،<br>حروف العطف ، معاني<br>حروف العطف.                                                   | 1 | الاسبوع<br>الثامن<br>عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | البذل          | تعريف البذل ، اقسام<br>البذل ، بذل كل من كل ،<br>بذل بعض من كل ،<br>وبذل الاشتغال ، حل<br>التمارين . | 1 | الاسبوع<br>التاسع<br>عشر |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الأسماء الخمسة | معاني الأسماء الخمسة ،<br>اعراب الأسماء الخمسة<br>، شروط اعرابها<br>بالحروف ، حل<br>التمارين.        | 1 | الاسبوع<br>العشرون       |



|                  |                               |                       |                                                                                                                                                                   |   |                               |
|------------------|-------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------|
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الفاعل                | تعريف الفاعل ، أنواع<br>الفاعل ، حل تمارين<br>الفاعل.                                                                                                             | 1 | الاسبوع<br>الحادي<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | علامات الترقيم        | تعريف علامات الترقيم<br>، الفاصلة ، الفاصلة<br>المنقوطة، النقطة ،<br>علامة الحذف ، النقطتان<br>، علامة الاستفهام ،<br>علامة التكرار ، علامة<br>التنصيص ، القوسان. | 1 | الاسبوع<br>الثاني<br>والعشرون |
|                  |                               |                       | امتحان                                                                                                                                                            | 1 | الاسبوع<br>الثالث<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | بدر شاكر السياب       | حياته ونشأته                                                                                                                                                      | 1 | الاسبوع<br>الرابع<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | قصيدة انشودة<br>المطر | حفظ 8 ابيات من قصيدة<br>انشودة المطر وشرح<br>القصيدة وبيان معانيها<br>وتحليل القصيدة بلاغياً.                                                                     | 1 | الاسبوع<br>الخامس<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الأفعال الخمسة        | تعريف الأفعال الخمسة<br>، اعراب الأفعال<br>الخمسة.                                                                                                                | 1 | الاسبوع<br>السادس<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | نائب الفاعل           | تعريف نائب الفاعل،<br>امثلة لنائب الفاعل.                                                                                                                         | 1 | الاسبوع<br>السابع<br>والعشرون |



|   |                         |   |                            |                  |                  |
|---|-------------------------|---|----------------------------|------------------|------------------|
| ن | الاسبوع الثامن والعشرون | 1 | حل امثلة متنوعة            | المناقشة والحوار | الأسئلة المباشرة |
| ن | الاسبوع التاسع والعشرون | 1 | مراجعة عامة لمفردات المنهج | المناقشة والحوار | الأسئلة المباشرة |
| ن | الاسبوع الثلاثون        | 1 | امتحان                     |                  |                  |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس

|                                                                             |                                                                  |
|-----------------------------------------------------------------------------|------------------------------------------------------------------|
| لا يوجد                                                                     | الكتب المقررة المطلوبة (المنهجية ان وجدت)                        |
| شرح ابن عقيل على ألفية ابن مالك                                             | المراجع الاساسية (المصادر)                                       |
| معاني النحو ، د.فاضل السامرائي ، النحو الوافي لعباس حسن.                    | الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) |
| مواقع الألوكة ، مكتبة ودود ، المكتبة الوقفية ، مكتبة الأرشيف ، مكتبة النور. | المراجع الالكترونية، مواقع الانترنت                              |







## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                 |                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                  |                       |
| الارشاد والصحة النفسية                                                                                                                                                                                                                                                                                                                          |                       |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                  |                       |
| EPS301                                                                                                                                                                                                                                                                                                                                          |                       |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                |                       |
| 2025-2026 / المرحلة الثالثة                                                                                                                                                                                                                                                                                                                     |                       |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                       |                       |
| 2025/9/20                                                                                                                                                                                                                                                                                                                                       |                       |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                        |                       |
| التعليم الحضوري                                                                                                                                                                                                                                                                                                                                 |                       |
| 6. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                                         |                       |
| 60 ساعة / 4 وحدات                                                                                                                                                                                                                                                                                                                               |                       |
| 7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)                                                                                                                                                                                                                                                                                              |                       |
| الاسم: م.م ابراهيم ماميق سلطان الايميل: Ibrahim 1977 @uohamdaniya.edu.iq                                                                                                                                                                                                                                                                        |                       |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                 |                       |
| <p>1. بمفاهيم الارشاد والصحة النفسية من (اهداف الارشاد والصحة النفسية، ومصطلحاته واهم النظريات).</p> <p>2. مجال المدرس المرشد والمرشد التربوية ودوره في مساعدة الطالب في تحقيق التوافق النفسي والتربوي والاجتماعي.</p> <p>3. وسائل جمع المعلومات واهميتها ومزايا وعيوب كل منها.</p> <p>4. مجالس الاءاء والمعلمين ودورها في الارشاد التربوي.</p> | اهداف المادة الدراسية |
| 9. استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                                  |                       |
| <p>1. الفهم والاستيعاب.</p> <p>2. طرق حل المواقف المعقدة وتميز الجوانب المعرفية الصحيحة.</p> <p>3. أساليب العصف الذهني.</p> <p>4. التعلم والاكتشاف الذاتي من خلال الأنشطة اللاصفية والصفية.</p>                                                                                                                                                 | الاستراتيجية          |



## 10. بنية المقرر

| الأسبوع    | الساعات | مخرجات التعلم المطلوبة                  | اسم الوحدة / أو الموضوع                                                               | طريقة التعليم              | طريقة التقييم                            |
|------------|---------|-----------------------------------------|---------------------------------------------------------------------------------------|----------------------------|------------------------------------------|
| الاول      | 2       | المعرفة النظرية والتطبيق التربوي العملي | الارشاد ، معنى الارشاد التربوي ، نشأة وتطور الارشاد ومفاهيمه                          | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثاني     | 2       | المعرفة النظرية والتطبيق التربوي العملي | مبررات الارشاد ، وأهدافه ، مبادئ الارشاد والتوجيه                                     | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثالث     | 2       | المعرفة النظرية والتطبيق التربوي العملي | العلاقة بين الارشاد والعلوم الاخرى ، مجالات الارشاد                                   | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الرابع     | 2       | المعرفة النظرية والتطبيق التربوي العملي | الطرق الارشادية (الارشاد الفردي، الارشاد الجمعي )                                     | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الخامس     | 2       | المعرفة النظرية والتطبيق التربوي العملي | أسس الارشاد ، الفلسفية ، الاجتماعية                                                   | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| السادس     | 2       | المعرفة النظرية والتطبيق التربوي العملي | أسس الارشاد ، الخلقية ، الدينية ، النفسية                                             | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| السابع     | 2       | المعرفة النظرية والتطبيق التربوي العملي | نظريات الارشاد                                                                        | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثامن     | 2       | المعرفة النظرية والتطبيق التربوي العملي | نظريات التحليل النفسي                                                                 | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| التاسع     | 2       | المعرفة النظرية والتطبيق التربوي العملي | النظريات السلوكية                                                                     | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| العاشر     | 2       | المعرفة النظرية والتطبيق التربوي العملي | النظريات الوجودية والانسانية                                                          | المحاضرة والمناقشة والحوار | النشاطات اللاصفية                        |
| الحادي عشر | 2       | المعرفة النظرية والتطبيق التربوي العملي | المعلومات اللازمة للإرشاد ، أهمية المعلومات ، أنواع المعلومات                         | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثاني عشر | 2       | المعرفة النظرية والتطبيق التربوي العملي | وسائل جمع المعلومات ( السجل التراكمي ، دراسة الحالة ، السجل القصصي ، السيرة الذاتية ) | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |
| الثالث عشر | 2       | المعرفة النظرية والتطبيق التربوي العملي | وسائل جمع المعلومات ( الاختبارات والمقاييس ، الملاحظة، المقابلة )                     | المحاضرة والمناقشة والحوار | التغذية الراجعة عن طريق الأسئلة المباشرة |





|                                                |                               |                                                                                                         |                                            |   |                               |
|------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------|---|-------------------------------|
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | الارشاد والتوجيه في<br>المدرسة ، المدرس المرشد<br>- وظائفه واعداده ، المرشد<br>التربوي - وظائفه واعداده | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الرابع<br>عشر                 |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | مجالس الآباء والمعلمين<br>ودورها في الارشاد ،<br>الحاجة الى برامج الارشاد<br>في المدرسة                 | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الخامس<br>عشر                 |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | المشكلات التي يتناولها<br>الارشاد التربوي ، معنى<br>الصحة النفسية - أهدافها -<br>أهميتها                | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>السادس<br>عشر      |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | الشخص السوي واللاسوي<br>، معايير الشخصية السوية<br>واللاسوية                                            | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>السابع<br>عشر      |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | ملامح السلوك السوي<br>واللاسوي ، تكامل<br>الشخصية                                                       | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>الثامن<br>عشر      |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | الازمات الشخصية                                                                                         | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>التاسع<br>عشر      |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | معنى الازمة ، اسباب<br>الازمات النفسية<br>ومصادرها                                                      | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>العشرون            |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | الطرق السليمة لحل الازمة<br>النفسية ، الاحباط ،<br>الاضطرابات النفسية                                   | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>الحادي<br>والعشرون |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | الميكانيزمات الدفاعية<br>( الاساليب الدفاعية )                                                          | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>الثاني<br>والعشرون |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | منشأ السلوك الدفاعي ، نمو<br>ميكانيزمات الدفاع                                                          | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>الثالث<br>والعشرون |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | انوعها ( التعويض ،<br>التقمص ، التكون العكسي ،<br>الاسقاط ، التبرير وظاهره )                            | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>الرابع<br>والعشرون |
| التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة | المحاضرة<br>والمناقشة والحوار | نتائج السلوك الدفاعي ،<br>الاساليب الهربية ( الكبت ،<br>الانسحاب ، أحلام اليقظة ،<br>أحلام النوم)       | المعرفة النظرية<br>والتطبيق التربوي العملي | 2 | الاسبوع<br>الخامس<br>والعشرون |

|                               |   |                                            |                                                              |                               |                                                |
|-------------------------------|---|--------------------------------------------|--------------------------------------------------------------|-------------------------------|------------------------------------------------|
| الاسبوع<br>اساس<br>والعشرون   | 2 | المعرفة النظرية<br>والتطبيق التربوي العملي | الاساليب الهرايبية ،<br>النكوص ، الاسقاط ،<br>التعويض        | المحاضرة<br>والمناقشة والحوار | التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة |
| الاسبوع<br>السابع<br>والعشرون | 2 | المعرفة النظرية<br>والتطبيق التربوي العملي | الاعراض المرضية<br>والدفاعية والهروبية                       | المحاضرة<br>والمناقشة والحوار | التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة |
| الاسبوع<br>الثامن<br>والعشرون | 2 | المعرفة النظرية<br>والتطبيق التربوي العملي | التوافق ، معنى التوافق ،<br>طبيعة التوافق ، أنواع<br>التوافق | المحاضرة<br>والمناقشة والحوار | التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة |
| الاسبوع<br>التاسع<br>والعشرون | 2 | المعرفة النظرية<br>والتطبيق التربوي العملي | خصائص الشخص<br>المتوافق ، التكيف والتوافق<br>والعلاقة بينهما | المحاضرة<br>والمناقشة والحوار | التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة |
| الاسبوع<br>الثلاثون           | 2 | المعرفة النظرية<br>والتطبيق التربوي العملي |                                                              | المحاضرة<br>والمناقشة والحوار | التغذية الراجعة<br>عن طريق الأسئلة<br>المباشرة |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس

|                                                                     |                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                           | - مبادئ التوجيه والارشاد النفسي، سامي محمد ملحم، 2010، عمان، دار<br>المسيرة للنشر والتوزيع .<br>- زهران، حامد عبد السلام، 1980، التوجيه والارشاد النفسي، عالم<br>الكتب ، القاهرة .                                                                               |
| المراجع الاساسية (المصادر)                                          | - الارشاد النفسي والتوجيه التربوي ،مصطفى محمود الإمام (1991)<br>جامعة بغداد .<br>- مبادئ الارشاد النفسي للمرشدين النفسيين ، محمد احمد مشاقفة (2008)<br>عمان - دار المناهج للنشر والتوزيع .<br>- التوجيه والارشاد النفسي ،حامد زهران(2005) القاهرة<br>عالم الكتاب |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية،<br>التقارير) | - علم نفس الشخصية، داود عزيز حنا، وناظم هاشم العبيدي، 1990، جامعة<br>بغداد                                                                                                                                                                                       |
| المراجع الالكترونية، مواقع الانترنت                                 | - مكتبة النور (مكتبة الكترونية ) مجانية على محرك البحث google تحوي<br>على أنواع متنوعة من المصادر التخصصية .                                                                                                                                                     |





## نموذج وصف المقرر

|                                                    |                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. اسم المقرر:                                     |                                                                                                                                                                                                                                                                                             |
| مناهج وطرائق تدريس                                 |                                                                                                                                                                                                                                                                                             |
| 2. رمز المقرر:                                     |                                                                                                                                                                                                                                                                                             |
| EPS302                                             |                                                                                                                                                                                                                                                                                             |
| 3. الفصل/ السنة: نظام سنوي                         |                                                                                                                                                                                                                                                                                             |
| 2026-2025                                          |                                                                                                                                                                                                                                                                                             |
| 4. تاريخ اعداد هذا الوصف:                          |                                                                                                                                                                                                                                                                                             |
| 2025/9/17                                          |                                                                                                                                                                                                                                                                                             |
| 5. اشكال الحضور المتاحة: حضور يومي صباحي           |                                                                                                                                                                                                                                                                                             |
| التعليم الحضوري                                    |                                                                                                                                                                                                                                                                                             |
| 6. عدد الساعات الدراسية / عدد الوحدات              |                                                                                                                                                                                                                                                                                             |
| 60 ساعة / 4 وحدات                                  |                                                                                                                                                                                                                                                                                             |
| 7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر) |                                                                                                                                                                                                                                                                                             |
| الاسم:                                             | م.م. يونس ضرار جاسم                                                                                                                                                                                                                                                                         |
| الايميل:                                           | <a href="mailto:youniesdrar12345@uohamdaniya.edu.iq">youniesdrar12345@uohamdaniya.edu.iq</a>                                                                                                                                                                                                |
| 8. اهداف المقرر                                    |                                                                                                                                                                                                                                                                                             |
| اهداف المادة الدراسية                              | <p>يهدف مقرر مناهج وطرائق التدريس الى جعل الطالب قادرا على أن :</p> <ol style="list-style-type: none"> <li>1. يتعرف رسالة المدرس في المجتمع .</li> <li>2. يستنتج مسئوليات المدرس في المجتمع .</li> <li>3. يتعرف جوانب إعداد المدرس .</li> <li>4. يتعرف مفهوم الكفاية التدريسية .</li> </ol> |





|              |                                                                                                                                                |  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 5.           | يصنف الكفايات التدريسية اللازمة للمدرس.                                                                                                        |  |
| 9.           | استراتيجيات التعليم والتعلم                                                                                                                    |  |
| الاستراتيجية | 1. المحاضرة بأنواعها.<br>2. حلقات الحوار والمناقشة وطرح الأسئلة.<br>3. التعلم التعاوني.<br>4. طريقة المشروع.<br>5. استراتيجية الرؤوس المرقمة . |  |

| الأسبوع | الساعات | مخرجات التعلم المطلوبة                                                                   | اسم الوحدة / أو الموضوع                       | طريقة التعليم                       | طريقة التقييم   |
|---------|---------|------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------|-----------------|
| 1       | 2       | تمكن المتعلمين من تحديد المراحل التاريخية للطرائق التدريس والمناهج                       | التطور التاريخي لمفهوم كل من الطرائق والتدريس | المناقشة ،<br>المحاضرة،<br>المناظرة | تغذية راجعة     |
| 2       | 2       | تكوين الطلبة من تحديد مفهوم العلم وربطه مع المفاهيم الأخرى                               | التعرف على مفهوم العلم                        | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 3       | 2       | تمكين الطلبة من تحديد المصطلحات الحقائق العلمية والمفاهيم العلمية وإيجاد الاختلاف بينهما | التعرف على مفهوم كل من (الحقيقة ، والمبدأ)    | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |



|    |   |                                                                 |                                           |                                     |                 |
|----|---|-----------------------------------------------------------------|-------------------------------------------|-------------------------------------|-----------------|
| 4  | 2 | تمكن الطلبة من تعرف على خصائص العلم                             | أهمية العلم                               | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 5  | 2 | تمكن الطلبة من التمييز بين مهارات التفكير العلمي                | العلاقة بين الملاحظة والمقابلة والاستبيان | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 6  | 2 | تمكن الطلبة من الربط بين عناصر المنهج                           | التعرف على عناصر المنهج                   | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 7  | 2 | تمكن الطلبة من التعرف وتطبيق أنواع التقييم التربوي              | أنواع التقييم                             | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 8  | 2 | تمكن الطلبة من تحديد أنواع الأهداف التربوية وتطبيقاته الميدانية | أنواع الأهداف                             | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 9  | 2 | تمكن الطلبة من تحديد مصادر اشتقاق الأهداف التربوية              | مصادر الأهداف التربوية                    | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 10 | 2 | تمكن الطلبة من تحديد صياغة الأغراض السلوكية                     | دور في صياغة الهدف السلوكي                | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |



|                   |                                     |                              |                                                                    |   |    |
|-------------------|-------------------------------------|------------------------------|--------------------------------------------------------------------|---|----|
| اختبار            | المناقشة ،<br>المحاضرة،<br>المناظرة | اهداف التدريس                | تمكن الطلبة من تحديد<br>تصنيف الأهداف السلوكية                     | 2 | 11 |
| التغذية الراجعة   | المناقشة ،<br>المحاضرة،<br>المناظرة | المجالات الأهداف<br>السلوكية | تمكن الطلبة من كيفية<br>الربط بين المجالات<br>الأهداف              | 2 | 12 |
| التغذية الراجعة   | المناقشة ،<br>المحاضرة،<br>المناظرة | الطرائق التدريس              | تمكن الطلبة من تحديد<br>المفاهيم الاستراتيجية<br>والطرائق والاسلوب | 2 | 13 |
| التغذية الراجعة   | المناقشة ،<br>المحاضرة،<br>المناظرة | الطرائق التدريس              | تمكن الطلبة من معرفة<br>مواصفات التدريس الناجح                     | 2 | 14 |
| اخبار نصف<br>سنوي | المناقشة ،<br>المحاضرة،<br>المناظرة | الطرائق التدريس              | تمكن الطلبة من التعرف<br>على أنواع الطرائق<br>التدريسية            | 2 | 15 |
| التغذية الراجعة   | المناقشة ،<br>المحاضرة،<br>المناظرة | الطرائق التدريس              | تمكن الطلبة من معرفة<br>طريقة الالقاء وخطواتها                     | 2 | 16 |
| التغذية الراجعة   | المناقشة ،<br>المحاضرة،<br>المناظرة | الطرائق التدريس              | تمكن الطلبة من معرفة<br>طريقة المناقشة وذكر<br>خطواتها             | 2 | 17 |





|    |   |                                                                |                                          |                                     |                 |
|----|---|----------------------------------------------------------------|------------------------------------------|-------------------------------------|-----------------|
| 18 | 2 | تمكين الطلبة التعرف على طريقة المشكلات ومع ذكر عيوبها ومزاياها | الاختبارات الموضوعية                     | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 19 | 2 | تمكين الطلبة من تحديد من تمييز طرق الاختبارات                  | تصنيف الاختبارات<br>حسب الطريقة          | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 20 | 2 | تمكين الطلبة من التعرف على طريقة التعلم التعاوني               | استراتيجية                               | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 21 | 2 | امتحان شهري                                                    | معرفة مستوى الطلبة وما اكتسبه من معلومات | -                                   | امتحان شهري     |
| 22 | 2 | تمكين الطلبة من معرفة دور المعلم اثناء العمل التعاوني          | طرائق التدريس                            | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 23 | 2 | تمكين الطلبة من اتقان احدى طريقة على الواقع                    | طرائق التدريس                            | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 24 | 2 | تمكين الطلبة من تطبيق طريقة القياسية في التدريس                | الطرائق التدريس                          | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |



|    |   |                                                  |                    |                                     |                 |
|----|---|--------------------------------------------------|--------------------|-------------------------------------|-----------------|
| 25 | 2 | تمكين الطلبة من عمل نماذج للخطوات التدريس        | الطرائق التدريس    | المناقشة ،<br>المحاضرة،<br>المناظرة | اختبار          |
| 26 | 2 | تمكين الطلبة من تطبيق أساليب في التدريس          | الطرائق التدريس    | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 27 | 2 | تمكين الطلبة من التعرف على الزيارات الميدانية    | الزيارات الميداني  | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 28 | 2 | تمكين الطلبة من اعداد التقارير عند زيارة المدارس | الزيارات الميدانية | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 29 | 2 | تمكين الطلبة من عمل نماذج للخطوات التدريس        | الطرائق التدريس    | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |
| 30 | 2 | تمكين الطلبة من معرفة التقويم وخصائص التقويم     | التقويم            | المناقشة ،<br>المحاضرة،<br>المناظرة | التغذية الراجعة |



|                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. الكتب المقررة المطلوبة</p>                                                 | <p>- طرق التدريس العامة تخطيطها وتطبيقاتها التربوية ، وليد أحمد ، جابر ، دار الفكر للنشر والتوزيع 2013م</p> <p>- المنهج وطرق التدريس، رمضان مسعد بدوي ، دار الفكر للنشر والتوزيع 2011م</p> <p>- طرائق التدريس العامة وتقويمها ، عبد الحي أحمد السبحي محمد عبد الله القسايسة خوارزم العلمية ناشرون ومكتبات 2011م</p> <p>- طرائق التدريس ، خالد الصرايرة وآخرون ، دار المسيرة للطباعة والنشر 2010م</p> |
| <p>2. المراجع الرئيسية (المصادر)</p>                                             | <p>- استراتيجيات التدريس. علي منير الحصري دار الإعصار العلمي للطباعة والنشر 2015م</p> <p>2. الإبداع في التدريس ، خليل عبدالفتاح حماد ، ويسرى رسمي بدر ، مكتبة الفلاح للنشر والتوزيع 2014م</p>                                                                                                                                                                                                        |
| <p>أ. الكتب والمراجع التي يوصى بها<br/>( المجلات العلمية ، التقارير ، .... )</p> |                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>ب. المراجع الالكترونية، مواقع الانترنت</p>                                    | <p>- مكتبة النور (مكتبة الكترونية ) مجانية على محرك البحث google</p>                                                                                                                                                                                                                                                                                                                                 |





## نموذج وصف المقرر

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|    | الالكترونيك                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. | رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|    | PHY304                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 3. | الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|    | 2026-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. | تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|    | 2025/9/21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 5. | اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|    | التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. | عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|    | 90 ساعة نظري - 90 ساعة عملي / 7 وحدات                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7. | اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|    | الاسم: أ.م.د. ذوالفقار علي زكر<br>الايميل: thoalfiqar.physics@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8. | اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|    | <p>اهداف المادة الدراسية</p> <p>تعريف الطلبة لمبادئ علم الالكترونيك والقوانين الفيزيائية المستخدمة والدوائر الالكترونية بالاضافة الى التطبيق العملي لربط الدوائر الالكترونية والية عملها وتطبيقاتها داخل المختبر</p>                                                                                                                                                                                                                                                                                  |
| 9. | استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|    | <p>الاستراتيجية</p> <p>1. اكساب الطلبة معلومات ومفاهيم فيزيائية . اعداد كوادر مدربة ومؤهلة للعمل في المؤسسات</p> <p>2. التعرف على التطبيقات العلمية الخاصة بكل معرفة علمية.</p> <p>3. التعرف على الانواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ ونظريات والاحزمة الخاصة للدوائر الالكترونية تتعلق بمقرر الالكترونيك.</p> <p>تمكين الطالب من الحصول على المعرفة والفهم للقوانين العلمية في الفيزياء والتطبيقات العملية لعلوم الفيزياء والتحليل المنطقي والعلمي وتفسير للظواهر الفيزيائية</p> |

10. بنية المقرر

| الأسبوع    | الساعات | مخرجات التعلم المطلوبة     | اسم الوحدة / أو الموضوع                          | طريقة التعليم                               | طريقة التقييم    |
|------------|---------|----------------------------|--------------------------------------------------|---------------------------------------------|------------------|
| الاول      | 3       | المعرفة النظرية والتطبيقية | مقدمة عامة عن اشباه الموصلات                     | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الثاني     | 3       | المعرفة النظرية والتطبيقية | تصنيف المواد                                     | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الثالث     | 3       | المعرفة النظرية والتطبيقية | توزيع الالكترونات ومنسوب (مستوي فيرمي)           | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الرابع     | 3       | المعرفة النظرية والتطبيقية | اشباه الموصلات النقية                            | المحاضرة والمناقشة والحوار والتجربة العملية | امتحان شهري      |
| الخامس     | 3       | المعرفة النظرية والتطبيقية | التوصيل في المواد الصلبة ( الشبه الموصلة)        | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| السادس     | 3       | المعرفة النظرية والتطبيقية | التطعيم ( التشويب)                               | المحاضرة والمناقشة والحوار والتجربة العملية | الاسئلة المباشرة |
| السابع     | 3       | المعرفة النظرية والتطبيقية | الثنائي البلوري (ثنائي الوصلة)                   | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الثامن     | 3       | المعرفة النظرية والتطبيقية | الانحياز العكسي                                  | المحاضرة والمناقشة والحوار والتجربة العملية | امتحان شهري      |
| التاسع     | 3       | المعرفة النظرية والتطبيقية | مخطط حزم الطاقة للثنائي البلوري في حالة الانحياز | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| العاشر     | 3       | المعرفة النظرية والتطبيقية | حساب الجهد الحاجز                                | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الحادي عشر | 3       | المعرفة النظرية والتطبيقية | مقدمة عن تطبيقات الثنائي البلوري                 | المحاضرة والمناقشة والحوار والتجربة العملية | الاسئلة المباشرة |
| الثاني عشر | 3       | المعرفة النظرية والتطبيقية | المركبة المستمرة                                 | المحاضرة والمناقشة والحوار                  | الأسئلة المباشرة |





|                         |                  |                            |                                                 |                                             |                  |
|-------------------------|------------------|----------------------------|-------------------------------------------------|---------------------------------------------|------------------|
|                         | والتجربة العملية |                            |                                                 |                                             |                  |
| الثلث عشر               | 3                | المعرفة النظرية والتطبيقية | كفاءة التعديل للمعدل النصف الموجي $h_{HW}$      | المحاضرة والمناقشة والحوار والتجربة العملية | امتحان شهري      |
| الرابع عشر              | 3                | المعرفة النظرية والتطبيقية | كفاءة التعديل للمعدل الموجي الكامل $h_{FW}$     | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الخامس عشر              | 3                | المعرفة النظرية والتطبيقية | <u>دوائر التحديد والازلام</u>                   | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الاسبوع السادس عشر      | 3                | المعرفة النظرية والتطبيقية | مقدمة ترانزستور ثنائي القطبية                   | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الاسبوع السابع عشر      | 3                | المعرفة النظرية والتطبيقية | انواع الانحياز للترانزستور                      | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الاسبوع الثامن عشر      | 3                | المعرفة النظرية والتطبيقية | طرق ربط ترانزستور                               | المحاضرة والمناقشة والحوار والتجربة العملية | امتحان شهري      |
| الاسبوع التاسع عشر      | 3                | المعرفة النظرية والتطبيقية | خط الحمل ونقطة العمل                            | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الاسبوع العشرون         | 3                | المعرفة النظرية والتطبيقية | تأثير درجة الحرارة واستقرارية العمل للترانزستور | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الاسبوع الحادي والعشرون | 3                | المعرفة النظرية والتطبيقية | دوائر انحياز الترانزستور                        | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الاسبوع الثاني والعشرون | 3                | المعرفة النظرية والتطبيقية | دائرة الانحياز الذاتي                           | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |
| الاسبوع الثالث والعشرون | 3                | المعرفة النظرية والتطبيقية | دائرة انحياز مقسم الجهد                         | المحاضرة والمناقشة والحوار والتجربة العملية | امتحان شهري      |
| الاسبوع الرابع والعشرون | 3                | المعرفة النظرية والتطبيقية | مقدمة : مضخمات ترانزستور ثنائي القطبية          | المحاضرة والمناقشة والحوار والتجربة العملية | الأسئلة المباشرة |





|                  |                                             |                                             |                            |   |                         |
|------------------|---------------------------------------------|---------------------------------------------|----------------------------|---|-------------------------|
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار والتجربة العملية | الاستجابة الترددية للمضخم                   | المعرفة النظرية والتطبيقية | 3 | الاسبوع الخامس والعشرون |
| امتحان شهري      | المحاضرة والمناقشة والحوار والتجربة العملية | زوج دار لنكتون                              | المعرفة النظرية والتطبيقية | 3 | الاسبوع السادس والعشرون |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار والتجربة العملية | المضخمات متعددة المراحل                     | المعرفة النظرية والتطبيقية | 3 | الاسبوع السابع والعشرون |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار والتجربة العملية | ترانزسترات تأثير المجال                     | المعرفة النظرية والتطبيقية | 3 | الاسبوع الثامن والعشرون |
| الأسئلة المباشرة | المحاضرة والمناقشة والحوار والتجربة العملية | منحنيات الخواص لترانزسترات تأثير المجال     | المعرفة النظرية والتطبيقية | 3 | الاسبوع التاسع والعشرون |
| امتحان شهري      | المحاضرة والمناقشة والحوار والتجربة العملية | ترانزسترات تأثير المجال ذي الاوكسيد المعدني | المعرفة النظرية والتطبيقية | 3 | الاسبوع الثلاثون        |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير..... الخ

#### 12. مصادر التعلم والتدريس

|                                                                  |                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        |                                                                                                                              |
| المراجع الاساسية (المصادر)                                       | 1- فيزياء الالكترونيات (صبيحي الراوي)<br>2- مبادئ الالكترونيات (مالفيولو)                                                    |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الالكترونية، مواقع الإنترنت                              | مواقع الانترنت التي تخص الحالة الصلبة                                                                                        |



## نموذج وصف المقرر

|                                                          |         |                                                                                                                                                                                                                                                                                                                                                                                |                                     |                                |                                  |
|----------------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------|----------------------------------|
| 1. اسم المقرر:                                           |         | الدوال المعقدة                                                                                                                                                                                                                                                                                                                                                                 |                                     |                                |                                  |
| 2. رمز المقرر:                                           |         | PHY307                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                |                                  |
| 3. الفصل/ السنة:                                         |         | 2026-2025                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                |                                  |
| 4. تاريخ اعداد هذا الوصف:                                |         | 2025/9/15                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                |                                  |
| 5. اشكال الحضور المتاحة:                                 |         | التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                |                                     |                                |                                  |
| 6. عدد الساعات الدراسية (الكلية) // عدد الوحدات (الكلية) |         | 60 ساعة/ 4 وحدات                                                                                                                                                                                                                                                                                                                                                               |                                     |                                |                                  |
| 7. اسم مسؤول المقرر الدراسي                              |         | الاسم: م.م. محمد باسل عبد الجبار                                                                                                                                                                                                                                                                                                                                               |                                     |                                |                                  |
| 8. اهداف المقرر                                          |         | الايمل mohammedbasil1994@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                    |                                     |                                |                                  |
| اهداف المادة الدراسية                                    |         | 1. تعريف الطلبة بالأعداد العقدية وخواصها والدوال المتعلقة بها والتكاملات العقدية والمشتقات العقدية بالإضافة الى المتتابعات والمتسلسلات الخاصة بالأعداد العقدية<br>2. تمكين الطلبة من حل المسائل الحسابية المتعلقة بمادة الدوال المعقدة                                                                                                                                         |                                     |                                |                                  |
| 9. استراتيجيات التعلم والتعليم                           |         |                                                                                                                                                                                                                                                                                                                                                                                |                                     |                                |                                  |
| الاستراتيجية                                             |         | 1. اكساب الطلبة المعلومات والمفاهيم الخاصة بالرياضيات والدوال المعقدة<br>2. اعداد كوادر منيرة ومؤهلة للعمل في المؤسسات التعليمية<br>3. والتعرف على التطبيقات العلمية الخاصة بكل معرفة علمية.<br>4. التعرف على الانواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ ونظريات في مجال الرياضيات<br>5. تمكين الطالب من الحصول على المعرفة والفهم للقوانين العلمية في الرياضيات |                                     |                                |                                  |
| 10. بنية المقرر                                          |         |                                                                                                                                                                                                                                                                                                                                                                                |                                     |                                |                                  |
| الاسبوع                                                  | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                                                                                         | اسم الوحدة او الموضوع               | طريقة التعلم                   | طريقة التقييم                    |
| الاسبوع                                                  | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                                                                                         | اسم الوحدة / او الموضوع             | طريقة التعلم                   | طريقة التقييم                    |
| الاول                                                    | 2       | العدد المعقد-خواصه- العمليات الحسابية                                                                                                                                                                                                                                                                                                                                          | العدد المعقد                        | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة + الواجب اليومي |
| الثاني                                                   | 2       | المرافق والقيمة المطلقة                                                                                                                                                                                                                                                                                                                                                        | المرافق والقيمة المطلقة             | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة + الواجب اليومي |
| الثالث                                                   | 2       | الاحداثيات القطبية والتمثيل الهندسي                                                                                                                                                                                                                                                                                                                                            | الاحداثيات القطبية والتمثيل الهندسي | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة + الواجب اليومي |
| الرابع                                                   | 2       | القوى والجذور                                                                                                                                                                                                                                                                                                                                                                  | القوى والجذور                       | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة + الواجب اليومي |
| الخامس                                                   | 2       | التغير المعقد                                                                                                                                                                                                                                                                                                                                                                  | التغير المعقد                       | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة + الواجب اليومي |





|                                    |                                   |                         |                                             |   |                         |
|------------------------------------|-----------------------------------|-------------------------|---------------------------------------------|---|-------------------------|
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | النهايات                | النهايات                                    | 2 | السادس                  |
| امتحان                             | المحاضرة والمناقشة<br>وحل المسائل | الاستمرارية             | الاستمرارية                                 | 2 | السابع                  |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | المشتقة                 | المشتقة                                     | 2 | الثامن                  |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | الدوال التحليلية        | الدوال التحليلية                            | 2 | التاسع                  |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | الدوال التحليلية        | الدوال التحليلية                            | 2 | العاشر                  |
| الأسئلة المباشرة<br>+امتحان        | المحاضرة والمناقشة<br>وحل المسائل | الدوال التوافقية        | الدوال التوافقية                            | 2 | الحادي عشر              |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | الدالة الاسية           | الدالة الاسية                               | 2 | الثاني عشر              |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | الدالة اللوغاريتمية     | الدالة اللوغاريتمية                         | 2 | الثالث عشر              |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | الدالة المثلثية         | الدالة المثلثية                             | 2 | الرابع عشر              |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | الدالة المثلثية العكسية | الدالة المثلثية العكسية                     | 2 | الخامس عشر              |
| امتحان                             | المحاضرة والمناقشة<br>وحل المسائل | الدالة الزائدية         | الدالة الزائدية                             | 2 | الاسبوع السادس عشر      |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | تكامل العدد المعقد      | تكامل العدد المعقد                          | 2 | الاسبوع السابع عشر      |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | مسارات التكامل          | مسارات التكامل                              | 2 | الاسبوع الثامن عشر      |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | مير هنة كوشي كورسا      | مير هنة كوشي كورسا                          | 2 | الاسبوع التاسع عشر      |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | التكاملات الغير محددة   | التكاملات الغير محددة                       | 2 | الاسبوع العشرون         |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | صيغة كوشي التكاملية     | صيغة كوشي التكاملية                         | 2 | الاسبوع الحادي والعشرون |
| امتحان                             | المحاضرة والمناقشة<br>وحل المسائل | مبرهنت                  | مبرهنت                                      | 2 | الاسبوع الثاني والعشرون |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | المتتابعات والمتسلسلات  | المتتابعات والمتسلسلات-<br>أنواع المتسلسلات | 2 | الاسبوع الثالث والعشرون |
| الأسئلة المباشرة                   | المحاضرة والمناقشة                | سلاسل القوى             | سلاسل القوى                                 | 2 | الاسبوع الرابع والعشرون |



|                                    |                                   |                     |                     |                                    |
|------------------------------------|-----------------------------------|---------------------|---------------------|------------------------------------|
| الأسئلة المباشرة<br>+الواجب اليومي | حل المسائل                        |                     |                     | الاربع<br>والعشرون                 |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | سلسلة تايلر         | سلسلة تايلر         | 2<br>الاسبوع<br>الخامس<br>والعشرون |
| امتحان                             | المحاضرة والمناقشة<br>وحل المسائل | سلسلة لوران         | سلسلة لوران         | 2<br>الاسبوع<br>السادس<br>والعشرون |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | النقاط الشاذة       | النقاط الشاذة       | 2<br>الاسبوع<br>السابع<br>والعشرون |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | تصنيف النقاط الشاذة | تصنيف النقاط الشاذة | 2<br>الاسبوع<br>الثامن<br>والعشرون |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | اصفار الرواسب       | اصفار الرواسب       | 2<br>الاسبوع<br>التاسع<br>والعشرون |
| الأسئلة المباشرة<br>+الواجب اليومي | المحاضرة والمناقشة<br>وحل المسائل | ميرهنة الرواسب      | ميرهنة الرواسب      | 2<br>الاسبوع<br>الثلاثون           |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والواجبات والامتحانات اليومية والشقوية والشهرية والتحريرية.... الخ

#### 12. مصادر التعلم والتدريس

|                                                                  |                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        | الدوال المعقدة: سمير بشير حديد، يحيى عبد سعيد                                                                                |
| المراجع الاساسية (المصادر)                                       | الدوال المعقدة: سمير بشير حديد، يحيى عبد سعيد                                                                                |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الإلكترونية، مواقع الانترنت                              | مواقع الانترنت التي تهتم بمجال الرياضيات                                                                                     |



| Sl. No. | Name of the Candidate | Roll No. | Grade | Remarks |
|---------|-----------------------|----------|-------|---------|
| 1       | Abhishek Kumar        | 101      | B     |         |
| 2       | Amit Singh            | 102      | C     |         |
| 3       | Anjali Sharma         | 103      | A     |         |
| 4       | Arjun Reddy           | 104      | D     |         |
| 5       | Ashika Singh          | 105      | B     |         |
| 6       | Ashish Kumar          | 106      | C     |         |
| 7       | Ashish Singh          | 107      | A     |         |
| 8       | Ashish Singh          | 108      | D     |         |
| 9       | Ashish Singh          | 109      | B     |         |
| 10      | Ashish Singh          | 110      | C     |         |
| 11      | Ashish Singh          | 111      | A     |         |
| 12      | Ashish Singh          | 112      | D     |         |
| 13      | Ashish Singh          | 113      | B     |         |
| 14      | Ashish Singh          | 114      | C     |         |
| 15      | Ashish Singh          | 115      | A     |         |
| 16      | Ashish Singh          | 116      | D     |         |
| 17      | Ashish Singh          | 117      | B     |         |
| 18      | Ashish Singh          | 118      | C     |         |
| 19      | Ashish Singh          | 119      | A     |         |
| 20      | Ashish Singh          | 120      | D     |         |

The above table shows the results of the examination held on 10/10/2020. The candidates are ranked according to their marks in the examination. The marks are given in the column 'Grade'. The 'Remarks' column is left blank for the use of the examiner.

The total number of candidates who appeared for the examination is 20. The total number of candidates who passed is 10. The pass percentage is 50%.

The marks of the candidates are as follows:

| Sl. No. | Name of the Candidate | Grade |
|---------|-----------------------|-------|
| 1       | Abhishek Kumar        | B     |
| 2       | Amit Singh            | C     |
| 3       | Anjali Sharma         | A     |
| 4       | Arjun Reddy           | D     |
| 5       | Ashika Singh          | B     |
| 6       | Ashish Kumar          | C     |
| 7       | Ashish Singh          | A     |
| 8       | Ashish Singh          | D     |
| 9       | Ashish Singh          | B     |
| 10      | Ashish Singh          | C     |
| 11      | Ashish Singh          | A     |
| 12      | Ashish Singh          | D     |
| 13      | Ashish Singh          | B     |
| 14      | Ashish Singh          | C     |
| 15      | Ashish Singh          | A     |
| 16      | Ashish Singh          | D     |
| 17      | Ashish Singh          | B     |
| 18      | Ashish Singh          | C     |
| 19      | Ashish Singh          | A     |
| 20      | Ashish Singh          | D     |



## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |
| التيرموديناميك                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                       |
| PHY305                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |
| 2026-2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       |
| 2025/9/1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |
| التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |
| 6. عدد الساعات الدراسية (الكلية)/ عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |
| 90 ساعة/ 5 وحدات                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                       |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                       |
| الاسم: م.د. عبدالرحمن اسماعيل احمد                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | الايميل: a.i.ahmed@uohamdaniya.edu.iq |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | اهداف المادة الدراسية                 |
| <p>1. تطبيق المعادلات الترموديناميكية: القدرة على استخدام المعادلات والمفاهيم الترموديناميكية لحساب الطاقة والعمل والكفاءة الحرارية في الأنظمة الحرارية المختلفة.</p> <p>2. تحليل الدورات الحرارية: القدرة على تحليل وفهم الدورات الحرارية المختلفة، بما في ذلك دورة كارنو.</p> <p>3. التفكير النقدي والحلول الإبداعية: تنمية القدرة على التفكير النقدي وإبتكار حلول إبداعية لمشاكل الترموديناميك المعقدة.</p> <p>4. التحليل الرياضي: تطوير مهارات التحليل الرياضي في سياق الترموديناميك، بما في ذلك فهم العلاقات الرياضية بين الكميات الترموديناميكية.</p> <p>5. التعامل مع البيانات والتجارب: القدرة على تحليل البيانات الترموديناميكية وفهم نتائج التجارب العملية وتطبيقها على المفاهيم النظرية.</p> |                                       |
| 9. استراتيجيات التعلم والتعليم                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | الاستراتيجية                          |
| <p>1. إكساب الطلبة معلومات ومفاهيم فيزيائية: تهدف الاستراتيجية إلى تزويد الطلبة بالمعلومات والمفاهيم الأساسية في مجال الترموديناميك، وإعداد كوادر مدربة ومؤهلة للعمل في المؤسسات التعليمية والبحثية.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |



2. التعرف على التطبيقات العلمية: تعزيز فهم الطلبة للتطبيقات العملية والعلمية لمبادئ الترموداينميك في الحياة اليومية وفي المجالات الصناعية والبحثية.

3. التعرف على أنواع المعرفة العلمية: تمكين الطلبة من التمييز بين أنواع المعرفة العلمية المختلفة، مثل الحقائق والمفاهيم والمبادئ والنظريات في مجال الترموداينميك، بالإضافة إلى التعرف على الأجهزة والتقنيات المستخدمة في قياس وتحليل الظواهر الترموداينميكية وتجار الترموداينميك.

4. تمكين الطالب من الحصول على المعرفة والفهم: تعزيز قدرة الطلبة على فهم القوانين العلمية في الترموداينميك وتطبيقاتها العملية، وتنمية مهارات التحليل المنطقي والعلمي لتفسير الظواهر الفيزيائية المرتبطة بالترموداينميك.

#### 10. بنية المقرر

| الاسبوع | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة او الموضوع                                                                                                                                                                                                            | طريقة التعلم               | طريقة التقييم    |
|---------|---------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------|
| الاسبوع | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة / أو الموضوع                                                                                                                                                                                                          | طريقة التعليم              | طريقة التقييم    |
| الاول   | 3       | المعرفة النظرية والتحليل التطبيقي | الفصل الأول: مفاهيم أساسية: معنى الترموداينميك ، تقديم مفاهيم أساسية: الكيان (النظام) وأنواعه (الكيان الحقيقي والكيان المثالي) ، حدود الكيان المحيط ، النظام وأنواعه (المفتوح والمغلق والمعزول) ، الجدار الاديباتيكي والداياثرمي | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني  | 3       | المعرفة النظرية والتحليل التطبيقي | الخواص الضمنية وغير الضمنية ، العمليات في الترموداينميك، العمليات العكسية وغير العكسية. التوازن الحراري والتوازن الديناميكي الحراري ، خواص الكيان (المركزة والشاملة ، المستقلة                                                   |                            |                  |



|                            |                                                                                                                                                                      |                                      |   |            |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---|------------|
|                            |                                                                                                                                                                      | والثانية) حالة النظام                |   |            |
| المحاضرة والمناقشة والحوار | العمليات<br>الترموديناميكية :<br>الادبيات (الكيفية)<br>الايروثرمية ، الدورية<br>والعكسية واللاعكسية ،<br>الطاقة (العلاقة بين<br>الحرارة والشغل) ،<br>القانون الصفري. | المعرفة النظرية والتحليل<br>التطبيقي | 3 | الثالث     |
| المحاضرة والمناقشة والحوار | الفصل الثاني: معادلات<br>الحالة<br>معادلة الحالة للغاز<br>المثالي والطريقة<br>التجريبية لاشتقاقها ،                                                                  | المعرفة النظرية والتحليل<br>التطبيقي | 3 | الرابع     |
| المحاضرة والمناقشة والحوار | الغازات الحقيقية (غير<br>المثالية) ، معادلات<br>الحالة للغازات الحقيقية                                                                                              | المعرفة النظرية والتحليل<br>التطبيقي | 3 | الخامس     |
| المحاضرة والمناقشة والحوار | معادلة الحالة لغاز فان<br>درفالز وايجاد ثوابتها .                                                                                                                    | المعرفة النظرية والتحليل<br>التطبيقي | 3 | السادس     |
| المحاضرة والمناقشة والحوار | الفصل الثالث: نظريات<br>رياضة مفيدة                                                                                                                                  | المعرفة النظرية والتحليل<br>التطبيقي | 3 | السابع     |
| المحاضرة والمناقشة والحوار | متطابقات مفيدة ، دالة<br>الحالة وشروطها.                                                                                                                             | المعرفة النظرية والتحليل<br>التطبيقي | 3 | الثامن     |
| المحاضرة والمناقشة والحوار | دالة المسار ، التمددية<br>والانضغاطية.                                                                                                                               | المعرفة النظرية والتحليل<br>التطبيقي | 3 | التاسع     |
| امتحان شهري                | الفصل الرابع:<br>خصائص المواد النقية<br>أطوار المادة النقية<br>(الصلبة ، السائلة ،<br>الغازية) .                                                                     | المعرفة النظرية والتحليل<br>التطبيقي | 3 | العاشر     |
| المحاضرة والمناقشة والحوار | الغاز والبخار<br>وخصائص الأبخرة ،<br>الأبخرة المشبعة وغير<br>المشبعة ، سلوك المواد<br>النقية ، السطح البياني<br>لمادة نقية حقيقية .                                  | المعرفة النظرية والتحليل<br>التطبيقي | 3 | الحادي عشر |
| المحاضرة والمناقشة والحوار | معادلات كلايرون ،<br>تطبيقات معادلات<br>كلايرون.                                                                                                                     | المعرفة النظرية والتحليل<br>التطبيقي | 3 | الثاني عشر |
| المحاضرة والمناقشة والحوار | الفصل الخامس: القانون<br>الأول في الترموديناميك<br>:تجارب جول ، نص<br>القانون الاول ، صيغة<br>القانون الاول كقانون<br>لحفظ الطاقة ، تطبيقات<br>القانون الاول ، نتائج | المعرفة النظرية والتحليل<br>التطبيقي | 3 | الثالث عشر |





|                            |                                                                                                                                                                           |                                   |   |                    |  |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---|--------------------|--|
|                            |                                                                                                                                                                           | القانون الأول .                   |   |                    |  |
| المحاضرة والمناقشة والحوار | معنى الانتالبي ، التمدد الحر للغاز ، التمدد الحقيقي للغاز ، الشغل المنجز في العمليات الكظمية والايروثرمية وعمليات ثابتة الحجم ، شغل الغاز في العمليات ثابتة درجة الحرارة. | المعرفة النظرية والتحليل التطبيقي | 3 | الرابع عشر         |  |
| المحاضرة والمناقشة والحوار | السعة الحرارية تحت ضغط ثابت والسعة الحرارية تحت حجم ثابت والعلاقة بينهما وثباتها عمليا. مفهوم الشغل في الترموديناميك، اعتماد الشغل على المسار.                            | المعرفة النظرية والتحليل التطبيقي | 3 | الخامس عشر         |  |
| المحاضرة والمناقشة والحوار | الفصل السادس: القانون الثاني في الترموديناميك صيغة القانون الثاني في الترموديناميك ( كلاسيوس ، كلفن- بلانك ) ، ماكعة دورة كارنو ،                                         | المعرفة النظرية والتحليل التطبيقي | 3 | الاسبوع السادس عشر |  |
| المحاضرة والمناقشة والحوار | ربط القانون الاول والقانون الثاني والنتائج المترتبة على هذا الربط عند تطبيقها على غاز مثالي. مثال القانون الأول، القانون الثاني.                                          | المعرفة النظرية والتحليل التطبيقي | 3 | الاسبوع السابع عشر |  |
| المحاضرة والمناقشة والحوار | المكانن الحرارية- دورتها- كفاءتها، المضخة الحرارية.                                                                                                                       | المعرفة النظرية والتحليل التطبيقي | 3 | الاسبوع الثامن عشر |  |
| المحاضرة والمناقشة والحوار | الفصل السابع: الانتروبي (القصور الذاتي) تعريف الانتروبي ، حساب التغير في الانتروبي ، ميذا ازدياد الانتروبي في الكون والنظام .                                             | المعرفة النظرية والتحليل التطبيقي | 3 | الاسبوع التاسع عشر |  |
| المحاضرة والمناقشة والحوار | العلاقة بين الانتروبي ودرجة الحرارة ، نظرية كلاسيوس، دالة جيبس.                                                                                                           | المعرفة النظرية والتحليل التطبيقي | 3 | الاسبوع العشرون    |  |
| المحاضرة والمناقشة والحوار | دالة هيلمولتز ، معادلات الجهود                                                                                                                                            | المعرفة النظرية والتحليل التطبيقي | 3 | الاسبوع الحادي     |  |





|                               |   |                                        |                                                                                                      |                               |
|-------------------------------|---|----------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------|
| والعشرون                      |   | الثرموديناميكية ،<br>معادلات ماكسويل . |                                                                                                      |                               |
| الاسبوع<br>الثاني<br>والعشرون | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | الفصل الثامن: النظرية<br>الحركية للغازات<br>لمحة تاريخية، المبادئ<br>الأساسية للنظرية<br>الحركية .   | المحاضرة والمناقشة<br>والحوار |
| الاسبوع<br>الثالث<br>والعشرون | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | التصادمات بجدار<br>متحرك، القوى الداخلية<br>للجزيئات، الظواهر<br>الانتقالية ، متوسط<br>المسار الحر . | المناقشة والحوار              |
| الاسبوع<br>الرابع<br>والعشرون | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | ظاهرة الانتشار ،<br>ظاهرة اللزوجة ،<br>ظاهرة التوصيل<br>الحراري                                      | المناقشة والحوار              |
| الاسبوع<br>الخامس<br>والعشرون | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | الفصل التاسع:<br>الإحصائية<br>حالات الطاقة                                                           | المناقشة والحوار              |
| الاسبوع<br>سادس<br>والعشرون   | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | مستويات الطاقة                                                                                       | المناقشة والحوار              |
| الاسبوع<br>السابع<br>والعشرون | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | الاحتمالية                                                                                           | المناقشة والحوار              |
| الاسبوع<br>الثامن<br>والعشرون | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | احصاء ماكسويل-<br>بولتزمان                                                                           | المناقشة والحوار              |
| الاسبوع<br>التاسع<br>والعشرون | 3 | المعرفة النظرية والتحليل<br>التطبيقي   | احصاء فيرمي - ديراك                                                                                  | المناقشة والحوار              |
| الاسبوع<br>الثلاثون           | 3 |                                        | احصاء بوز - انشتاين.                                                                                 | المناقشة والحوار              |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير والواجبات .... الخ

#### 12. مصادر التعلم والتدريس

تأليف د. امجد عبد الرزاق كرجية ، د. عبد الحميد العبد.



|                                                                  |                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|                                                                  |                                                                                                                              |
| 2- التحرك الحراري والنظرية الحركية للغازات                       | 3- تأليف د.عبد الرحمن محمود الجميلي ، د.مؤيد جبرائيل ، د.موسى عباس محمد.                                                     |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الالكترونية، مواقع الانترنت                              | مواقع الانترنت التي تخص مادة الثرموداينمك                                                                                    |



## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | طاقة شمسية                    |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | PHY308                        |
| 3. الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2025-2026                     |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2025/9/19                     |
| 5. اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | التعليم الحضوري               |
| 6. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 60 ساعة / 4 وحدات             |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | الاسم: أ.م. رجاء عبدالله بشير |
| الايمل: <a href="mailto:ragaa.habsh@uohamdaniya.edu.iq">ragaa.habsh@uohamdaniya.edu.iq</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |
| 8. اهداف المقرر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | اهداف المادة الدراسية         |
| <p>1-تعريف الطلبة على مفهوم الطاقة وخصائص الطاقة ومصادرها وتصنيف اشكال الطاقة وأنواع مصادرها ومبادئ التشغيل وتقنيات استخدام الطاقة .</p> <p>2-تهدف الى التعرف على مصادر الطاقة التقليدية ( الاحفورية) وهي اولا طاقة الفحم وثانيا طاقة البترول وثالثا طاقة الغاز الطبيعي ورابعا الطاقة النووية</p> <p>3-ان يعرف الطلبة مصادر الطاقة المتجددة وهي اولا طاقة الرياح ثانيا الطاقة المائية ثالثا الطاقة الشمسية رابعا الطاقة البيولوجية خامسا الطاقة الجيوحرارية سادسا الطاقة الهيدروجينية سابعا طاقة البرق .</p> <p>4-ان يفهم الطلاب توليد وإنتاج الطاقة الكهربائية (تحويل الطاقة ) والتي تشمل اولا خصائصها وميزاتها ثانيا محدداتها ومشاكلها ثالثا تكنولوجيا تحويل الطاقة .</p> <p>5-معرفة المشكلات الناتجة عن استخدامات الطاقة وتشمل اولا المشكلات العامة ثانيا المشكلات البيئية ثالثا المشكلات الاقتصادية</p> |                               |





| 9. استراتيجيات التعليم والتعلم |         |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                 |                            |                                |
|--------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------|--------------------------------|
| الاستراتيجية                   |         | 1- اكساب الطلبة معلومات ومفاهيم فيزيائية . اعداد كوادر مدربة ومؤهلة للعمل في المؤسسات والتعزف على التطبيقات العلمية الخاصة بكل معرفة علمية.<br>2- التعرف على الانواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ ونظريات والاجهزة الخاصة بقياس عناصر الطقس والمناخ.<br>3- تمكين الطالب من الحصول على المعرفة والفهم للقوانين العلمية في الفيزياء والتطبيقات العملية لعلوم الفيزياء والتحليل المنطقي والعلمي وتفسير للظواهر الفيزيائية |                                                                 |                            |                                |
| 10. بنية المقرر                |         |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                 |                            |                                |
| الاسبوع                        | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                                                                                                                                                     | اسم الوحدة او الموضوع                                           | طريقة التعلم               | طريقة التقييم                  |
| الاسبوع                        | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                                                                                                                                                     | اسم الوحدة / او الموضوع                                         | طريقة التعلم               | طريقة التقييم                  |
| الاول                          | 2       | التعرف على مفهوم الطاقة وانواعها                                                                                                                                                                                                                                                                                                                                                                                                           | مفهوم الطاقات +انواع الطاقات                                    | المحاضرة والمناقشة والحوار | الأسئلة المباشرة               |
| الثاني                         | 2       | التعرف على الطاقات المتجددة و الغير المتجددة                                                                                                                                                                                                                                                                                                                                                                                               | الطاقات المتجددة , الطاقات الغير المتجددة                       | المحاضرة والمناقشة والحوار | الأسئلة المباشرة               |
| الثالث                         | 2       | التعرف على سلبيات و ايجابيات و استخدامات الطاقة الشمسية( المباشرة والغير المباشرة)                                                                                                                                                                                                                                                                                                                                                         | الطاقة الشمسية ايجابياتها و سلبياتها , استخدام الطاقة الشمسية . | المحاضرة والمناقشة والحوار | الأسئلة المباشرة + امتحان شفهي |
| الرابع                         | 2       | التعرف على الشمس و تركيبها الفيزيائي و الثابت الشمسي                                                                                                                                                                                                                                                                                                                                                                                       | نموذج الشمس , الثابت الشمسي                                     | المحاضرة والمناقشة والحوار | الأسئلة المباشرة               |
| الخامس                         | 2       | التعرف على الجسم الاسود و الطيف الشمسي                                                                                                                                                                                                                                                                                                                                                                                                     | اشعاع الجسم الاسود                                              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة + امتحان      |
| السادس                         | 2       | التعرف على الانبعاثات الشمسية                                                                                                                                                                                                                                                                                                                                                                                                              | الانبعاثات الاشعاعي من الشمس                                    | المحاضرة والمناقشة والحوار | الأسئلة المباشرة               |
| السابع                         | 2       | التعرف على الفلك الشمسي و المدار الارضي                                                                                                                                                                                                                                                                                                                                                                                                    | الفلك الشمسي , مدار الارض                                       |                            |                                |



|                                    |                               |                                                                    |                                                                                                                                     |   |                          |
|------------------------------------|-------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---|--------------------------|
| الأسئلة<br>المباشرة+امتحان<br>شفهي | المحاضرة والمناقشة<br>والحوار | اليوم الشمسي , اليوم<br>الفلكي , معادلة الزمن                      | التعرف على اليوم الشمسي<br>و خصائصه و اليوم الفلكي<br>و معادلة الزمن                                                                | 2 | الثامن                   |
| الأسئلة المباشرة                   | المحاضرة والمناقشة<br>والحوار | الاحداثيات الشمسية<br>المحلية, شروق<br>الشمس وغروبها               | التعرف على الاحداثيات<br>الشمسية القياسية و<br>المحلية                                                                              | 2 | التاسع                   |
| الأسئلة المباشرة                   | المحاضرة والمناقشة<br>والحوار | التعرف على زاوية<br>ميلان الشمس و عدد<br>ساعات النهار              | التعرف على زاوية ميلان<br>الشمس و عدد ساعات<br>النهار                                                                               | 2 | العاشر                   |
| الأسئلة المباشرة+<br>امتحان        | المحاضرة والمناقشة<br>والحوار | ميلان اشعة الشمس<br>على السطوح المائلة                             | التعرف على كيفية سقوط<br>اشعة الشمسية على<br>السطوح المائلة                                                                         | 2 | الحادي<br>عشر            |
| الأسئلة المباشرة                   | المحاضرة والمناقشة<br>والحوار | نموذج الغلاف الجوي                                                 | التعرف على التركيب<br>الحراري للجو و تغير<br>الكثافة و درجة الحرارة و<br>الضغط مع الارتفاع<br>مكونات الهواء<br>(ثرموداينميك الهواء) | 2 | الثاني<br>عشر            |
| الأسئلة المباشرة                   | المحاضرة والمناقشة<br>والحوار | الامتصاص و تشتت<br>الاشعاع الشمسي<br>بواسطة مكونات<br>الغلاف الجوي | التعرف على كيفية<br>امتصاص و تشتت الاشعاع<br>الشمسي من قبل الغلاف<br>الجوي                                                          | 2 | الثالث<br>عشر            |
| الأسئلة المباشرة                   | المحاضرة والمناقشة<br>والحوار | تصميم محطة الطاقة<br>الشمسية والمجمعات<br>الشمسية                  | التعرف على تصميم محطات<br>الطاقة الشمسية وعمل<br>المجمعات الشمسية                                                                   | 2 | الرابع<br>عشر            |
|                                    |                               | اجهزة قياس الاشعاع<br>الشمسي                                       | التعرف على اجهزة قياس<br>الاشعة الشمسية و اجهزة<br>قياس العناصر المناخية<br>والخواص الواجب توفرها<br>في اجهزة القياس                | 2 | الخامس<br>عشر            |
| الأسئلة المباشرة                   | المحاضرة والمناقشة<br>والحوار | العوامل الجوية المؤثرة<br>في الاشعاع الشمسي                        | التعرف على العوامل<br>المؤثرة في الاشعاع<br>الشمسي وتأثيرات الغلاف<br>الجوي والارض في<br>امتصاص الاشعاع الشمسي.                     | 2 | الاسبوع<br>السادس<br>عشر |
| الأسئلة المباشرة                   | المحاضرة والمناقشة<br>والحوار | العوازل و الوصلات و<br>اشباه الموصلات                              | التعرف على المواد العازلة<br>و الموصلة و شبه<br>الموصلة و حزم الطاقة                                                                | 2 | الاسبوع<br>السابع<br>عشر |





|                                |                            |                                                        |                                                                 |   |                         |
|--------------------------------|----------------------------|--------------------------------------------------------|-----------------------------------------------------------------|---|-------------------------|
| الأسئلة المباشرة               | المحاضرة والمناقشة والحوار | صناعة الخلايا الشمسية و أنواعها                        | أنواع الخلايا الشمسية و تصنيع الخلايا الشمسية                   | 2 | الاسبوع الثامن عشر      |
| الأسئلة المباشرة + امتحان شفهي | المحاضرة والمناقشة والحوار | كفاءة الخلايا الشمسية والاستجابة الطيفية للتيار الضوئي | الخلايا الفوتولتائية والعوامل المؤثرة على كفاءة الخلايا الشمسية | 2 | الاسبوع التاسع عشر      |
| الأسئلة المباشرة               | المحاضرة والمناقشة والحوار | المجمعات الشمسية                                       | التعرف على المجمعات الشمسية و مكوناتها                          | 2 | الاسبوع العشريون        |
| الأسئلة المباشرة               | المحاضرة والمناقشة والحوار | عمل المجمع الشمسي                                      | التعرف على عمل المجمع الشمسي و المتغيرات التي تؤثر عليه         | 2 | الاسبوع الحادي والعشرون |
| الأسئلة المباشرة               | المحاضرة والمناقشة والحوار | تخمين الاشعاع الشمسي                                   | التعرف على نماذج تخمين الاشعاع الشمسي                           | 2 | الاسبوع الثاني والعشرون |
| امتحان                         | المحاضرة والمناقشة والحوار | نماذج تخمين الاشعاع الشمسي                             | فائدة نماذج تخمين الاشعاع الشمسي                                | 2 | الاسبوع الثالث والعشرون |
| الأسئلة المباشرة               | المحاضرة والمناقشة والحوار | الاشعاع الشمسي                                         | الاشعاع الشمسي اليومي و الساعي المباشر و المنتشر                | 2 | الاسبوع الرابع والعشرون |
| الأسئلة المباشرة               | المحاضرة والمناقشة والحوار | حساب الاشعاع الشمسي                                    | التعرف على الاشعاع الشمسي الكلي المساقط على السطح الافقي        | 2 | الاسبوع الخامس والعشرون |





|                               |   |                                                                  |                                                                  |                               |                                    |
|-------------------------------|---|------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------|------------------------------------|
| ن                             |   |                                                                  |                                                                  |                               |                                    |
| الاسبوع<br>اساس<br>والعشرون   | 2 | التعرف على الاشعاع<br>الشمسي الساقط على سطح<br>مائل عن سطح الارض | الاشعاع الساقط على<br>سطح مائل                                   | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                   |
| الاسبوع<br>السابع<br>والعشرون | 2 | التعرف على الكتلة الهوائية                                       | الكتلة الهوائية                                                  | المحاضرة والمناقشة<br>والحوار | الأسئلة المباشرة                   |
| الاسبوع<br>الثامن<br>والعشرون | 2 | التعرف على الاشعاع<br>الشمسي خارج الغلاف<br>الجوي                | الاشعاع الشمسي خارج<br>الغلاف الجوي                              | المناقشة والحوار              | الأسئلة<br>المباشرة+امتحان<br>شفهي |
| الاسبوع<br>التاسع<br>والعشرون | 2 | الاشعاع الشمسي المنعكس                                           | الاشعاع الشمسي<br>المنعكس من سطح<br>الارض الساقط على<br>سطح مائل | المناقشة والحوار              | الأسئلة المباشرة                   |
| الاسبوع<br>الثلاثون           | 2 | التعرف على الاشعاع<br>السماوي المنتشر                            | اشعاع السماء المنتشر<br>الساقط على سطح مائل                      | المناقشة والحوار              | امتحان                             |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والواجبات والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس

|                                           |                                                                                                                                                                                                                                                       |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الكتب المفردة المطلوبة (المنهجية ان وجدت) |                                                                                                                                                                                                                                                       |
| المراجع الاساسية (المصادر)                | <ol style="list-style-type: none"> <li>1. كتاب مقدمه في الطاقه الشمسيه تاليف<br/>سول وايدر</li> <li>2. الخلايا الشمسية تاليف مارتن كرين</li> <li>3. Meteorology, Eric, Levin</li> <li>4. An introduction to Solar<br/>Radiation , Muhammad</li> </ol> |



|                                                                                                                                                                                            |                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <p>Iqbal,1983</p> <p>أوصى باعتماد المصادر الحديثة.<br/>فضلا عن جميع الدراسات الأكاديمية والبحوث العلمية<br/>المنشورة في المجلات العلمية الأكاديمية والتي لها علاقة<br/>بمفردات المادة.</p> |                                                                             |
| <p>متابعه المراجع الإلكترونية والأنترنت التي تتضمن<br/>المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في<br/>بعض الجامعات العالمية</p>                                                | <p>الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية،<br/>التقارير)</p> |
| <p>مواقع الأنترنت التي تتضمن معلومات عن الطاقة<br/>الشمسية والطرق العلمية المستخدمة للاستفادة منها .</p>                                                                                   | <p>المراجع الإلكترونية، مواقع الأنترنت</p>                                  |



## نموذج وصف المقرر

|                                                                                                                                                                           |                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| 1. اسم المقرر:                                                                                                                                                            | الفيزياء الذرية                                                                                  |
| 2. رمز المقرر:                                                                                                                                                            | PHY303                                                                                           |
| 3. الفصل/ السنة:                                                                                                                                                          | 2026-2025                                                                                        |
| 4. تاريخ اعداد هذا الوصف:                                                                                                                                                 | 2025/9/1                                                                                         |
| 5. اشكال الحضور المتاحة:                                                                                                                                                  | التعليم الحضوري                                                                                  |
| 6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                                                      | 90 ساعة/ 7 وحدات                                                                                 |
| 7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                        | الاسم: م.م. احمد تركي عبد الحميد                                                                 |
| 8. اهدف المقرر                                                                                                                                                            | الايمل: <a href="mailto:phy.ahmedturki@uohamdaniya.edu.iq">phy.ahmedturki@uohamdaniya.edu.iq</a> |
| 1- تعريف الطلاب بنظرية النسبية الخاصة والعامة وفهم مفاهيمها الرئيسية مثل الزمان النسبي، والتعدد الزمني، والانكماش الطولي، وكيفية تأثير السرعة الفائقة على الكتلة والطاقة. | اهداف المادة الدراسية                                                                            |
| 2- فهم تأثير النسبية على الحركة والزمن والطاقة وكيفية تفسير الظواهر مثل اختلاف الزمان والانقباض الطولي باستخدام نظرية النسبية.                                            |                                                                                                  |
| 3- دراسة الهياكل الذرية والتفاعلات النووية وتفاعلات الطاقة النووية وتطبيقاتها العملية.                                                                                    |                                                                                                  |
| 4- فهم التطبيقات العملية للفيزياء النووية مثل الطاقة النووية، والطب النووي، والتصوير الطبي بالإشعاع.                                                                      |                                                                                                  |
| 5- تطوير المهارات الحسابية اللازمة لفهم وتحليل الظواهر النسبية والذرية، بالإضافة إلى المهارات التجريبية من خلال القيام بالتجارب العملية وتحليل البيانات.                  |                                                                                                  |





|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |                                                   |                            |                  |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------|----------------------------|------------------|
| 6- التواصل العلمي: تعزيز المهارات في التواصل العلمي وتقديم النتائج والاستنتاجات بشكل دقيق ومفهوم. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |                                                   |                            |                  |
| 9. استراتيجيات التعليم والتعلم                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |                                                   |                            |                  |
| الاستراتيجية                                                                                      | <p>1- الطلاب يجب أن يكونوا قادرين على فهم مفاهيم النظرية النسبية الخاصة، مثل الزمان النسبي والانقباض الطولي، وكذلك فهم كيفية تطبيق هذه المفاهيم في حل المسائل الفيزيائية ذات الصلة.</p> <p>2- ينبغي على الطلاب أن يكتسبوا معرفة عميقة بالهياكل الذرية والتفاعلات النووية، بما في ذلك فهم النماذج الذرية المختلفة وتفسير تفاعلات الاندماج والانشطار النووي.</p> <p>3- يجب أن يكون الطلاب قادرين على تحليل وفهم التطبيقات العملية للفيزياء النسبية والذرية، مثل تكنولوجيا الطاقة النووية وتطبيقات الطب النووي.</p> <p>4- يجب أن يكتسب الطلاب المهارات اللازمة لحل المسائل الفيزيائية المعقدة في مجالات النسبية والذرية، بالإضافة إلى تطوير المهارات التجريبية من خلال القيام بالتجارب العملية وتحليل البيانات.</p> <p>5- ينبغي على الطلاب أن يكونوا قادرين على توضيح النتائج الفيزيائية بشكل دقيق ومفهوم، وتقديم الاستنتاجات الخاصة بالتجارب والدراسات بطريقة علمية.</p> |                                   |                                                   |                            |                  |
| 10. بنية المقرر                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                   |                                                   |                            |                  |
| الاسبوع                                                                                           | الساعات                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | مخرجات التعلم المطلوبة            | اسم الوحدة او الموضوع                             | طريقة التعلم               | طريقة التقييم    |
| الاول                                                                                             | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | المعرفة النظرية والتحليل التطبيقي | مقدمة النظرية النسبية الخاصة- تجربة مكلمون ومورلي | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني                                                                                            | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | المعرفة النظرية                   | اظر الاسناد- تحويلات غاليلو-                      | المحاضرة                   | الأسئلة المباشرة |



|            |   |                                   |                                                                              |                            |                  |
|------------|---|-----------------------------------|------------------------------------------------------------------------------|----------------------------|------------------|
|            |   | والتحليل التطبيقي                 | فرضيات النظرية النسبية الخاصة                                                | والمناقشة والحوار          |                  |
| الثالث     | 3 | المعرفة النظرية والتحليل التطبيقي | تحويلات لورنس-نسبية الزمن-معضلة التوائم                                      | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع     | 3 | المعرفة النظرية والتحليل التطبيقي | نسبية الطول-الكتلة النسبية-جمع السرعة                                        | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الخامس     | 3 | المعرفة النظرية والتحليل التطبيقي | تكافؤ الكتلة والطاقة-حل المسائل                                              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السادس     | 3 | المعرفة النظرية والتحليل التطبيقي | نظرية الفوتونات-اشعاع الجسم الاسود-القوانين الخاصة بدراسة اشعاع الجسم الأسود | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| السابع     | 3 | المعرفة النظرية والتحليل التطبيقي | الظاهرة الكهروضوئية-جهد الايقاف-تردد العتبة                                  | المحاضرة والمناقشة والحوار |                  |
| الثامن     | 3 | المعرفة النظرية والتحليل التطبيقي | المعادلة الكهروضوئية لاينشتاين-                                              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| التاسع     | 3 | المعرفة النظرية والتحليل التطبيقي | ظاهرة كومتن-تكوين زوج الكترون بوزترون                                        | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| العاشر     | 3 |                                   | حل المسائل                                                                   | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الحادي عشر | 3 | المعرفة النظرية والتحليل التطبيقي | مقدمة الاشعة السينية-توليد الاشعة السينية-طيف الاشعة السينية                 | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني عشر | 3 | المعرفة النظرية والتحليل التطبيقي | تفسير ظاهرة الطيف وفق النظرية الكمية-حيود الاشعة                             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |





|                         |   |                                   |                                                            |                               |                  |
|-------------------------|---|-----------------------------------|------------------------------------------------------------|-------------------------------|------------------|
| الثالث عشر              | 3 | المعرفة النظرية والتحليل التطبيقي | السينية<br>قانون موسلي-<br>امتصاص الاشعة<br>السينية        | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الرابع عشر              | 3 | المعرفة النظرية والتحليل التطبيقي | طرق امتصاص<br>الاشعة السينية-                              | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الخامس عشر              | 3 | المعرفة النظرية والتحليل التطبيقي | الاشعة السينية<br>المنقورة- وتأثير<br>اوكر حل المسائل      | المحاضرة<br>والمناقشة والحوار |                  |
| الاسبوع السادس عشر      | 3 | المعرفة النظرية والتحليل التطبيقي | موجات دي برولي-<br>حيود الجسيمات                           | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السابع عشر      | 3 | المعرفة النظرية والتحليل التطبيقي | سرعة موجة دي<br>برولي-                                     | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الثامن عشر      | 3 | المعرفة النظرية والتحليل التطبيقي | سرعة الموجة<br>وسرعة المجموعة                              | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع التاسع عشر      | 3 | المعرفة النظرية والتحليل التطبيقي | مبدأ عدم التحديد<br>للادقة                                 | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع العشرون         | 3 | المعرفة النظرية والتحليل التطبيقي | تطبيقات على مبدأ<br>اللدقة- حل المسائل                     | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الحادي والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | مقدمة التركيب<br>الذري- النظريات<br>الذرية- نموذج<br>ثومسن | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الثاني والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | نموذج رذرفورد-<br>تجربة رذرفورد                            | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |





|                         |   |                                   |                                                                |                            |                  |
|-------------------------|---|-----------------------------------|----------------------------------------------------------------|----------------------------|------------------|
| الاسبوع الثالث والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | المدارات الالكترونية-الطيف الذرية                              | المحاضرة والمناقشة والحوار |                  |
| الاسبوع الرابع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | نموذج بور للذرة- مستويات الطاقة والاطياف                       | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الخامس والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | حركة النواة- حل المسائل                                        | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السادس والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | مقدمة ميكانيك الكم                                             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع السابع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | دالة الموجة-اشتقاق معادلة شرودنكر                              | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الثامن والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | معادلة شرودنكر غير المعتمدة على الزمن                          | المناقشة والحوار           | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | معادلة شرودنكر المعتمدة على الزمن-مؤثر الهاملتونيون-مؤثر الزخم | المناقشة والحوار           | الأسئلة المباشرة |
| الاسبوع الثلاثون        | 3 | المعرفة النظرية والتحليل التطبيقي | حل المسائل                                                     |                            |                  |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس

- |                                           |                                                                                                  |
|-------------------------------------------|--------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت) | 1- الفيزياء الذرية (د.طالب ناهي الخفاجي).<br>2- الفيزياء الجزيئية (د.خالد عبد الله جاسم ، د.عصام |
|-------------------------------------------|--------------------------------------------------------------------------------------------------|



|                                                                 |                                                                                                                              |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| احمد محمود)                                                     |                                                                                                                              |
| المراجع الاساسية (المصادر)                                      | مفاهيم في الفيزياء الحديثة (ارثر بايزر)                                                                                      |
| الكتب والمراجع السلدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الإلكترونية، مواقع الانترنت                             | مواقع الانترنت التي تخص الفيزياء الحديثة والذرية                                                                             |



## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| 1. اسم المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                           |
| الميكانيك التحليلي                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                           |
| 2. رمز المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                           |
| PHY307                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                           |
| 3. الفصل الدراسي/ السنة                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                           |
| المرحلة الثالثة/ 2025-2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                           |
| 4. تاريخ اعداد المقرر:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                           |
| 2025/9/22                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                           |
| 5. نماذج الحضور المتأخرة.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                           |
| المحاضرات النظرية وجها لوجه                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                           |
| 6. عدد الساعات المعتمدة (الإجمالي) / عدد الوحدات (الإجمالي)                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                           |
| 90 ساعة / 5 وحدات                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                           |
| 7. اسم مدير الدورة (اذكر الكل إذا كان هناك أكثر من اسم)                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                           |
| م.م. ملاك جعفر علي غائب<br>Email: malak.jaafar.ali@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                           |
| 8. أهداف الدورة                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                           |
| <p>الهدف من دراسة الميكانيكا التحليلية هو حل المشاكل الميكانيكية التي تنشأ في الفيزياء. بدءًا من المفهوم الفيزيائي لنظام معين، يتم تطوير مفهوم أو نموذج رياضي في شكل معادلات أو معادلات تفاضلية ومحاولة حلها. تعتمد الطريقة على قوانين نيوتن التي تصف الحركة بمساعدة الكميات المتجهة مثل القوة والسرعة والتسارع. تميز هذه الكميات حركة الجسم الذي يُنظر إليه على أنه "كتلة نقطية" أو "جسم يُفهم على أنه نقطة واحدة ترتبط بها الكتلة. كانت طريقة نيوتن ناجحة وتم تطبيقها على مجموعة واسعة من المشاكل الفيزيائية.</p> | <p>أهداف الدورة</p>  |





## 9. استراتيجيات التدريس والتعلم

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| الاستراتيجية | <p>بناء أساس جيد في الميكانيكا النيوتونية. حل مجموعة متنوعة من المشاكل تحليلياً ومنهياً.</p> <p>2. تعلم الميكانيكا التحليلية. معرفة كيفية إعداد والحصول على معادلات الحركة الإحداثيات المعممة.</p> <p>3. اكتساب المعرفة ببعض المواضيع المتقدمة مثل مجال القوة المركزية، والحرارة الجيروسكوبية، والأوضاع العادية.</p> <p>- بما أننا سنستخدم الرياضيات في وصف المفاهيم الفيزيائية وحل المشكلات كمياً، المعرفة العملية بالجبر وحساب التفاضل والتكامل هي شرط أساسي.</p> |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 10. هيكل الدورة:

| طريقة التقييم                            | طريقة التعلم                                                    | اسم الوحدة أو الموضوع                   | مخرجات التعلم المطلوبة                                                                                                                                                                                | ساعات | الاسبوع |
|------------------------------------------|-----------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------|
| امتحان يومي مع امتحان نهاية كل فصل دراسي | إلقاء المحاضرات عبر السبورة وشاشات العرض بمشاركة طلابية تفاعلية | الفصل 1: باديئ الأساسية                 | المتجهات، دوران الإطارات في الإحداثيات الديكارتية، مكونات السرعة والتسارع في أنظمة الإحداثيات المختلفة (قطبية، أسطوانية، كروية)، بعض العمليات الرياضية على المتجهات، التدرج، التباعد، التجهيز. امتحان | 12    | 1 - 4   |
| امتحان يومي مع امتحان نهاية كل فصل دراسي | إلقاء المحاضرات عبر السبورة وشاشات العرض بمشاركة طلابية تفاعلية | الفصل 2: ميكانيكا نيوتن                 | قانون نيوتن للحركة، الحركة المستقيمة للجسيمات، القوة كدالة للسرعة فقط، القوة كدالة للزمن فقط، قوى التخميد تعتمد على السرعة، القوة المحفوظة حسب الموقع وبعض التطبيقات. امتحان.                         | 18    | 5-10    |
| امتحان يومي مع امتحان نهاية كل فصل دراسي | إلقاء المحاضرات عبر السبورة وشاشات العرض بمشاركة طلابية تفاعلية | الأنظمة 3 CH المتذبذبة                  | قوة الاستعادة الخطية، الحركة التوافقية، المذبذب التوافقي البسيط، الحركة التوافقية البسيطة، اعتبارات الطاقة في الحركة التوافقية البسيطة                                                                | 15    | 11 - 15 |
| امتحان يومي مع امتحان نهاية كل فصل دراسي | إلقاء المحاضرات عبر السبورة وشاشات العرض بمشاركة طلابية تفاعلية | الأنظمة 3 CH المتذبذبة                  | الحركة التوافقية المخمدة، الحركة التوافقية القسرية (الرنين)، تطبيقات على الحركة التوافقية البسيطة، امتحان                                                                                             | 12    | 16-19   |
| امتحان يومي مع امتحان نهاية كل فصل دراسي | إلقاء المحاضرات عبر السبورة وشاشات العرض بمشاركة طلابية تفاعلية | الفصل 4: ميكانيكا الجسيم، الحركة العامة | مبدأ العمل، القوى المحفوظة ومجالات القوة، دالة الطاقة المحتملة، الإمكانات في مجال الاختبار Del الجاذبية المنتظم، مشغل                                                                                 | 15    | 20-24   |





|                                                                                                                                     |    |                                                                                                          |                                                                                                                                          |                                          |                                           |
|-------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------|
|                                                                                                                                     |    |                                                                                                          |                                                                                                                                          |                                          |                                           |
| 25-30                                                                                                                               | 18 | ترجمة النظام الإحداثي، الحركة العامة للنظام الإحداثي، ديناميكيات الجسم في نظام الإحداثيات الدوار، امتحان | نقل 5 CH : نظام المرجعي                                                                                                                  | امتحان يومي مع امتحان نهاية كل فصل دراسي | Daily exam with end of each semester exam |
| 11. تقييم الدورة                                                                                                                    |    |                                                                                                          |                                                                                                                                          |                                          |                                           |
| يتم توزيع الدرجة من 100 حسب المهام الموكلة للطلاب مثل: الإعداد اليومي، الامتحانات اليومية، الشفوية، الشهرية، والكتابية، حضور الطالب |    |                                                                                                          |                                                                                                                                          |                                          |                                           |
| 12. مصادر التعلم والتدريس                                                                                                           |    |                                                                                                          |                                                                                                                                          |                                          |                                           |
| 13. تطوير استراتيجية التخطيط: العصف الذهني، مجموعات البحث، الأنشطة، حل الأسئلة الأكثر عمقا.                                         |    |                                                                                                          |                                                                                                                                          |                                          |                                           |
| الكتب الدراسية المطلوبة (كتب المناهج إن وجدت)                                                                                       |    |                                                                                                          | Golwala, Sunil. "Lecture notes on classical mechanics for physics 106ab." Publisher: CreateSpace Independent Publishing Platform (2014). |                                          |                                           |
| Main references (sources)                                                                                                           |    |                                                                                                          | Golwala, Sunil. "Lecture notes on classical mechanics for physics 106ab." Publisher: CreateSpace Independent Publishing Platform (2014). |                                          |                                           |
| المراجع الرئيسية (المصادر)                                                                                                          |    |                                                                                                          | كتاب الميكانيك التحليلي المؤلف / كرانك ر. فاوولس ترجمة الدكتور / طالب ناهي الخفاج                                                        |                                          |                                           |
| المراجع الإلكترونية، المواقع الإلكترونية                                                                                            |    |                                                                                                          | متابعه المراجع الإلكترونية والأثرية التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية              |                                          |                                           |



|                                                                      |                                   |                       |                   |                                     |
|----------------------------------------------------------------------|-----------------------------------|-----------------------|-------------------|-------------------------------------|
| <p>1. Name of the Candidate</p> <p>2. Roll No.</p> <p>3. Date</p>    | <p>4. Subject</p> <p>5. Marks</p> | <p>6. Total Marks</p> | <p>7. Remarks</p> | <p>8. Signature of the Examiner</p> |
| <p>1. Name of the Candidate</p>                                      | <p>2. Roll No.</p>                | <p>3. Date</p>        | <p>4. Subject</p> | <p>5. Marks</p>                     |
| <p>6. Remarks</p>                                                    |                                   |                       |                   |                                     |
| <p>7. Signature of the Examiner</p>                                  |                                   |                       |                   |                                     |
| <p>8. Name of the Candidate</p> <p>9. Roll No.</p> <p>10. Date</p>   | <p>11. Subject</p>                |                       |                   |                                     |
| <p>12. Marks</p> <p>13. Total Marks</p>                              | <p>14. Remarks</p>                |                       |                   |                                     |
| <p>15. Signature of the Examiner</p>                                 | <p>16. Remarks</p>                |                       |                   |                                     |
| <p>17. Name of the Candidate</p> <p>18. Roll No.</p> <p>19. Date</p> | <p>20. Subject</p>                |                       |                   |                                     |



## نموذج وصف المقرر

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | اسم المقرر:                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | فيزياء الحالة الصلبة                                                      |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | رمز المقرر:                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PHY405                                                                    |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | الفصل/ السنة:                                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2025/2026                                                                 |
| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | تاريخ اعداد هذا الوصف:                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 23/9/2025                                                                 |
| 5.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | اشكال الحضور المتاحة:                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | التعليم الحضوري                                                           |
| 6.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | عدد الساعات الدراسية (الكلية)/ عدد الوحدات (الكلية)                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 90 ساعة / 5 وحدات                                                         |
| 7.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | الاسم: أ.م.د. سهام جاسم عبدالله<br>الايمل: siham.jasim@uohamdaniya.edu.iq |
| 8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | اهداف المقرر                                                              |
| <p>اهداف المادة الدراسية</p> <ol style="list-style-type: none"> <li>1. تعرف الطلبة على اهمية المعرفة العلمية لمقرر فيزياء الحالة الصلبة في الحياة اليومية.</li> <li>2. التعرف على الأنواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ ونظريات وقوانين تتعلق بمقرر فيزياء الحالة الصلبة.</li> <li>3. دراسة الخصائص التركيبية والوظيفية للمواد الصلبة المتعلقة بالتركيب البلوري للمواد الصلبة ويشتمل المقرر على دراسة القوى الذرية البينية وأنواع الروابط البلورية، التركيب البلوري ومفهوم الشبكة البلورية، الانظمة البلورية، عناصر التناظر البلوري، معاملات ميلر، العيوب البلورية، الشبكة المقلوبة، حيود الاشعة السينية واستخدامها لدراسة التركيب البلوري، ديناميكا الشبكة ( أنماط اهتزازات الشبكة والفونونات)، الخواص الحرارية للمواد الصلبة (السعة الحرارية: النموذج الكلاسيكي، نموذج أينشتاين ، نموذج ديبياي) و يمكن هذا المقرر الطالب من فهم البنية البلورية التي تعتمد عليها الخصائص المختلفة للمواد الصلبة</li> <li>4. اكساب الطالب بنظرية الحزم في المواد الصلبة، اشباه الموصلات.</li> <li>5. ان يكتسب الطالب المهارات اللازمة للعمل في مجالات اختصاص الفيزياء.</li> <li>6. يجعل طلبة كليات التربية يشعرون بقيمة واهمية مواد الفيزياء اثناء ممارسة اختصاصاتهم كمدرسين في المدارس المتوسطة والاعدادية</li> </ol> |                                                                           |





| 9. استراتيجيات التعليم والتعلم |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                            |                  |
|--------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------|------------------|
| الاستراتيجية                   |         | <p>1. اكساب الطلبة معلومات ومفاهيم فيزيائية . اعداد كوادر مدرية ومؤهلة للعمل في المؤسسات</p> <p>2. والتعرف على التطبيقات العلمية الخاصة بكل معرفة علمية.</p> <p>3. التعرف على الانواع المختلفة للمعرفة العلمية من حقائق ومفاهيم ومبادئ ونظريات والاجهزة الخاصة للفحوصات التركيبية والبصرية تتعلق بمقرر فيزياء الحالة الصلبة.</p> <p>تمكين الطالب من الحصول على المعرفة والفهم للقوانين العلمية في الفيزياء والتطبيقات العملية لعلوم الفيزياء والتحليل المنطقي والعلمي وتفسير للظواهر الفيزيائية</p> |                         |                            |                  |
| 10. بنية المقرر                |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                            |                  |
| الاسبوع                        | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | اسم الوحدة او الموضوع   | طريقة التعلم               | طريقة التقييم    |
| الاسبوع                        | الساعات | مخرجات التعلم المطلوبة                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | اسم الوحدة / او الموضوع | طريقة التعلم               | طريقة التقييم    |
| الاول                          | 3       | عرض مفردات المنهاج، مقدمة، التركيب البلوري ، الصيغة البلورية للمواد الصلبة، الشبكة البلورية، شبكة برافيز Bravais والمتجهات الانتقالية في البلورة                                                                                                                                                                                                                                                                                                                                                    | التركيب البلوري         | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني                         | 3       | وحدة الخلية، الشبكة البلورية في الفضاء الثلاثي، خلية ويكنر- ستر الاولى، عامل المثل، حل امثلة                                                                                                                                                                                                                                                                                                                                                                                                        | وحدة الخلية             | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثالث                         | 3       | معاملات ميلر، الزاوية بين المستويات، المسافة البينة بين المستويات المتوازية، التماثل البلوري، حل امثلة                                                                                                                                                                                                                                                                                                                                                                                              | معاملات ميلر            | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الرابع                         | 3       | الحيود في البلورات، انواع الحيود، قانون براك للحيود، حل امثلة                                                                                                                                                                                                                                                                                                                                                                                                                                       | الحيود                  | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |



|               |   |                                                                                                                                               |                   |                               |                  |
|---------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------|------------------|
| الخامس        | 3 | الطرق التجريبية لحبود<br>الاشعة السينية من<br>المستويات البلورية،<br>طريقة لوي، طريقة<br>البلورة الدوارة، طريقة<br>المسحوق                    | طرق الحبود        | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| السادس        | 3 | الشبيكة المقلوبة، طريقة<br>بناء الشبيكة المقلوبة،<br>المحاور الاساسية<br>للشبيكة المقلوبة                                                     | الشبيكة المقلوبة  | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| السابع        | 3 | امتحان                                                                                                                                        |                   |                               |                  |
| الثامن        | 3 | ديناميكية الشبيكة ،<br>اهتزاز الشبيكة، اهتزاز<br>الشبيكة ذات ذرة واحدة<br>في بعد واحد                                                         | ديناميكية الشبيكة | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| التاسع        | 3 | ، اهتزاز الشبيكة،<br>اهتزاز الشبيكة ذات<br>ذرتين في بعد واحد،<br>نموذج اينشتاين، نموذج<br>ديباي                                               | اهتزاز الشبيكة    | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| العاشر        | 3 | نظرية الانطقة للمواد<br>الصلبة، منشأ حزم<br>الطاقة، حالات الطاقة<br>في المدارات<br>الالكترونية، تأثير هال،<br>التفسير الفيزيائي<br>لظاهرة هال | نظرية الانطقة     | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الحادي<br>عشر | 3 | وصلة او مفرق PN:<br>الثنائي البلوري، منطقة<br>الاستنزاف، جهد<br>الحاجز،                                                                       | الثنائي البلوري   | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الثاني<br>عشر | 3 | اشباه الموصلات،<br>مقدمة، خواص المواد<br>شبه الموصلة، انواع<br>اشباه الموصلات،                                                                | اشباه الموصلات    | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الثالث        | 3 | اشباه موصلات الغير<br>نقية (المشوبة)، نوع                                                                                                     | انواع اشباه       | المحاضرة                      | الأسئلة المباشرة |



|                               |   |                                                                                                              |                         |                               |                  |
|-------------------------------|---|--------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------|------------------|
| عشر                           |   | سائب (n - type) ،<br>نوع موجب (p - type)<br>، p مستويات التشويب                                              | الموصلات                | والمناقشة والحوار             |                  |
| الرابع<br>عشر                 | 3 | مراجعة للمنهج                                                                                                |                         | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الخامس<br>عشر                 | 3 | امتحان                                                                                                       |                         |                               |                  |
| الاسبوع<br>السادس<br>عشر      | 3 | اجهزة اشباه<br>الموصلات، الثنائي<br>النفقي: Tunnel<br>Diode، خواص<br>(التيار - الفولتية)،                    | اجهزة اشباه<br>الموصلات | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>السابع<br>عشر      | 3 | ليزر اشباه الموصلات،<br>مميزات ليزر اشباه<br>الموصلات، مقدمة عن<br>النانو وعلاقته بأشياء<br>الموصلات         | ليزر اشباه<br>الموصلات  | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>الثامن<br>عشر      | 3 | تصنيف المواد النانوية<br>وتطبيقاتها، المواد<br>النانوية احادية الابعاد،<br>المواد النانوية ثنائية<br>الابعاد | المواد النانوية         | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>التاسع<br>عشر      | 3 | ، المواد النانوية ثلاثية<br>الابعاد، خواص المواد<br>النانوية، اشياء<br>الموصلات النانوية،                    | خواص المواد<br>النانوية | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>العشرون            | 3 | العيوب البلورية<br>، تصنف العيوب<br>البلورية، العيوب<br>النقطية، الثغرات،<br>عيوب شوتكي،                     | العيوب البلورية         | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |
| الاسبوع<br>الحادي<br>والعشرون | 3 | عيوب فرنكل ، عيوب<br>الشبيكة ، العيوب<br>الخطية، الانخلاعات،<br>الانخلاع الحافي،<br>الانخلاع اللولبي         | انواع العيوب            | المحاضرة<br>والمناقشة والحوار | الأسئلة المباشرة |



|                  |                               |                        |                                                                                                                                               |   |                               |
|------------------|-------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------|
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | العيوب السطحية         | العيوب السطحي، حدود<br>الحبيبات، خلل التراص،<br>التوائم                                                                                       | 3 | الاسبوع<br>الثاني<br>والعشرون |
|                  |                               |                        | امتحان                                                                                                                                        | 3 | الاسبوع<br>الثالث<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | فرط الايصال            | فرط الايصال، مقدمة،<br>المجالات التطبيقية<br>للتوصيل الفائق، درجة<br>الحرارة الحرجة،                                                          | 3 | الاسبوع<br>الرابع<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | تأثير جوزيفسون         | تأثير جوزيفسون، تأثير<br>Meissner ، Effect<br>المجال المغناطيسي<br>الحرج، بعض تطبيقات<br>فرط الايصال                                          | 3 | الاسبوع<br>الخامس<br>والعشرون |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | الالكترونات الحرة      | الالكترونات الحرة،<br>نظرية الكلاسيكية<br>للالكترونات الحرة،<br>نظرية درود، نموذج<br>لورنتز                                                   | 3 | الاسبوع<br>سادس<br>والعشرون   |
| الأسئلة المباشرة | المحاضرة<br>والمناقشة والحوار | احصاء فيرمي -<br>ديراك | ، فشل النظرية<br>الكلاسيكية، احصاء<br>فيرمي- ديراك<br>للالكترونات الحرة في<br>ثلاث ابعاد، طاقة<br>فيرمي، كثافة الحالات<br>النوعية الالكترونية | 3 | الاسبوع<br>السابع<br>والعشرون |
| الأسئلة المباشرة | المناقشة والحوار              |                        | حل اسئلة متنوعة                                                                                                                               | 3 | الاسبوع<br>الثامن             |

|                                                                                                                                            |   |                                                                                                                                                                                                                                                                                                    |                  |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|
| والعشرون                                                                                                                                   |   |                                                                                                                                                                                                                                                                                                    |                  |                  |
| الاسبوع التاسع والعشرون                                                                                                                    | 3 | مراجعة عامة لمفردات المنهج                                                                                                                                                                                                                                                                         | المناقشة والحوار | الأسئلة المباشرة |
| الاسبوع الثلاثون                                                                                                                           | 3 | امتحان                                                                                                                                                                                                                                                                                             |                  |                  |
| 11. تقييم المقرر                                                                                                                           |   |                                                                                                                                                                                                                                                                                                    |                  |                  |
| توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ |   |                                                                                                                                                                                                                                                                                                    |                  |                  |
| 12. مصادر التعلم والتدريس                                                                                                                  |   |                                                                                                                                                                                                                                                                                                    |                  |                  |
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                                                                                                  |   | Kittel, C., 2005., Introduction to solid state physics, 8th ed., Wiley<br><br>Omar MA., 1975, Elementary solid state physics, principles and applications, Addison-Wesley Publishing Company<br><br>3- فيزياء الحالة الصلبة ، مؤيد جبرائيل الجزء الاول والثاني<br>4- فيزياء حالة صلبة ، يحيى الجمل |                  |                  |
| المراجع الاساسية (المصادر)                                                                                                                 |   | 1- Om Prakash Pahuja "Solid State Physics" Laxmi Publications (P) LTD 1 <sup>st</sup> ed., 2005 , New Delhi.<br>2- Ziman, Z.M., "Principles of the theory of solids" Cambridge, 1964<br>3- Peter M., Lectures at Manchester University 2006                                                        |                  |                  |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير)                                                                           |   | متابعة المراجع الإلكترونية والأترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية                                                                                                                                                                        |                  |                  |
| المراجع الإلكترونية، مواقع الانترنت                                                                                                        |   | مواقع الانترنت التي تخص الحالة الصلبة                                                                                                                                                                                                                                                              |                  |                  |



## نموذج وصف المقرر

|    |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | اسم المقرر:                                           | الليزر                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. | رمز المقرر:                                           | PHY408                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. | الفصل \ السنة:                                        | 2025-2026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4. | تاريخ اعداد هذا الوصف:                                | 2025\9\21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5. | اشكال الحضور المتاحة:                                 | التعليم الحضور                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 6. | عدد الساعات الدراسية (الكلية) \ عدد الوحدات (الكلية): | 60 نظري \ عدد الوحدات (4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7. | اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر):      | الاسم: أ.م. بان عبد المسيح بدر<br>الايمل: banbader1971@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 8. | اهداف المقرر:                                         | <p>تعرف الطلبة على موضوع الليزر واهميته في علم الفيزياء.</p> <p>- توظيف المعرفة التي يكتسبها الطالب في تفسير الظواهر الطبيعية المرتبطة بالضوء والليزر.</p> <p>- اكساب الطلبة مهارات التفكير اللازمة لاستخدامها في مجال تدريس مادة الليزر عند ممارسة اختصاصاتهم كمدرسين في المدارس الابتدائية المتوسطة والاعدادية والتي تكون ضمن مقرر مادة العلوم او الفيزياء.</p> <p>- اكساب الطلبة مهارات البحث العلمي لاستخدامها في المجالات البحثية والتطبيقية في دوائر الدولة المعنية بالجانب البحثي.</p> |
| 9. | استراتيجيات التعليم والتعلم                           | <p>أ- المعرفة والفهم الاستراتيجي</p> <p>أ-1 ان يتعرف الطالب على الحقائق والمفاهيم والمبادئ والنظريات والقوانين</p>                                                                                                                                                                                                                                                                                                                                                                            |
|    | الاستراتيجية                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>المتعلقة بمقرر الليزر.</p> <p>أ-2 ان يتعرف الطالب على الظواهر والتطبيقات العملية المتعلقة بمادة الليزر.</p> <p>ب - المهارات الخاصة بالموضوع</p> <p>ب1- اكساب الطالب المهارات اللازمة لتعلم طريقة التفكير العلمي التي تساعده في الحصول على المعرفة العلمية وتحويل ذلك إلى سلوك متبع في حل المشكلات العلمية.</p> <p>ب2- اكساب الطالب المهارات التي تساعده على فهم وتفسير الظواهر الطبيعية والتطبيقات العملية المرتبطة بالليزر.</p> <p>ج- مهارات التفكير</p> <p>ج1 تعليم الطلبة خطوات التفكير العلمي لحل المشكلات العلمية.</p> <p>ج2- جعل الطالب قادرا على الربط بين المادة العلمية وبيئته ومشاهداته اليومية.</p> <p>ج3- طرح الاسئلة والامثلة المثيرة للتفكير العلمي ومناقشة إجابات الطلبة عليها.</p> <p>د - المهارات العامة والمنفولة (المهارات الأخرى المتعلقة بقبالية التوظيف والتطور الشخصي).</p> <p>د-1 تعريف الطالب بالموجات الصوتية.</p> <p>د-2 ربط المفاهيم النظرية بالعمل.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10. بنية المقرر:

| الاسبوع | الساعات | مخرجات التعلم المطلوبة                                       | اسم الوحدة او الموضوع   | طريقة التعلم                   | طريقة التقييم                      |
|---------|---------|--------------------------------------------------------------|-------------------------|--------------------------------|------------------------------------|
| الاسبوع | الساعات | مخرجات التعلم المطلوبة                                       | اسم الوحدة / أو الموضوع | طريقة التعلم                   | طريقة التقييم                      |
| الاول   | 3       | اثبات قانون كولوم وحل المسائل المتعلقة بقانون التوزيع العكسي | قانون كولوم             | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة والواجبات اليومية |
| الثاني  | 3       | تحقيق قانون كولوم نواة الذرة في تجربة رذرفورد                | قانون كولوم             | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة                   |
| الثالث  | 3       | شدة المجال الكهربائي                                         | المجال الكهربائي        | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة                   |
| الرابع  | 3       | خطوط القوة الكهربائية                                        | المجال الكهربائي        | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة                   |



|                    |   |                                             |                          |                                |                  |
|--------------------|---|---------------------------------------------|--------------------------|--------------------------------|------------------|
| الخامس             | 3 | تطبيقات على كيفية حساب شدة المجال الكهربائي | المجال الكهربائي         | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| السادس             | 3 | شحنة الإلكترون                              | المجال الكهربائي         | المحاضرة والمناقشة وحل المسائل | امتحان شهري      |
| السابع             | 3 | فيض المجال الكهربائي                        | قانون كاوس               | المحاضرة والمناقشة وحل المسائل |                  |
| الثامن             | 3 | المجال الكهربائي بين لوحين متوازيين         | قانون كاوس               | المحاضرة والمناقشة وحل المسائل |                  |
| التاسع             | 3 | الجهد الكهربائي                             | الجهد الكهربائي          | المحاضرة والمناقشة وحل المسائل | امتحان شهري      |
| العاشر             | 3 | تطبيقات عن الجهد الكهربائي                  | الجهد الكهربائي          | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الحادي عشر         | 3 | طاقة الوضع الكهربائية                       | الجهد الكهربائي          | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الثاني عشر         | 3 | مولد فان دي كراف                            | الجهد الكهربائي          | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الثالث عشر         | 3 | السعة الكهربائية                            | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الرابع عشر         | 3 | كيفية حساب السعة                            | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الخامس عشر         | 3 | اهمية استخدام العوازل في المتسعات           | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل |                  |
| الاسبوع السادس عشر | 3 | توصيل المتسعات                              | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع السابع عشر | 3 | المتسعات المستخدمة للاغراض العملية          | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثامن عشر | 3 | الطاقة المخزنة في المتسعات                  | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |





|                         |   |                                                 |                          |                                |                  |
|-------------------------|---|-------------------------------------------------|--------------------------|--------------------------------|------------------|
| الأسبوع التاسع عشر      | 3 | المتسعات المتغيرة                               | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع العشرون         | 3 | المعرفة النظرية والتطبيق والقدرة على حل المسائل | المتسعات والمواد العازلة | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الحادي والعشرون | 3 | التيار الكهربائي                                | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثاني والعشرون | 3 | المقاومة والمقاومة النوعية                      | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثالث والعشرون | 3 | حل مسائل حول المقاومة النوعية                   | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل |                  |
| الاسبوع الرابع والعشرون | 3 | المعامل الحراري للمقاومة النوعية                | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الخامس والعشرون | 3 | المقاومات المستخدمة عمليا                       | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل |                  |
| الاسبوع السادس والعشرون | 3 | دليل ألوان المقاومات                            | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل | امتحان شهري      |
| الاسبوع السابع والعشرون | 3 | قانون أوم                                       | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثامن والعشرون | 3 | القدرة الحرارية في المقاومات                    | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع التاسع والعشرون | 3 | قانون جول                                       | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل | الأسئلة المباشرة |
| الاسبوع الثلاثون        | 3 | حل مسائل                                        | التيار والمقاومة         | المحاضرة والمناقشة وحل المسائل |                  |

#### 11. تقييم المقرر:

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشغوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس:

|                                            |                                                                    |
|--------------------------------------------|--------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت). | اساسيات الكهربائية والمغناطيسية (تأليف يحيى عبد الحميد الحاج علي). |
|--------------------------------------------|--------------------------------------------------------------------|





|                                                                   |                                                                                                                             |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| المراجع الأساسية (المصادر).                                       | كتب الكهربية والمغناطيسية الجزء الاول: ترجمة الدكتور<br>حازم فلاح سكيك.                                                     |
| الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير). | متابعة المراجع الالكترونية والانترنت التي تتضمن<br>المواقع الالكترونية الرصينة ومواقع المكتبات في بعض<br>الجامعات العالمية. |



## نموذج وصف المقرر

|    |                                                                                                                                                                                                                                                                                                                                                                        |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | اسم المقرر:                                                                                                                                                                                                                                                                                                                                                            |
|    | ميكانيك الكم                                                                                                                                                                                                                                                                                                                                                           |
| 2. | رمز المقرر:                                                                                                                                                                                                                                                                                                                                                            |
|    | PHY406                                                                                                                                                                                                                                                                                                                                                                 |
| 3. | الفصل/ السنة:                                                                                                                                                                                                                                                                                                                                                          |
|    | 2026-2025                                                                                                                                                                                                                                                                                                                                                              |
| 4. | تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                                                                 |
|    | 2025/9/1                                                                                                                                                                                                                                                                                                                                                               |
| 5. | اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                                                                  |
|    | التعليم الحضوري                                                                                                                                                                                                                                                                                                                                                        |
| 6. | عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                                                                                                                                                                                                                                                      |
|    | 90 ساعة/ 5 وحدات                                                                                                                                                                                                                                                                                                                                                       |
| 7. | اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)                                                                                                                                                                                                                                                                                                                        |
|    | الاسم: م.د. عبدالرحمن اسماعيل احمد<br>الايمل: a.i.ahmed@uohamdaniya.edu.iq                                                                                                                                                                                                                                                                                             |
| 8. | اهداف المقرر                                                                                                                                                                                                                                                                                                                                                           |
|    | <p>اهداف المادة الدراسية</p> <p>تعريف الطلبة بمبادئ واساسيات ميكانيك الكم التي تتضمن معادلة شرودنكر المعتمدة على الزمن والغير معتمدة على الزمن بالاضافة الى تعريف الطالب بطرق اشتقاق وكيفية التعامل مع المؤثرات المختلفة واشتقاق معادلات الزخوم الكمومية وتطبيقات معادلة شرودنكر المتنوعة .</p>                                                                        |
| 9. | استراتيجيات التعليم والتعلم                                                                                                                                                                                                                                                                                                                                            |
|    | <p>الاستراتيجية</p> <p>1. إكساب الطلبة معلومات ومفاهيم فيزيائية: تهدف الاستراتيجية إلى تزويد الطلبة بالمعلومات والمفاهيم الأساسية في مجال ميكانيك الكم، وإعداد كوادر مدربة ومؤهلة للعمل في المؤسسات التعليمية والبحثية .</p> <p>2. التعرف على التطبيقات العلمية: تعزيز فهم الطلبة للتطبيقات العملية والعلمية لمبادئ ميكانيك الكم في المجالات التكنولوجية والبحثية.</p> |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>3. التعرف على أنواع المعرفة العلمية: تمكين الطلبة من التمييز بين أنواع المعرفة العلمية المختلفة، مثل الحقائق والمفاهيم والمبادئ والنظريات في مجال ميكانيك الكم، بالإضافة إلى التعرف على الأدوات الرياضية والتقنيات المستخدمة في تحليل الظواهر الكمية.</p> <p>4. تمكين الطالب من الحصول على المعرفة والفهم: تعزيز قدرة الطلبة على فهم القوانين العلمية في ميكانيك الكم وتطبيقاتها العملية، وتنمية مهارات التحليل المنطقي والعلمي لتفسير الظواهر الفيزيائية المرتبطة بالعالم الكمي</p> |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

#### 10. بنية المقرر

| الاسبوع | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة او الموضوع                                   | طريقة التعلم               | طريقة التقييم    |
|---------|---------|-----------------------------------|---------------------------------------------------------|----------------------------|------------------|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة / أو الموضوع                                 | طريقة التعليم              | طريقة التقييم    |
| الاول   | 3       | المعرفة النظرية والتحليل التطبيقي | الفصل الأول: أسس ومبادئ ميكانيك الكم                    | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني  | 3       | المعرفة النظرية والتحليل التطبيقي | فشل التصورات الكلاسيكية في وصف بعض الظواهر الفيزيائية . |                            |                  |
| الثالث  | 3       | المعرفة النظرية والتحليل التطبيقي | أسس ميكانيك الكم ، حالة المنظومة الفيزيائية .           | المحاضرة والمناقشة والحوار |                  |
| الرابع  | 3       | المعرفة النظرية والتحليل التطبيقي | دوال الحالة ، المرصودات والمؤثرات ، تراكب الحالات ،     | المحاضرة والمناقشة والحوار |                  |





|               |   |                                      |                                                                    |                               |
|---------------|---|--------------------------------------|--------------------------------------------------------------------|-------------------------------|
| الخامس        | 3 | المعرفة النظرية والتحليل<br>التطبيقي | تعامد الدالات ،<br>عيارية الدالات .                                | المحاضرة<br>والمناقشة والحوار |
| السادس        | 3 | المعرفة النظرية والتحليل<br>التطبيقي | الاحتمالية وكثافة<br>الاحتمالية .                                  | المحاضرة<br>والمناقشة والحوار |
| السابع        | 3 | المعرفة النظرية والتحليل<br>التطبيقي | كثافة نيار<br>الاحتمالية ، القيمة<br>المتوقعة.                     | المحاضرة<br>والمناقشة والحوار |
| الثامن        | 3 | المعرفة النظرية والتحليل<br>التطبيقي | الفصل الثاني:<br>المؤثرات<br>ماذا تمثل المؤثرات<br>في ميكانيك الكم | المحاضرة<br>والمناقشة والحوار |
| التاسع        | 3 | المعرفة النظرية والتحليل<br>التطبيقي | المؤثرات الخطية .                                                  | المحاضرة<br>والمناقشة والحوار |
| العاشر        | 3 | المعرفة النظرية والتحليل<br>التطبيقي | خواص المؤثرات ،<br>المؤثرات الهرميتية ،<br>تبادل المؤثرات .        | امتحان شهري                   |
| الحادي<br>عشر | 3 | المعرفة النظرية والتحليل<br>التطبيقي | التغير الزمني للقيمة<br>المتوقعة ، نظرية<br>اهرنفست                | المحاضرة<br>والمناقشة والحوار |
| الثاني<br>عشر | 3 | المعرفة النظرية والتحليل<br>التطبيقي | قوانين حفظ الطاقة<br>والزخم الزاوي                                 | المحاضرة<br>والمناقشة والحوار |
| الثالث<br>عشر | 3 | المعرفة النظرية والتحليل<br>التطبيقي | مبدأ عدم التحديد<br>لهايزنبرك خواص<br>المؤثرات                     | المحاضرة<br>والمناقشة والحوار |
| الرابع<br>عشر | 3 | المعرفة النظرية والتحليل<br>التطبيقي | المؤثرات الهرميتية ،<br>تبادل المؤثرات                             | المحاضرة<br>والمناقشة والحوار |
| الخامس        | 3 | المعرفة النظرية والتحليل             | الفصل الثالث :                                                     | المحاضرة                      |



|                         |   |                                   |                                                                                  |                  |
|-------------------------|---|-----------------------------------|----------------------------------------------------------------------------------|------------------|
| الأسبوع الثالث والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | الفصل السادس: الزخم الزاوي<br>مؤثرات الزخم الزاوي<br>بالأحداثيات الكروية         | المناقشة والحوار |
| الأسبوع الرابع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | تبادل مؤثرات الزخم الزاوي .                                                      | المناقشة والحوار |
| الأسبوع الخامس والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | الفصل السابع: الجهد المتناظر كروياً<br>مقدمة ، المؤثرات<br>بالأحداثيات الكروية . | المناقشة والحوار |
| الأسبوع السادس والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | ذرة الهيدروجين ،<br>حل معادلة شرودنجر لذرة الهيدروجين .                          | المناقشة والحوار |
| الأسبوع السابع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | الفصل الثامن: طرق التقريب                                                        | المناقشة والحوار |
| الأسبوع الثامن والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | الحالات غير المنحلة .                                                            | المناقشة والحوار |
| الأسبوع التاسع          | 3 | المعرفة النظرية والتحليل          | تطبيقات على نظرية                                                                | المناقشة والحوار |





|                                                                                                                                                       |                                                                                                                              |          |             |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------|-------------|--|
| التاسع<br>والعشرون                                                                                                                                    |                                                                                                                              | التطبيقي | الاضطراب .  |  |
| الاسبوع<br>الثلاثون                                                                                                                                   | 3                                                                                                                            |          | امتحان شهري |  |
| 11. تقييم المقرر                                                                                                                                      |                                                                                                                              |          |             |  |
| توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير والواجبات .... الخ |                                                                                                                              |          |             |  |
| 12. مصادر التعلم والتدريس                                                                                                                             |                                                                                                                              |          |             |  |
| 1- الميكانيك الكمي:                                                                                                                                   | تأليف الدكتور جاسم الحسيني والدكتور عبد السلام عبد الأمير.                                                                   |          |             |  |
| 2- اساسيات ميكانيك الكم                                                                                                                               | تأليف سالم حسن الشماع والدكتور امجد عبد الرزاق كرجية.                                                                        |          |             |  |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير)                                                                                      | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |          |             |  |
| المراجع الالكترونية، مواقع الانترنت                                                                                                                   | مواقع الانترنت التي تخص مادة ميكانيك الكم                                                                                    |          |             |  |





## نموذج وصف المقرر (القياس والتقويم)

|    |                                                                                                                                                                                                                                                                                                                              |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | اسم المقرر:                                                                                                                                                                                                                                                                                                                  |
|    | القياس والتقويم                                                                                                                                                                                                                                                                                                              |
| 2. | رمز المقرر:                                                                                                                                                                                                                                                                                                                  |
|    | EPS401                                                                                                                                                                                                                                                                                                                       |
| 3. | الفصل/ السنة:                                                                                                                                                                                                                                                                                                                |
|    | 2026-2025                                                                                                                                                                                                                                                                                                                    |
| 4. | تاريخ اعداد هذا الوصف:                                                                                                                                                                                                                                                                                                       |
|    | 2025 /9/17                                                                                                                                                                                                                                                                                                                   |
| 5. | اشكال الحضور المتاحة:                                                                                                                                                                                                                                                                                                        |
|    | التعليم الحضورى                                                                                                                                                                                                                                                                                                              |
| 6. | عدد الساعات الدراسية (الكلية)/ عدد الوحدات (الكلية)                                                                                                                                                                                                                                                                          |
|    | 60 ساعة / 4 وحدات                                                                                                                                                                                                                                                                                                            |
| 7. | اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)                                                                                                                                                                                                                                                                              |
|    | الاسم: م.م. يونس ضرار جاسم<br>الايمل: <a href="mailto:youniesdrar12345@uohamdaniya.edu.iq">youniesdrar12345@uohamdaniya.edu.iq</a>                                                                                                                                                                                           |
| 8. | اهداف المقرر                                                                                                                                                                                                                                                                                                                 |
|    | <p>أهداف المادة الدراسية</p> <p>1- أهمية والقياس والتقويم ودوره في تحسين العملية التعليمية.</p> <p>2- المفاهيم الاساسية في القياس والتقويم التربوي</p> <p>3- أنواع الاختبارات التحصيلية ومزايا وعيوب كل من واساليب اعدادها</p> <p>4- الوسائل اللاختبارية ومزايا وعيوب كل منها</p> <p>5- الأهداف التربوية ونواعها وصيغتها</p> |
| 9. | استراتيجيات التعلم والتعليم                                                                                                                                                                                                                                                                                                  |
|    | <p>الاستراتيجية</p> <p>استراتيجية التعلم الذاتي – العصف الذهني – حل المشكلات – التعليم التعاوني-التعليم النشط</p>                                                                                                                                                                                                            |



| الأسبوع | الساعات | مخرجات التعلم المطلوبة                                                                | اسم الوحدة / أو الموضوع                       | طريقة التعليم                 | طريقة التقييم   |
|---------|---------|---------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------|-----------------|
| 1       | 2       | -تمكين المتعلمين من تحديد المراحل التاريخية على مختلف الثقافات لكل من القياس والتقويم | التطور التاريخي لمفهوم كل من القياس والتقويم  | المناقشة ، المحاضرة، المناظرة | تغذية راجعة     |
| 2       | 2       | تكوين الطلبة من تحديد مفهوم الاختبار وربطه مع المفاهيم الأخرى                         | التعرف على مفهوم الاختبارات                   | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 3       | 2       | تمكين الطلبة من تحديد المصطلحات القياس والتقويم وإيجاد الاختلاف بينهما                | التعرف على مفهوم كل من (القياس ، والتقدير)    | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 4       | 2       | تمكين الطلبة تعريف المفاهيم القياس والتقويم وإيجاد العلاقة بينهما                     | تحديد مفهوم كل من (القياس، والتقويم)          | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 5       | 2       | تمكين الطلبة من التمييز بين المفاهيم وإيجاد مخطط يربط بينهما                          | العلاقة بين كل من (القياس، الاختبار، التقويم) | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 6       | 2       | تمكين الطلبة من توظيف خصائص القياس التربوي                                            | خصائص القياس التربوي                          | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 7       | 2       | تمكين الطلبة من التعرف وتطبيق أنواع التقويم التربوي                                   | أنواع التقويم                                 | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 8       | 2       | تمكين الطلبة من تحديد أنواع القياس وتطبيقاته الميدانية                                | أنواع القياس                                  | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 9       | 2       | تمكين الطلبة من تحديد أنواع التقويم                                                   | التقويم والقياس في المجالات التربوية          | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 10      | 2       | تمكين الطلبة من التطبيقات التربوية للتقويم                                            | دور التقويم في تحسين التعليم                  | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 11      | 2       | تمكين الطلبة من تحديد الأهداف الأساسية للتدريس                                        | أهداف التدريس                                 | المناقشة ، المحاضرة، المناظرة | اختبار          |





|    |   |                                                                                 |                                          |                               |                 |
|----|---|---------------------------------------------------------------------------------|------------------------------------------|-------------------------------|-----------------|
| 12 | 2 | تمكين الطلبة من كيفية ربط القياس والتقويم بالاهداف التربوية                     | القياس والتقويم وعلاقتها بالاهداف        | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 13 | 2 | تمكين لطلبة من تحديد الخطوات الرئيسة لبناء الاختبارات                           | خطوات بناء الاختبارات التربوية           | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 14 | 2 | تمكين الطلبة من خطوات اعداد جدول المواصفات في الميدان تعليمي                    | جدول المواصفات                           | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 15 | 2 | تمكين الطلبة من الاطلاع على المفاهيم الرئيسة للتحليل الاحصائي لانواع الاختبارات | المفهوم الاحصائي للاختبارات              | المناقشة ، المحاضرة، المناظرة | اخبار نصف سنوي  |
| 16 | 2 | تمكين الطلبة من تحديد أنواع الاختبارات                                          | أنواع الاختبارات                         | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 17 | 2 | تمكين الطلبة من تحديد أنواع الاختبارات المقالية ومميزاتها                       | الاختبارات المقالية                      | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 18 | 2 | تمكين الطلبة من تحديد أنواعها الاختبارات الموضوعية ومميزاتها                    | الاختبارات الموضوعية                     | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 19 | 2 | تمكين الطلبة من تحديد من تميز طرق الاختبارات                                    | تصنيف الاختبارات حسب الطريقة             | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 20 | 2 | تمكين الطلبة من تحديد تعليمات ومفاتيح التصحيح للاختبارات                        | مفاتيح التصحيح                           | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 21 | 2 | امتحان شهري                                                                     | معرفة مستوى الطلبة وما اكتسبه من معلومات | -                             | امتحان شهري     |
| 22 | 2 | تمكين الطلبة من تحديد المواصفات الجديدة للاختبار                                | مواصفات الاختبار الجيد                   | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 23 | 2 | تمكين الطلبة من تحديد مفهوم الصدق للاختبارات                                    | الصدق وانواعه                            | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 24 | 2 | تمكين الطلبة من تحديد مفهوم ثبات الاختبارات التربوية                            | الثبات واساليبه                          | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |





|    |   |                                                           |                                  |                               |                 |
|----|---|-----------------------------------------------------------|----------------------------------|-------------------------------|-----------------|
| 25 | 2 | تمكين الطلبة من تحديد مفهوم الموضوعية للاختبار التربوي    | الموضوعية في الاختبارات التربوية | المناقشة ، المحاضرة، المناظرة | اختبار          |
| 26 | 2 | تمكين الطلبة من تطبيق أساليب للتقويم بغير الاختبارات      | التقويم بغير الاختبارات          | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 27 | 2 | تمكين الطلبة من التعرف انواع الصديق                       | السجلات التراكمية                | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 28 | 2 | تمكين الطلبة من تحديد مفهوم الملاحظة التربوية             | الملاحظة التعليمية والتربوية     | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 29 | 2 | تمكين الطلبة من الربط بين الصديق التلازمي والصديق التنبؤي | قوائم الفحص التربوية             | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |
| 30 | 2 | تمكين الطلبة من تحديد دور المقابلة في الجانب التربوي      | المقابلة                         | المناقشة ، المحاضرة، المناظرة | التغذية الراجعة |

#### 11- مصادر التعلم والتدريس

|                                                                          |                                                                                                                                                                                 |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. الكتب المقررة المطلوبة                                                | - القياس والتقويم للطلال الجامعي ، عبد الحسين ارزوقي ، ياسين عيال<br>- القياس والتقويم في العملية التعليمية ، احمد سليمان عوده<br>- بادئ لقياس والتقويم التربوي، الأطرهي وآخرون |
| 2. المراجع الرئيسية (المصادر)                                            | - القياس والتقويم للطلال الجامعي ، عبد الحسين ارزوقي ، ياسين عيال<br>- القياس والتقويم في العملية التعليمية ، احمد سليمان عوده<br>- بادئ لقياس والتقويم التربوي، الأطرهي وآخرون |
| أ. الكتب والمراجع التي يوصى بها<br>( المجلات العلمية ، التقارير ، .... ) | - القياس والتقويم التربوي في العملية التربوية ، صلاح الدين محمود علام<br>- القياس والتقويم في العملية التدريسية ، رحيم العزاوي                                                  |
| ب. المراجع الالكترونية، مواقع الانترنت                                   | مكتبة علم مناهج وطرائق التدريس العامة (تلفرام)<br>- مكتبة الدور (مكتبة الكترونية ) مجانية على محرك البحث google                                                                 |



## نموذج وصف المقرر الدراسي

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. اسم المقرر                         |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| النظرية الكهرومغناطيسية               |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2. رمز المقرر                         |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| PHY407                                |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. الفصل الدراسي / السنة              |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| الرابع / 2025-2026                    |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4. تاريخ اعداد الوصف                  |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 22/9/2025                             |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5. اشكال الحضور المتاحة               |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| محاضرات نظرية وجها لوجه               |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6. عدد الساعات الكلية / عدد الوحدات   |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 90 ساعة / 5 وحدات                     |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 7. اسم مشرف المقرر                    |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| الاستاذ منى يوحنا صليوه               |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| الايمل : muna-sh.y@uohamdaniya.edu.iq |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 8. اهداف المقرر                       |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| اهداف المقرر                          | <ul style="list-style-type: none"> <li>- تعريف الطالب بأنظمة الإحداثيات وتطبيقاتها في المجالات الكهرومغناطيسية.</li> <li>- شرح مفهوم الموجات الكهرومغناطيسية وتطبيقاتها العملية.</li> <li>- دراسة انتشار، وانعكاس، وانكسار الموجات المستوية في أوساط مختلفة.</li> <li>- دراسة معادلات ماكسويل المتغيرة مع الزمن وتطبيقاتها في المسائل الكهرومغناطيسية.</li> <li>- توضيح انعكاس وانكسار الموجات عند الحدود الفاصلة.</li> </ul> |





## 1. استراتيجيات التدريس والتعلم

تشمل المحاضرات الأسبوعية تزويد الطلاب بالأساسيات والمواضيع المتعلقة بمخرجات التعلم المهارية السابقة لحل المشكلات العملية من خلال العرض التقديمي أو المحاضرة.

- حل مجموعة من الأمثلة العملية والتطبيقية من قبل المدرس والطلاب.
- مشاركة الطالب في المناقشة وحل بعض المشكلات العملية.
- تكليف الطالب بزيارة المكتبة والإنترنت لاكتساب معرفة إضافية بالمواد الأكاديمية.
- تقديم الطالب لندوة أمام زملائه لتعزيز ثقته بنفسه

## 2. هيكل المقرر الدراسي

| طريقة التقييم                                       | طريقة التدريس                                                   | الوحدة                                         | مخرجات التعلم المطلوبة                                                                                                                                      | ساعة | اسبوع   |
|-----------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---------|
| اختبارات<br>يومية إلى<br>حائب اختبار<br>نهاية الفصل | التدريس عن طريق السبورة وشاشات العرض مع مشاركة الطلاب التفاعلية | الفصل الأول:<br>تحليل المتجهات ونظم الأحداثيات | التحليل الاتجاهي - التمثيل، العمليات - الضرب القياسي والضرب الاتجاهي، أساسيات أنظمة الأحداثيات - الأنظمة الديكارتية والأسطوانية والكروية.                   | 15   | 1 - 5   |
| اختبارات<br>يومية إلى<br>حائب اختبار<br>نهاية الفصل | التدريس عن طريق السبورة وشاشات العرض مع مشاركة الطلاب التفاعلية | الفصل الثاني:<br>الكهربائية الساكنة 2          | الكهروساكنة الجزء الأول: قانون كولوم، شدة المجال الكهربائي - المجالات الناتجة عن توزيعات الشحن المختلفة، كثافة التدفق الكهربائي؛ مسائل توضيحية. امتحان.     | 18   | 6 - 11  |
| اختبارات<br>يومية إلى<br>حائب اختبار<br>نهاية الفصل | التدريس عن طريق السبورة وشاشات العرض مع مشاركة الطلاب التفاعلية | الفصل الثالث:<br>المغناطيسية الساكنة           | قانون بيوت-سافارت، قانون أمبير للحلقة وتطبيقاته، كثافة التدفق المغناطيسي، معادلات ماكسويل للمجالات المغناطيسية الساكنة، الجهد المغناطيسي القياسي والاتجاهي، | 12   | 12 - 15 |
| اختبارات<br>يومية إلى<br>حائب اختبار<br>نهاية الفصل | التدريس عن طريق السبورة وشاشات العرض مع مشاركة الطلاب التفاعلية |                                                | قانون قوة أمبير، قانون فاراداي، كثافة تيار الإزاحة، معادلات ماكسويل للمجالات المتغيرة مع الزمن، مسائل توضيحية. امتحان.                                      | 6    | 16,17   |



|       |    |                                                                                                                                                                                                                                        |                                        |                                                                 |                                            |
|-------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------|--------------------------------------------|
| 18-24 | 21 | معادلات الموجة للوسط الناقل والوسط العازل المثالي، الموجات المستوية المنتظمة - التعريف، العلاقة بين $H$ و $E$ ، انتشار الموجة في الأوساط غير الفاقدة والناقلة، انتشار الموجة في النواقل الجيدة والعوازل الجيدة، مسائل توضيحية. امتحان. | الفصل الرابع: الموجات الكهروستاتيكية 1 | التدريس عن طريق السبورة وشاشات العرض مع مشاركة الطلاب التفاعلية | اختبارات يومية إلى جانب اختبار نهاية الفصل |
| 25-30 | 18 | انعكاس وانكسار الموجات المستوية - السقوط العمودي على كل من النواقل المثالية والعوازل المثالية، زاوية بروستر، الزاوية الحرجة والانعكاس الداخلي الكلي، المعاوقة السطحية، متجه بوينتنج ونظرية بوينتنج - التطبيقات، مسائل توضيحية. امتحان. | الفصل الخامس: الموجات الكهروستاتيكية 2 | التدريس عن طريق السبورة وشاشات العرض مع مشاركة الطلاب التفاعلية | اختبارات يومية إلى جانب اختبار نهاية الفصل |

### 3. تقييم المقرر

توزع الدرجة من أصل 100 وفقاً للمهام الموكلة إلى الطالب، مثل: التحضير اليومي، والامتحانات اليومية، والشفهية، والشهرية، والنهائية، وحضور الطالب.

### 4. المصادر

|                                                                    |                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Required textbooks (curricular books, if any)                      | Foundation Of Electromagnetic Theory<br>By: John R. Reitz, Frederick J. Milford & Robert W. Christy                                                                                                                                                                              |
| Main references (sources)                                          | 1.Elements of Electromagnetics - Matthew N. O. Sadiku, 4th., Oxford Univ. Press.<br>2.Electromagnetic Waves and Radiating Systems - E.C. Jordan and K. G. Balmain, 2nd Ed., 2000, PHI.<br>3.Engineering Electromagnetic - William H. Hay Jr. and John A. Buck, 7thEd., 2006, TMH |
| Recommended books and references (scientific journals, reports...) | 1- المجالات الكهرومغناطيسية الجزء الأول والثاني<br>2- أساسيات النظرية الكهرومغناطيسية الجزء الأول والثاني<br>سلسلة ملخصات شوم: الكهرومغناطيسيات 2000 تأليف جوزيف آدمست                                                                                                           |
| Electronic References, Websites                                    | متابعه المراجع الإلكترونية والأترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية                                                                                                                                                      |





## نموذج وصف المقرر

|    |                                                                                                                                                 |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | اسم المقرر:                                                                                                                                     |
|    | الفيزياء النووية                                                                                                                                |
| 2. | رمز المقرر:                                                                                                                                     |
|    | PHY404                                                                                                                                          |
| 3. | الفصل/ السنة:                                                                                                                                   |
|    | 2026-2025                                                                                                                                       |
| 4. | تاريخ اعداد هذا الوصف:                                                                                                                          |
|    | 2025/9/21                                                                                                                                       |
| 5. | اشكال الحضور المتاحة:                                                                                                                           |
|    | التعليم الحضورى                                                                                                                                 |
| 6. | عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)                                                                                               |
|    | 90 ساعة/ 7 وحدات                                                                                                                                |
| 7. | اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)                                                                                                 |
|    | الاسم: أ.د. مالك حسين خضر<br>الايمل: <a href="mailto:dr.malik73@uohamdaniya.edu.iq">dr.malik73@uohamdaniya.edu.iq</a>                           |
| 8. | اهداف المقرر                                                                                                                                    |
|    | اهداف المادة الدراسية                                                                                                                           |
| 1. | تعزيز الأهداف المهاراتية لمادة النووية لطلبة المرحلة الرابعة في قسم الفيزياء                                                                    |
| 2. | تحليل البيانات النووية: القدرة على تحليل البيانات النووية وفهم أسسها وتطبيقها في التفاعلات النووية المختلفة.                                    |
| 3. | فهم التصميم والتشغيل النووي: كيفية القدرة على تصميم وتحليل أنظمة نووية مختلفة وفهم كيفية تشغيلها وصيانتها.                                      |
| 4. | تقييم السلامة النووية: القدرة على تقييم السلامة النووية للأنظمة والعمليات النووية وتطبيق إجراءات السلامة اللازمة.                               |
| 9. | استراتيجيات التعلم والتعليم                                                                                                                     |
|    | الاستراتيجية                                                                                                                                    |
| 1. | فهم النظريات النووية: القدرة على فهم المفاهيم الأساسية في النظريات النووية مثل التفاعلات النووية، والانحلال الإشعاعي، وتفاعلات الاندماج النووي. |



|                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 2. تحليل الانحلال الإشعاعي: القدرة على تحليل سلوك الانحلال الإشعاعي باستخدام النماذج النووية المناسبة وفهم تأثيراته على المادة والبيئة.       |
| 3. تفسير التفاعلات النووية: القدرة على تفسير وتحليل التفاعلات النووية المختلفة بما في ذلك التفاعلات الانشطارية والاندماجية وتطبيقاتها.        |
| 4. تطبيقات التقنيات النووية: القدرة على فهم وتحليل تطبيقات التقنيات النووية مثل الطاقة النووية، والتشعيع، والتصوير الطبي، والتحليل الكيميائي. |

#### 10. بنية المقرر

| الأسبوع | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة أو الموضوع                                                                       | طريقة التعلم               | طريقة التقييم    |
|---------|---------|-----------------------------------|---------------------------------------------------------------------------------------------|----------------------------|------------------|
| الأسبوع | الساعات | مخرجات التعلم المطلوبة            | اسم الوحدة / أو الموضوع                                                                     | طريقة التعليم              | طريقة التقييم    |
| الأول   | 3       | المعرفة النظرية والتحليل التطبيقي | مقدمة عن الخواص النووية ، التعاريف والمصطلحات المهمة ، الوحدات والابعاد في الفيزياء النووية | المحاضرة والمناقشة والحوار | الأسئلة المباشرة |
| الثاني  | 3       | المعرفة النظرية والتحليل التطبيقي | شحنة النوى ، نصف قطر النوى ، مسافة اقرب اقتراب                                              | المحاضرة والمناقشة والحوار |                  |
| الثالث  | 3       | المعرفة النظرية والتحليل التطبيقي | كتلة النوى ، زيادة ونقصان الكتلة ، نسبة الربط                                               | المحاضرة والمناقشة والحوار |                  |
| الرابع  | 3       | المعرفة النظرية والتحليل التطبيقي | طاقة الربط النووية ، معدل طاقة الربط ، طاقات الفصل                                          | المحاضرة والمناقشة والحوار |                  |
| الخامس  | 3       | المعرفة النظرية والتحليل التطبيقي | وادي الاستقرار ، الاعداد الكمية لنيوكلونات منفردة ، العدد الكمي الأساس ،                    | المحاضرة والمناقشة والحوار |                  |
| السادس  | 3       | المعرفة النظرية والتحليل التطبيقي | العدد الكمي المداري ، العدد الكمي المقطاطيسي ، العدد الكمي للبرم ،                          | المحاضرة والمناقشة والحوار |                  |
| السابع  | 3       | المعرفة النظرية والتحليل التطبيقي | العدد الكمي للزخم الزاوي الكلي لجسيمة منفردة                                                | المحاضرة والمناقشة والحوار |                  |

|                          |   |                                      |                                                                                                    |                               |
|--------------------------|---|--------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------|
| الثامن                   | 3 | المعرفة النظرية والتحليل<br>التطبيقي | الزخم الزاوي<br>النووي ، برم النواة<br>، التماثل                                                   | المحاضرة<br>والمناقشة والحوار |
| التاسع                   | 3 | المعرفة النظرية والتحليل<br>التطبيقي | مقدمة عن النشاط<br>النووي ، قانون<br>النشاط الاشعاعي                                               | المحاضرة<br>والمناقشة والحوار |
| العاشر                   | 3 | المعرفة النظرية والتحليل<br>التطبيقي | عمر النصف ، معدل<br>العمر                                                                          | بالإضافة الى<br>امتحان شهري   |
| الحادي<br>عشر            | 3 | المعرفة النظرية والتحليل<br>التطبيقي | العدد الكلي للنوى<br>المشعة ، قياس<br>الاعمار النصفية                                              | المحاضرة<br>والمناقشة والحوار |
| الثاني<br>عشر            | 3 | المعرفة النظرية والتحليل<br>التطبيقي | انتاج نظائر مشعة<br>من انحلال النواة<br>الام ، التوازن<br>المثالي                                  | المحاضرة<br>والمناقشة والحوار |
| الثالث<br>عشر            | 3 | المعرفة النظرية والتحليل<br>التطبيقي | زمن اعظم فعالية<br>لنوى وليدة منتجة<br>، الانحلال بطرق<br>متعددة                                   | المحاضرة<br>والمناقشة والحوار |
| الرابع<br>عشر            | 3 | المعرفة النظرية والتحليل<br>التطبيقي | عرض اتساع<br>الحالات المنحلة ،<br>تحديد التاريخ                                                    | المحاضرة<br>والمناقشة والحوار |
| الخامس<br>عشر            | 3 | المعرفة النظرية والتحليل<br>التطبيقي | انتاج نظير مشع<br>بطريقة القصف<br>النووي ،                                                         | المحاضرة<br>والمناقشة والحوار |
| الاسبوع<br>السادس<br>عشر | 3 | المعرفة النظرية والتحليل<br>التطبيقي | مقدمة عن وحدات<br>النشاط الاشعاعي ،<br>الكوري ، الفاعلية<br>النوعية ، الرونتغن                     | المحاضرة<br>والمناقشة والحوار |
| الاسبوع<br>السابع<br>عشر | 3 | المعرفة النظرية والتحليل<br>التطبيقي | جرعة الامتصاص ،<br>الريم ، الحد<br>المسموح به<br>للتعرض للاشعاع                                    | المحاضرة<br>والمناقشة والحوار |
| الاسبوع<br>الثامن<br>عشر | 3 | المعرفة النظرية والتحليل<br>التطبيقي | مقدمة عن تفاعلات<br>الاشعاع مع المادة ،<br>اشعة الكبح ، تفاعل<br>الجسيمات<br>المشحونة مع<br>المادة | المحاضرة<br>والمناقشة والحوار |





|                         |   |                                   |                                                                        |                            |
|-------------------------|---|-----------------------------------|------------------------------------------------------------------------|----------------------------|
| الاسبوع التاسع عشر      | 3 | المعرفة النظرية والتحليل التطبيقي | تفاعل الجسيمات المشحونة الثقيلة ، فقدان الطاقة بالتصادم                | المحاضرة والمناقشة والحوار |
| الاسبوع العشريون        | 3 | المعرفة النظرية والتحليل التطبيقي | المدى ، تفاعل الالكترونات                                              | المحاضرة والمناقشة والحوار |
| الاسبوع الحادي والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | تفاعل النيوترونات مع المادة                                            |                            |
| الاسبوع الثاني والعشرون | 3 |                                   | الانشطار النووي ، التفاعل المتسلسل                                     | امتحان شهري                |
| الاسبوع الثالث والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | كيفية حصول الانشطار النووي ، نواتج الانشطار                            | المناقشة والحوار           |
| الاسبوع الرابع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | الاندماج النووي ، كيفية حصول الاندماج                                  | المناقشة والحوار           |
| الاسبوع الخامس والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | الاندماج المتحكم فيه ، الاندماج بالاحتجاز المغناطيسي                   | المناقشة والحوار           |
| الاسبوع السادس والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | المشاكل التي تواجه العلماء في الاندماج النووي ، مميزات الاندماج النووي | المناقشة والحوار           |





|                         |   |                                   |                                     |                  |
|-------------------------|---|-----------------------------------|-------------------------------------|------------------|
| الاسبوع السابع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | النماذج النووية ، نموذج قطرة السائل | المناقشة والحوار |
| الاسبوع الثامن والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | التصحيح على معادلة قطرة السائل      | المناقشة والحوار |
| الاسبوع التاسع والعشرون | 3 | المعرفة النظرية والتحليل التطبيقي | نموذج القشرة                        | المناقشة والحوار |
| الاسبوع الثلاثون        | 3 |                                   | كيف تظهر الاعداد السحرية            |                  |

#### 11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير.... الخ

#### 12. مصادر التعلم والتدريس

|                                                                  |                                                                                                                              |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| الكتب المقررة المطلوبة (المنهجية ان وجدت)                        | الفيزياء النووية / تاليف منيب عادل خليل                                                                                      |
| المراجع الاساسية (المصادر)                                       | مبادئ الفيزياء النووية / ترجمة د. عاصم عبدالكريم عزوز                                                                        |
| الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير) | متابعه المراجع الإلكترونية والأنترنت التي تتضمن المواقع الإلكترونية العلمية الرصينة ومواقع المكتبات في بعض الجامعات العالمية |
| المراجع الإلكترونية، مواقع الانترنت                              | مواقع الانترنت التي تخص الفيزياء النووية                                                                                     |

|                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|
| 1.<br>2.<br>3.    | 4.<br>5.<br>6.    | 7.<br>8.<br>9.    | 10.<br>11.<br>12. |
| 13.<br>14.<br>15. | 16.<br>17.<br>18. | 19.<br>20.<br>21. | 22.<br>23.<br>24. |
| 25.<br>26.<br>27. | 28.<br>29.<br>30. | 31.<br>32.<br>33. | 34.<br>35.<br>36. |
| 37.<br>38.<br>39. | 40.<br>41.<br>42. | 43.<br>44.<br>45. | 46.<br>47.<br>48. |

# 1.1. 1.2. 1.3.

1.4.   
 1.5.   
 1.6.

## 1.7. 1.8. 1.9.

1.10.   
 1.11.   
 1.12.

### 1.13. 1.14. 1.15.

### 1.16. 1.17. 1.18.

#### 1.19. 1.20. 1.21.

|                         |                         |
|-------------------------|-------------------------|
| 1.22.<br>1.23.<br>1.24. | 1.25.<br>1.26.<br>1.27. |
| 1.28.<br>1.29.<br>1.30. | 1.31.<br>1.32.<br>1.33. |
| 1.34.<br>1.35.<br>1.36. | 1.37.<br>1.38.<br>1.39. |