Course Description Form

1. Course Name:
Foundations of Mathematics
2. Course Code:
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3. Semester / Year:
First Year / Annual System
4. Description Preparation Date :
2025/ 9/ 1
5. Available Attendance Forms
: On-campus (Face-to-face)
6. Number of Credit Hours (Total) / Number of Units (Total):
120
7. Course administrator's name (mention all, if more than one name)
Name: Asst. Lecturer Khaled Mohammed Shwish Email: khaledshwish@uohamdaniya.edu.iq

8. Course Objectives

Course Objectives	• Introduce students to the fundamental principles of mathematics including sets, relations, and algebraic structures. • Develop students' ability to apply logical reasoning and construct mathematical proofs. • Strengthen problem-solving skills through linking foundational mathematics with algebraic concepts. • Encourage critical thinking, scientific curiosity, and a positive attitude towards mathematics.

9. Teaching and Learning Strategies

Strategy	• Interactive lectures. • Group discussions and classroom debates. • Problem-solving and practical analysis. • Brainstorming and guided inquiry.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Theoretical knowledge applied analysis	Mathematical Logic	Lecture,discussion	Oral questions
2	4	Theoretical knowledge applied analysis	Propositional Algebra	Lecture, discussion	Written
3	4	Theoretical knowledge applied analysis	Open and Closed Statements	Lecture, discussion	Oral

4	4	Theoretical knowledge applied analysis	Sets and Set Algebra	Lecture, discussion	Oral
5	4	Theoretical knowledge applied analysis	Concept of Relations	Lecture, discussion	Oral
6	4	Theoretical knowledge applied analysis	Domain and Range of Relations	Lecture, discussion	Oral
7	4	Theoretical knowledge applied analysis	Types of Relations and Composition	Lecture, discussion	Oral
8	4	Applied knowledge	Equivalence Classes + Monthly Exam	Lecture, discussion	Written
9	4	Theoretical knowledge applied analysis	Special Applications of Relations	Lecture, discussion	Oral
10	4	Theoretical knowledge applied analysis	Theorems on Functions	Lecture, discussion	Monthly exam
11	4	Theoretical knowledge applied analysis	Inverse Functions	Lecture, discussion	Oral
12	4	Theoretical knowledge applied analysis	Cardinality of Sets	Lecture, discussion	Oral
13	4	Theoretical knowledge applied analysis	Ordinal Numbers	Lecture, discussion	Oral
14	4	Theoretical knowledge applied analysis	Set of Natural Numbers	Lecture, discussion	Oral
15	4	Theoretical knowledge applied analysis	Construction of Natural Numbers	Lecture, discussion	Oral
16	4	Theoretical knowledge applied analysis	Countable Sets	Lecture, discussion	Oral
17	4	Theoretical knowledge applied analysis	Prime Numbers	Lecture, discussion	Oral
18	4	Theoretical knowledge applied analysis	Natural Numbers and Their Properties	Lecture, discussion	Oral
19	4	Theoretical knowledge applied analysis	Peano Axioms	Lecture, discussion	Oral
20	4	Theoretical knowledge applied analysis	Binary Operations	Lecture, discussion	Oral
21	4	Theoretical knowledge applied analysis	Mathematical Systems	Lecture, discussion	Oral
22	4	Theoretical knowledge applied analysis	Theorems on Binary Operations and System	Lecture, discussion	Monthly exam
23	4	Theoretical knowledge applied analysis	Number Systems	Lecture, discussion	Oral
24	4	Theoretical knowledge applied analysis	Theorems on Number Systems	Lecture, discussion	Oral
25	4	Theoretical knowledge applied analysis	Monoids	Lecture, discussion	Oral
26	4	Theoretical knowledge applied analysis	Definitions of Identity, Inverse, and Examples	Lecture, discussion	Oral
27	4	Theoretical knowledge applied analysis	Definition of Group	Lecture, discussion	Oral
28	4	Theoretical knowledge applied analysis	Theorems on Groups	Lecture, discussion	Oral
29	4	Theoretical knowledge applied analysis	Group Isomorphism	Lecture, discussion	Oral
30	4	Comprehensive assessn	Final Examination	Written exam	Exam

11. Course Evaluation

The total grade (100 marks) is distributed as follows:

* Class participation and daily preparation: 5%
* Monthly quizzes and oral/written exams: 10%

* Midterm exam: 25%
* Final exam: 60%

12. Learning and Teaching Resources

A. Required Textbooks:
Principles of Foundations of Mathematics*
B. Main References:
* Hadi Jaber Mustafa, *Foundations of Mathematics*.
* Alfred North Whitehead, *Principia Mathematica*, 1910.
C. Recommended Books and References:
* Recent academic textbooks on fundamentals of mathematics, algebra, and mathematical logic.
* Scientific journals and specialized research papers.
D. Electronic References:
* Open educational platforms (e.g., Coursera, EdX, Khan Academy).
* Reliable educational YouTube channels on mathematics.
* University websites and digital library resources.

13. Program Development Plan

1. Keeping up with scientific advancements by periodically updating course content in line with the latest developments in the field of Mathematics.
2. Balancing between classical and modern resources in teaching to ensure comprehensive coverage of the subject matter.
3. Integrating modern educational technologies such as E-learning systems and Learning Management Platforms (LMS).
4. Enhancing students' skills in accordance with the requirements of local and international job markets.
5. Encouraging scientific research and student activities related to the program to foster critical thinking and creativity.
6. Exchanging academic expertise with Mathematics departments in Iraqi and international universities.
7. Conducting periodic program reviews by the Quality Assurance and Accreditation Committee to identify strengths and address weaknesses.

Course Description Form

1. Course name
Fundamentals of education
2. Course code
HAEPSMA25M106
3. semester/year
annual
4. Date of preparation of this description
2025
5. Available forms of attendance
Attendance in classrooms
6. Number of study hours (total) / Number of units (total)
30/2
7. Course Supervisor Name (if more than one name is mentioned)
Name: A.L. Baraa Muthana Jamal **Email: baraamuthana94@uohamdaniya.edu.iq**
8. Course objectives

Course objectives	• **Demonstrate the student's ability to distinguish between the determinants and characteristics of education, the goals and functions of education, and the .types of education** • **Define the concept of modern education, its most prominent theories, scholars, and types of .education** • **The ability to find the difference between education in ancient civilizations, including the**

	difference between education and upbringing in the ancient civilization of Mesopotamia and education and upbringing in .ancient China • Distinguish between Arab education in the pre-Islamic era .and education in the Islamic era • Giving the student examples of education in ancient civilizations, including Athenian education and education in .India • Setting the social foundations of education, the cultural foundations of education, the economic foundations of education and the scientific .foundations of education • Enable the student to give examples of the positives and negatives of modern education and the positives and negatives .of old education • Reserve part of the lecture time .for questions • Giving some privileges to outstanding students when answering questions • To solve some questions directed to him regarding education in ancient civilizations, including education in the ancient lands of .Mesopotamia • The student should be motivated to give examples of the

	economic, social and cultural .foundations of education • The student must be keen to attend the lecture on the . principles of education

9. Teaching and learning strategies

Strategy	Learning through cooperation between students. -1 Lectures approved by reliable sources -2. Students participate in the lecture by asking some questions that have previously been raised. -3 Allocate part of the lecture time for questions -4. Giving some privileges to outstanding students when answering questions. -5 6- The goal should be clear and specific. 7- The goal should be simple and not complicated. 8- The objective should include the standard or expected level of performance. 9- Managing the lecture in a way that indicates the importance of time. 10- Assigning students some group assignments. 11- Assign students to collect sources and references and write a report on the lecture title.

10.Course structure

week	hours	Required learning outcomes	Unit name or topic	Learning method	Evaluation method
1	1	• Definition of education , definition of the linguistic meaning	Introduction to the principles of education and teaching, the concept of education	According to the above mentioned	Weekly tests -1. Monthly tests -2. Student participation during the lecture. -3 Work sample tests. -4

		of education and the technical meaning of education .		teaching strategies	Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests .
2	1	• Definition of education , definition of the linguistic meaning of education and the technical meaning of education .	The linguistic meaning of education, the technical meaning of education	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
3	1	• Enabling the student to mention the determinants and characteristics of modern	Determinants and characteristics .of education	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises.

		education and upbringin .g			Oral tests - 7 Discussing -8 reports. 9- Practical tests
4	1	• Enabling the student to mention the determin ants and characte ristics of modern education and upbringin .g	Modern .education	Acco rding to the abov e ment ioned teach ing strat egies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
5	1	• Identify the goals and functions of education and identify the types of education and teaching .styles	Objectives and functions .of education	Acco rding to the abov e ment ioned teach ing strat egies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
6	1	• Mention the goals	Types of education	Acco rding	Weekly tests -1. Monthly tests -2.

		and functions of education and identify the types of education and teaching .styles		to the above mentioned teaching strategies	Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
7	1	• Identify the goals and functions of education and , identify the types of education and teaching .styles	Learning styles + mid-course exam	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
8	1	• Enabling the student to define modern education and mention its most	Modern educational .theories	According to the above mentioned teaching	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests.

		prominent theories and .scholars		strategies	Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
9	1	• Enabling the student to define modern education and mention its most prominent theories and scholars	Modern educational theories	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
10	1	• Enabling the student to define modern education and mention its most prominent theories and scholars	Flags of Arab educational thought, flags of Western educational thought	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

11	1	• The student should mention education in ancient civilizations education , and teaching in the ancient civilization of Mesopotamia, and education and teaching in ancient .China	Education in ancient .civilizations	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
12	1	• The student should mention education in ancient civilizations, education in the ancient civilization of Mesopotamia, and education in	Education in the ancient Mesopotamia .n civilization	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

		ancient .China			
13	1	• The student should mention education in ancient civilizations, education and teaching in the ancient civilization of Mesopotamia, and education and teaching in ancient . China	Education in .ancient China	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
14	1	• The student should mention education in ancient civilizations, education	Arab education in the pre-Islamic era	According to the above mentioned teaching	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests.

		and teaching in the ancient civilization of Mesopotamia, and education and teaching in ancient . China		strategies	Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
15	1	• The student should mention education in ancient civilizations, education and teaching in the ancient civilization of Mesopotamia, and education and teaching in	Arab education in the Islamic era	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

		ancient . China			
16	1	• The student should mention education in ancient civilizations, education and teaching in the ancient civilization of Mesopotamia, and education and teaching in ancient . China	Characteristics of Arab-Islamic education and stages of decline	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
17	1	• The student should mention education in ancient civilizations, education	Education in ancient Greece	According to the above mentioned teaching	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests.

		and teaching in the ancient civilization of Mesopotamia, and education and teaching in ancient . China		strategies	Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
18	1	• The student should mention education in ancient civilizations, education and teaching in the ancient civilization of Mesopotamia, and education and teaching in	Athenian education and characteristics of Athenian education	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

		ancient . China			
19	1	• The student should mention education in ancient civilizations, education and teaching in the ancient civilization of Mesopotamia, and education and teaching in ancient . China	Education in ancient India	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
20	1	• Enabling the student to The social foundations of education the , economic	Social Foundations of Education Mid-Course + Exam	According to the above mentioned teaching	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests.

		foundations of education the , scientific foundations of education and the , cultural foundations of education .		strategies	Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
21	1	• Student empowerment From the social foundations of education the , economic foundations of education the , scientific foundations of education and the , cultural foundations of	The relationship between education and social control	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

		education .			
22	1	• Empowering the student with the social foundations of education the , economic foundations of education the , scientific foundations of education and the , cultural foundations of education .	Economic foundations of education	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
23	1	• Empowering the student with the social foundations of education the , economic	Main sources of education funding	According to the above mentioned teaching	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests.

		foundations of education the , scientific foundations of education and the , cultural foundations of education .		strategies	Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
24	1	• Empowering the student with the social foundations of education the , economic foundations of education the , scientific foundations of education and the , cultural foundations of	Means of achieving economic development of education	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

		education .			
25	1	• Empowering the student with the social foundations of education the , economic foundations of education the , scientific foundations of education and the , cultural foundations of education .	The role of vocational education in increasing production and community progress	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
26	1	• Empowering the student with the social foundations of education the , economic	Scientific foundations of education	According to the above mentioned teaching	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests.

		foundations of education the , scientific foundations of education and the , cultural foundations of education .		strategies	Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
27	1	• Empowering the student with the social foundations of education the , economic foundations of education the , scientific foundations of education and the , cultural foundations of	The scientific method of research	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

		education .			
28	1	• Empowering the student with the social foundations of education the , economic foundations of education the , scientific foundations of education and the , cultural foundations of education .	Cultural foundations of education	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
29	1	• Empowering the student with the social foundations of education the , economic	Characteristics of culture	According to the above mentioned teaching	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests.

		foundations of education the , scientific foundations of education and the , cultural foundations of education .		strategies	Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests
30	1	• Empowering the student with the social foundations of education the , economic foundations of education the , scientific foundations of education and the , cultural foundations of	The relationship between culture and .education	According to the above mentioned teaching strategies	Weekly tests -1. Monthly tests -2. Student -3 participation during the lecture. Work sample -4 tests. Performance - 5 simulation tests. Written -6 tests/exercises. Oral tests - 7 Discussing -8 reports. 9- Practical tests

		education .			

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	
12.Learning and teaching resources	
Required textbooks (methodology if available)	Foundations of Modern Education and Educational Systems, Dr. Mohsen Ali Attia, Dar Al Manahj Publishing and Distribution, 2010
Main References (Sources)	Lectures on the subject of Foundations of Education / Dr. Hamdi .Ismail
Recommended supporting books and references (...scientific journals, reports)	The difference between the foundations of education, the principles of education, and the principles of education. Ibtisam Abdo Ali / Kingdom of Saudi Arabia / Jazan .University
Electronic references, websites	-

Course development plan : The Fundamentals of Education course is being developed by updating its content with modern educational developments, adopting interactive teaching methods, and linking theoretical and practical aspects in a manner consistent with .contemporary requirements

Course Description Form

1. Course Name:
Linear algebra
2. Course Code:
HAEPSMA26M101
3. Semester / Year:
yearly
4. Description Preparation Date:
2025/9/1
5. Available Attendance Forms:
Attendance in the classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
120/6
7. Course administrator's name (mention all, if more than one name)
Name: Ilham Matta Yacoob Email: ilhammatta@uohamdaniya.edu.iq
8. Course Objectives

Course Objectives	• Teaching first-level students in the Mathema Department the fundamentals of linear algebra • Using modern mathematical methods to so homogeneous and non-homogeneous lin equations • Utilizing matrices and recognizing the vari applications of linear algebra

9. Teaching and Learning Strategies	
Strategy	1- The discussion 2- Activities in the classroom 3- Providing examples and questions that stimulate the studen thinking.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Knowledge	MATRICES	The lectu and discussion	The questio
2	4	Knowledge	TYPES OF MATRICES	The lectu and discussion	Exam
3	4	Knowledge	INVERSE OF MATICES	The lectu and discussion	Quiz
4	4	Knowledge	METHODS FOR FINDING THE INVERSE OF A MATRIX	The lectu and discussion	Home work
5	4	Knowledge	DETERMINANTS	The lectu and discussion	The questio
6	4	Knowledge	PROPERTIES OF DETERMINANTS	The lectu and discussion	Discussion
7	4	Knowledge	INTRODUCATION OF LINEAR SYSTEMS EQUATION	The lectu and discussion	Exam
8	4	Knowledge	METHODS FOR SOLVE LINEAR SYSTEAM EQUATION	The lectu and discussion	Question a discussion
9	4	Knowledge	N-DIMENSIONAL EUCLIDEAN SPACE	The lectu and discussion	Home work
10	4	Knowledge	INNER PRODUCT	The lectu and discussion	Exam
11	4	Knowledge	DIRECT PRODUCT	The lectu and discussion	Discussion
12	4	Knowledge	VECTOR SPACE	The lectu and discussion	Discussion

13	4	Knowledge	SUBSPACES	The lectu and discussion	Discussion
14	4	Knowledge	THEOREMS	The lectu and discussion	Discussion
15	4	Knowledge	LINEAR COMBINATIO	The lectu and discussion	The questio
16	4	Knowledge	LINEAR INDEPENDENCE	The lectu and discussion	Discussion
17	4	Knowledge	DIFFERENT EXAMPLES	The lectu and discussion	Home work
18	4	Knowledge	BASIS	The lectu and discussion	Discussion
19	4	Knowledge	DIMENSION	The lectu and discussion	Discussion
20	4	Knowledge	ROW SPACE AI COLUM SPACE MATRICES	The lectu and discussion	Discussion
21	4	Knowledge	RANK OF MATRIX	The lectu and discussion	Quiz
22	4	Knowledge	LINEAR TRANSFOR MATIONS	The lectu and discussion	Discussion
23	4	Knowledge	TYPES OF LINEAR TRANSFORMATIONS	The lectu and discussion	Exam
24	4	Knowledge	KERNAL OF LINEAR TRANSFORMATION	The lectu and discussion	Discussion
25	4	Knowledge	IMAGE OF LINE TRANSFORMATION	The lectu and discussion	Discussion
26	4	Knowledge	THEOREMS	The lectu and discussion	The questio

27	4	Knowledge	EXAMPLES	The lectu and discussion	Home work
28	4	Knowledge	EIGN VALUES	The lectu and discussion	Exam
29	4	Knowledge	EIGN VECTORS	The lectu and discussion	Discussion
30	4	Knowledge	DIAGONAL MATRIX	The lectu and discussion	Discussion

11. Course Evaluation

1- Written tests
2- Adherence to the deadline for submitting assignments and reports
3- Active participation

12. Learning and Teaching Resources

Mostow. G. D. and Sampson J. H., Lin Algebra, London, 1969	
www.freecience.info.math	

SUGGESTIONS :

1- Using new concepts in linear algebra such as the Wronskian determinant.

2- Providing practical examples of matrices in the fields of economics, chemistry, physics, and various sciences.

Course Description Template

1. Course Title	
Calculus	
2. Course Code	
HAEPSMA25F100	
3. Semester / Academic Year	
First Year / 2025-2026	
4. Date of Preparation of this Description	
19 / 9 / 2025	
5. Available Attendance Modes	
Face-to-Face Instruction	
6. Total Study Hours / Total Credit Units	
150 hours / 8 units	
7. Name of Course Coordinator (If more than one, list all)	
Lecturer Dr. Hikmat Sharif Mustafa Email hekmat78@uohamdaniya.edu.iq Assist Lecturer: Shahab Ahmed Hassan shahab19862023@uohamdaniya.edu.iq	
8. Course Objectives	
Subject Learning Objectives	• 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

	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
9. Teaching and Learning Strategies	
Strategy	• Managing the lecture in a manner that emphasises the importance of time • Assigning students group tasks • Assigning students to gather sources and references and prepare a report on the lecture topic

10.Course Structure

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Teaching Method	Assessment Method
1	5	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	5	Theoretical Knowledge and Applied Analysis	Function composition and its properties	According to the teaching and learning methods outlined above	Direct questions
3	5	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	5	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	5	Theoretical Knowledge and Applied Analysis	Trigonometric functions with proofs	According to the teaching and learning methods outlined above	Direct questions
6	5	Theoretical Knowledge and Applied Analysis	Limits and continuity of functions.	According to the teaching and learning methods outlined above	Direct questions
7	5	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	5	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	5	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	5	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	5	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	5	Theoretical Knowledge and Applied Analysis	Derivation of trigonometric functions with various examples	According to the teaching and learning methods outlined above	Direct questions
13	5	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	5	Theoretical Knowledge and Applied Analysis	L'Hopital's rule with various examples	According to the teaching and learning methods outlined above	Direct questions
15	5	Theoretical Knowledge and Applied Analysis	Chain rule with various examples	According to the teaching and learning methods outlined above	Direct questions
16	5	Theoretical Knowledge and Applied Analysis	Rules of slope and tangent with examples	According to the teaching and learning methods outlined above	Direct questions
17	5	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	5	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	5	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	5	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	5	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	5	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	5	Theoretical Knowledge and	Compensation method with	According to the teaching and learning	Direct questions

		Applied Analysis	various examples + daily exam	methods outlined above	
24	5	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	5	Theoretical Knowledge and Applied Analysis	Finding integration using the method $\sqrt[n]{ax+b}$ + the division method with examples + the mid-course exam	According to the teaching and learning methods outlined above	Direct questions
26	5	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	5	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	5	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	5	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	5	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.Cource 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^{nd} 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:
Foundations of Mathematics
2. Course Code:
----
3. Semester / Year:
First Year / Annual System
4. Description Preparation Date :
2025/ 9/ 1
5. Available Attendance Forms
: On-campus (Face-to-face)
6. Number of Credit Hours (Total) / Number of Units (Total):
120
7. Course administrator's name (mention all, if more than one name)
Name: Asst. Lecturer Khaled Mohammed Shwish Email: khaledshwish@uohamdaniya.edu.iq

8. Course Objectives

Course Objectives	• Introduce students to the fundamental principles of mathematics including sets, relations, and algebraic structures. • Develop students' ability to apply logical reasoning and construct mathematical proofs. • Strengthen problem-solving skills through linking foundational mathematics with algebraic concepts. • Encourage critical thinking, scientific curiosity, and a positive attitude towards mathematics.

9. Teaching and Learning Strategies

Strategy	• Interactive lectures. • Group discussions and classroom debates. • Problem-solving and practical analysis. • Brainstorming and guided inquiry.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Theoretical knowledge applied analysis	Mathematical Logic	Lecture,discussion	Oral questions
2	4	Theoretical knowledge applied analysis	Propositional Algebra	Lecture, discussion	Written
3	4	Theoretical knowledge applied analysis	Open and Closed Statements	Lecture, discussion	Oral

4	4	Theoretical knowledge applied analysis	Sets and Set Algebra	Lecture, discussion	Oral
5	4	Theoretical knowledge applied analysis	Concept of Relations	Lecture, discussion	Oral
6	4	Theoretical knowledge applied analysis	Domain and Range of Relations	Lecture, discussion	Oral
7	4	Theoretical knowledge applied analysis	Types of Relations and Composition	Lecture, discussion	Oral
8	4	Applied knowledge	Equivalence Classes + Monthly Exam	Lecture, discussion	Written
9	4	Theoretical knowledge applied analysis	Special Applications of Relations	Lecture, discussion	Oral
10	4	Theoretical knowledge applied analysis	Theorems on Functions	Lecture, discussion	Monthly exam
11	4	Theoretical knowledge applied analysis	Inverse Functions	Lecture, discussion	Oral
12	4	Theoretical knowledge applied analysis	Cardinality of Sets	Lecture, discussion	Oral
13	4	Theoretical knowledge applied analysis	Ordinal Numbers	Lecture, discussion	Oral
14	4	Theoretical knowledge applied analysis	Set of Natural Numbers	Lecture, discussion	Oral
15	4	Theoretical knowledge applied analysis	Construction of Natural Numbers	Lecture, discussion	Oral
16	4	Theoretical knowledge applied analysis	Countable Sets	Lecture, discussion	Oral
17	4	Theoretical knowledge applied analysis	Prime Numbers	Lecture, discussion	Oral
18	4	Theoretical knowledge applied analysis	Natural Numbers and Their Properties	Lecture, discussion	Oral
19	4	Theoretical knowledge applied analysis	Peano Axioms	Lecture, discussion	Oral
20	4	Theoretical knowledge applied analysis	Binary Operations	Lecture, discussion	Oral
21	4	Theoretical knowledge applied analysis	Mathematical Systems	Lecture, discussion	Oral
22	4	Theoretical knowledge applied analysis	Theorems on Binary Operations and System	Lecture, discussion	Monthly exam
23	4	Theoretical knowledge applied analysis	Number Systems	Lecture, discussion	Oral
24	4	Theoretical knowledge applied analysis	Theorems on Number Systems	Lecture, discussion	Oral
25	4	Theoretical knowledge applied analysis	Monoids	Lecture, discussion	Oral
26	4	Theoretical knowledge applied analysis	Definitions of Identity, Inverse, and Examples	Lecture, discussion	Oral
27	4	Theoretical knowledge applied analysis	Definition of Group	Lecture, discussion	Oral
28	4	Theoretical knowledge applied analysis	Theorems on Groups	Lecture, discussion	Oral
29	4	Theoretical knowledge applied analysis	Group Isomorphism	Lecture, discussion	Oral
30	4	Comprehensive assessn	Final Examination	Written exam	Exam

11. Course Evaluation

The total grade (100 marks) is distributed as follows:

* Class participation and daily preparation: 5%
* Monthly quizzes and oral/written exams: 10%

* Midterm exam: 25%
* Final exam: 60%

12. Learning and Teaching Resources

A. Required Textbooks:
Principles of Foundations of Mathematics*
B. Main References:
* Hadi Jaber Mustafa, *Foundations of Mathematics*.
* Alfred North Whitehead, *Principia Mathematica*, 1910.
C. Recommended Books and References:
* Recent academic textbooks on fundamentals of mathematics, algebra, and mathematical logic.
* Scientific journals and specialized research papers.
D. Electronic References:
* Open educational platforms (e.g., Coursera, EdX, Khan Academy).
* Reliable educational YouTube channels on mathematics.
* University websites and digital library resources.

13. Program Development Plan

1. Keeping up with scientific advancements by periodically updating course content in line with the latest developments in the field of Mathematics.
2. Balancing between classical and modern resources in teaching to ensure comprehensive coverage of the subject matter.
3. Integrating modern educational technologies such as E-learning systems and Learning Management Platforms (LMS).
4. Enhancing students' skills in accordance with the requirements of local and international job markets.
5. Encouraging scientific research and student activities related to the program to foster critical thinking and creativity.
6. Exchanging academic expertise with Mathematics departments in Iraqi and international universities.
7. Conducting periodic program reviews by the Quality Assurance and Accreditation Committee to identify strengths and address weaknesses.

Course Description

1. Course Name
Computer 1
2. Course Code
-
3. Semester/Year
2025-2026
4. Date of preparation of this description
1/9/2025
5. Available Forms of Attendance
Physical (2 hours per week) – Electronic class
6. Number of Hours (Total) / Number of Credits (Total)
60 /2
7. Course administrator name
Name: Eng. Noor Hussain Abdullah Email: noorhussain@uohamdaniya.edu.iq
8. Course Objectives

• Learn the basic principles of computers. • Learn operating systems. • Learn Microsoft Office programs .	**Course Objectives**

9. Teaching and Learning Strategies	
1. Reading books and lieutenants related to the curriculum. 2. Exercises and activities during and outside the lecture. 3. Presentations on the topics of the lecture prepared by me. 4. Lecture, discussion, dialogue, and applied analysis.	Strategy

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Awarding Degrees to Participants	Explanation and Discussion	Introduction to Computers, Basic Computer Operations and Computer Classifications	Gain knowledge	2	First
Awarding Degrees to Participants	Explanation and Discussion	PC Main Parts, I/O Modules	Gain knowledge	2	Second
Awarding Degrees to Participants	Explanation and Discussion	Main memory, memory units and types of software	Gain knowledge	2	Third
Providing incentives for encouragement	Explanation and Discussion	Software Ownership and Virus Protection	Gain knowledge	2	Fourth
Applying Scientific and Practical	Questions and Quizzes	Daily Theoretical Exam of	Knowledge Measurement	2	V

Testing Standards		Previous Lectures			
Awarding Degrees to Participants	Explain, Discuss and Apply	Define the Microsoft office word word program and define the main workpage and the existing bars	Gain knowledge	2	Sixth
Awarding Degrees to Participants	Explain, Discuss and Apply	Text creation and processing, text formatting, table handling, spell checking, language settings	Gain knowledge	2	Seventh
Providing incentives for encouragement	Skills Training	Practical Application	Skills acquisition	2	Eighth
Awarding Degrees to Participants	Explain, Discuss and Apply	List: Insert table, insert images, equations, and mathematical symbols	Gain knowledge	2	Ninth
Providing incentives for encouragement	Skills Training	Practical Application	Skills acquisition	2	X
Awarding Degrees to Participants	Explain, Discuss and Apply	Page Layout Menu	Gain knowledge	2	Eleventh
Providing incentives for encouragement	Skills Training	Practical Application	Skills acquisition	2	Twelfth
Granting grades to participants and taking a daily exam in the previous lecture	Explain, Discuss and Apply	Design List	Gain knowledge	2	Thirteenth

Applying Scientific and Practical Testing Standards	Questions and Quizzes	Quarterly Theoretical Test	Knowledge Measurement	2	Fourteenth
Applying Scientific and Practical Testing Standards	Presenting projects	Semester Practical Exam	Measuring skills	2	Fifteenth
Awarding Degrees to Participants	Explain, Discuss and Apply	Definition of PowerPoint Presentation Software and define the main work page and existing bars	Gain knowledge	2	Sixteenth week
Awarding Degrees to Participants	Explain, Discuss and Apply	Insert, delete, duplicate slides and slide design	Gain knowledge	2	Week Seventeen
Awarding Degrees to Participants	Explain, Discuss and Apply	Kinetic effects on objects and the transitional movements of the slides	Gain knowledge	2	Week Eighteenth
Providing incentives for encouragement	Skills Training	Practical Application	Skills acquisition	2	Week Nineteen
Applying Scientific and Practical Testing Standards	Questions and Quizzes	Daily Theoretical Exam of Previous Lectures	Knowledge Measurement	2	Week 20
Awarding Degrees to Participants	Explain, Discuss and Apply	Definition of Excel Spreadsheet Software and define the main work page and existing bars	Gain knowledge	2	Week 21
Awarding Degrees to Participants	Explain, Discuss and Apply	Dealing with cells, formulas and functions	Gain knowledge	2	Week 22

Providing incentives for encouragement	Skills Training	Practical Application	Skills acquisition	2	Week Twenty Three
Awarding Degrees to Participants	Explain, Discuss and Apply	Edit Tables, Print Tables	Gain knowledge	2	Week Twenty Four
Applying Scientific and Practical Testing Standards	Questions and Quizzes	Daily Theoretical Exam of Previous Lectures	Knowledge Measurement	2	Week Twenty Five
Awarding Degrees to Participants	Explain, Discuss and Apply	Introduction to the Internet and Web Browsers, Fundamentals of Computer Networks, Internet Concept and Applications, Search Engines	Gain knowledge	2	Week Twenty Six
Awarding Degrees to Participants	Explain, Discuss and Apply	Communication & Email, Create an Email Account, Send & Receive Messages	Gain knowledge	2	Week twenty seven
Providing incentives for encouragement	Skills Training	Practical Application	Skills acquisition	2	Week Twenty Eight
Applying Scientific and Practical Testing Standards	Questions and Quizzes	Quarterly Theoretical Test	Knowledge Measurement	2	Week twenty ninth
Applying Scientific and Practical Testing Standards	Presenting projects	Semester Practical Exam	Measuring skills	2	Week 30

11.Course Evaluation

Includes interaction and commitment to attendance	10 Degrees	Daily preparation
Includes quizzes or daily questions	15 degrees	Daily exams (oral and written)
It is done once or twice a month	20 degrees	Monthly (theoretical) exams
For courses that have a practical aspect	10 Degrees	Monthly Exams (Practical or Practical)
Includes research, activities, and clerical assignments	15 degrees	Homework and Reports
Student behavior in the classroom and interaction with the teacher	10 Degrees	Discipline, Behavior, and Classroom Engagement
Exam covering a semester	20 degrees	Final Written Exam (Monthly or Quarterly)

12.Learning and Teaching Resources

1. Dr. Al-Khader Ali Al-Khader, "Fundamentals of Computers" (2016). 2. Lectures that include the rest of the curriculum vocabulary.	Required textbooks (methodology if available)
1. Dr. Ziad Mohamed Abboud, Computer and Software, Yusr Al-Mustafa Science Series, Baghdad.	Main References (Sources)

2. Anita Goel. (2010). Fundamentals of Computers. New Delhi: Pearson Education. 3. Ehsan Mohammed Al-Haysmi, Microsoft Office (2010).	
1. Joule, A. (2010). Computer Basics. Person's education in India. 2. House, D., et al. (2014). Microsoft Word, Excel, and PowerPoint.	Recommended books and references (scientific journals, reports...)
https://download-internet-pdf-ebooks.com/47-1-library-books	Electronic References, Websites

Development Plan for the Curriculum Vocabulary:

1. Linking vocabulary to sustainable development such as resource management via Excel .
2. Increasing the practical aspect to account for 60% of the course hours.
3. Use small projects to implement each program.
4. Introduce the student to system recovery software and the basics of backup.
5. Add lectures on cybersecurity.
6. Support the student with modern digital skills.

Course Description Form

1. Course name:
Developmental and Educational Psychology
2. Course code:
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)
60 hours / (4) units
7. Name of the course administrator (if more than one name is mentioned)
Name: T.A. Selvana Faris Khudur Email: selvanafaris@uohamdaniya.edu.iq :
8. Course objectives

The course aims to introduce students to:	**Course objectives**
1- Educational psychology, its concept and objectives. **2- The concept of learning, its applications, theories and educational applicationsandrole in the educational process.** **3- Information processing theory and its educational applications.** **4- Transfer of learning, its types, feedback and its importance for learners.** **5- Motivation: definition, functions, types, theoriesandTeaching.** **6- Problem solving, problem definition, learning problem solving skills.** **7- Historical backgroundForLearning by computer programs, its principles and effectiveness inALearning process.** **8- The concept of developmental psychology.**	

with meAThe stages of language development. –9 Stages of human cognitive development. –10 Stages of the emergence of theAHuman. –11 theDistinguish between branches of developmental psychology. –12	

9. Teaching and learning strategies	
The lecture. - 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).	Strategy

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: Educational Psychology: Definition, Historical Development 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 Learning and teaching: concept, nature of the learning process	2	the second

Feedback via direct questions	Lecture and discussion, brainstorming methods	Educational Psychology	Its characteristics The difference between learning and teaching	2	the third
Feedback via direct questions	Lecture and discussion	Educational Psychology	AFactors affecting learning 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 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 Memory and its types	2	The eighth
Feedback via direct questions	Lecture and discussion brainstorming methods	Educational Psychology	Theories explaining forgetting 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 Transfer of learning: definition and types	2	tenth
Feedback via direct questions	Lecture, discussion and dialogue	Educational Psychology	His educational theories and applications, assistive technologiesNIt is said after learning Learning concepts: definition of the concept, nature of its	2	eleven th

			components, influencing factors In concept acquisition, concept acquisition 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 twenti eth
Feedback via direct questions	Brainstorming, discussion and lecture techniques	Developmental Psychology	The role of social institutions in the socialization of children 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 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. 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 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 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 –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.

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 Template

1. Course Title: General Physics
2. Course Code: HAEPSMA25M
3. Semester / Academic Year: 2025/2026
4. Date of Description Preparation: 25/9/2025
5. Available Attendance Formats: In-person education
6. Total Study Hours / Total Units: 60 hours/ 4 units
60/4
7. Course Coordinator(s)
Malak Jaafar ALI malak.jaafar.ali@uohamdaniya.edu.iq
8. Course Objectives

Skills-based Objectives for General Physics **1. Understanding Physics Fundamentals: The ability to comprehend the principles and applications of physics. Equation Derivation & Problem Solving** **2. Understanding how to derive physical equations and solve related problems.** **Familiarity with Basic Measurement Units**	**Course Objectives**

9. Teaching and Learning Strategies

Discussion, dialogue, lectures, and applied analysis	**Strategies**

10. Course Structure

Assessment Method	Teaching Method	Unit/Topic Title	Intended Learning Outcomes	Hours	Week
Direct		Scalar and		2	1

questions	Lecture & discussion	vector quantities	Theoretical knowledge		
	Lecture & discussion	Vector multiplication	Theoretical knowledge & applied analysis	2	2
	Lecture & discussion	Vector differentiation – Exercises	Theoretical knowledge & applied analysis	2	3
Quiz	Lecture & discussion	Motion – Velocity – Acceleration – Free fall	Theoretical knowledge & applied analysis	2	4
	Lecture & discussion	Motion in a plane	Theoretical knowledge & applied analysis	2	5
Quiz	Lecture & discussion	Relative velocity and acceleration – Exercises	Theoretical knowledge & applied analysis	2	6
	Lecture & discussion	Circular motion – Angular displacement	Theoretical knowledge & applied analysis	2	7
	Lecture & discussion	Acceleration in circular motion	Theoretical knowledge & applied analysis	2	8
	Lecture & discussion	Force – Weight –	Theoretical knowledge &	2	9

		Center of mass	applied analysis		
Monthly Exam	Lecture & discussion +	Newton's Laws of Motion –	Theoretical knowledge	2	10
	Lecture & discussion	Work and Energy – Laws of	Theoretical knowledge & applied analysis	2	11
	Lecture & discussion	Theory of Relativity	Theoretical knowledge & applied analysis	2	12
	Lecture & discussion	Mass variation with speed –	Theoretical knowledge & applied analysis	2	13
	Lecture & discussion	Elasticity – Stress – Strain	Theoretical knowledge & applied analysis	2	14
Quiz	Lecture & discussion	Fluids – Bernoulli's Equation	Theoretical knowledge & applied analysis	2	15
	Lecture & discussion	Matter and atomic structure	Theoretical knowledge & applied analysis	2	16
	Lecture & discussion	Coulomb's Law – Electric Field	Theoretical knowledge & applied analysis	2	17
	Lecture & discussion	Electric Field Lines	Theoretical knowledge & applied analysis	2	18

	Lecture & discussion	Electric Flux	Theoretical knowledge & applied analysis	2	19
	Lecture & discussion	Gauss's Law – Applications	Theoretical knowledge & applied analysis	2	20
	Lecture & discussion	Electric Potential Difference	Theoretical knowledge & applied analysis	2	21
Monthly Exam	Monthly Exam	Electric Dipole Potential	Theoretical knowledge & applied analysis	2	22
	Lecture & discussion	Capacitance, Voltage, and Charge	Theoretical knowledge & applied analysis	2	23
	Lecture & discussion	Electric Current and Resistance	Theoretical knowledge & applied analysis	2	24
	Lecture & discussion	Ohm's Law – Mechanical Equivalent	Theoretical knowledge & applied analysis	2	25
	Lecture & discussion	Electromotive Force – Measuring Voltage and Resistance	Theoretical knowledge & applied analysis	2	26
	Lecture & discussion	Wheatstone Bridge	Theoretical knowledge & applied analysis	2	27

	Lecture & discussion	Magnetism – Magnetic Flux	Theoretical knowledge & applied analysis	2	28
	discussion	Magnetism – Magnetic Flux	Theoretical knowledge & applied analysis	2	29
	discussion	Faraday's Law		2	30

11. Course Evaluation .1	
1. Oral discussions and direct questions	
2. Written and Oral Examinations	
"General Physics: Mechanics – Electricity – Magnetism	
"By: Asst. Prof. Dr. Fouad Shaker Hashem Al-Jubouri & Prof. Dr. Ali Khalaf Hassan Al-Sunaid / University of Babylon, 201	
Grades are distributed out of 100 based on student tasks	
Electronic References & Websites	

Course Description Form

1. Course Name:	
Arabic language	
2. Course Code:	
3. Semester / Year:	
2025-2026 first Stage	
4. Description Preparation Date:	
24-9-2025	
5. Available Attendance Forms:	
In-person teaching	
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 : Assistant Lecturer Fouad Salem Rashid Ahmed Email : fouadsalem@uohamdaniya.edu.iq	
8. Course Objectives	
Course Objectives	1- Introduce students to the importance of the Arabic language and its literature, and help them understand Arabic grammar. 2.Develop students' language skills. 3.Enable students to acquire the necessary skills to understand syntactic and semantic structures. 4.Foster students' pride in the Arabic language.
9. Teaching and Learning Strategies	
Strategy	1. Provide students with knowledge and concepts of the Arabic language, preparing qualified cadres for work in institutions. 2. Teach students how to apply general Arabic grammar in their writing. 3. Discuss with students and conduct assessments to address common linguistic and expressive errors.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	1	Theoretical knowledge and applied analysis	The Holy Qur'an / Surah Al-Hajj, Verse No. (5)	Reading and interpretation of the Surah	Direct questions
2	1	Theoretical knowledge and applied analysis	The Noble Prophetic Hadith: The Prophet said, "I was only sent to perfect good morals."	Explanation of the hadith and its meanings	Direct questions
3	1	Theoretical knowledge and applied analysis	Arabic Literature / Poetic Selections from the Pre-Islamic Era / Selected Mu'allaqat	Reading the text and analyzing it technically and linguistically	Direct questions
4	1	Theoretical knowledge and applied analysis	The Poem of Al-Afwa Al-Awdi on Wisdom	Reading and analyzing the text at several levels	Direct questions
5	1	Theoretical knowledge and applied analysis	Morphology / Morphological Balance	Lecture and practical applications	Direct questions
6	1	Theoretical knowledge and applied analysis	Verb Conjugation in Terms of (Soundness, Illness, Absence, Increase, and Derivatives)	Lecture and practical applications	Direct questions
7	1	Theoretical knowledge and applied analysis	First month exam		
8	1	Theoretical knowledge and applied analysis	Linguistic Skills / Alphabets (Solar and Lunar)	Lecture and practical applications	Direct questions
9	1	Theoretical knowledge and applied	Rules for Writing Punctuation Marks	Lecture and practical applications	Direct questions

		analysis			
10	1	Theoretica knowledg and applie analysis	Rules for Writing the Hamza (First, Middle, Final, and Hamzas of Connection and Disconnection)	Lecture and practical applications	Direct questions
11	1	Theoretical knowledge and applied analysis	Arabic Dictionaries / Dictionary of Words (Definition, Importance, and Types of Dictionaries)	Lecture and practical applications	Direct questions
12	1	Theoretical knowledge and applied analysis	School Curriculum (Al-Ain and Al-Asas) and Exercise in Extracting Wordsds	Lecture and practical applications	Direct questions
13	1	Theoretical knowledge an applied analysi	Common Linguistic Mistakes	Lecture and practical applications	Direct questions
14	1	Theoretica knowledg and applie analysis	Second month exam		
15	1	Theoretical knowledge and applied analysis	The Holy Quran, Surah Al-Baqarah / Verse 260-263	Interpretatio n and analysis of verses	Direct questions
16	1	Theoretical knowledge and applied analysis	The Prophet's Hadith: "The best of you is he who learns the Quran and teaches it."	Explanation of the hadith	Direct questions
17	1	Theoretical knowledge	Seven Verses from Ibn al-Rumi's	Read and analyze	Direct questions

		and applied analysis	Ba'iyyah		
18	1	Theoretical knowledge and applied analysis	Human Values in Pre-Islamic Poetry (Islam and Poetry)	Lecture, discussion and dialogue	Direct questions
19	1	Theoretical knowledge and applied analysis	Arabic Grammar / Parts of Speech and their Inflectiona Marks, Declining and Undeclining Nouns / Definite and Indefinite Nouns	Lecture, discussion and dialogue	Direct questions
20	1	Theoretical knowledge and applied analysis	Subject and Predicate	Lecture, discussion, dialogue	Direct questions
21	1	Theoretical knowledge and applied analysi	Copyists	Lecture, discussion, dialogue	Direct questions
22	1	Theoretical knowledge and applied analysis	First month exam		
23	1	Theoretical knowledge and applied analysis	The Subject and Its Deputy	Lecture and practical applications	Direct questions
24	1	Theoretical knowledge and applied analysis	Arabic Rhetoric / A general introduction to the Arabic language (its linguistic and terminological definition), an introduction to the definition of the sciences of rhetoric, and an explanation of their relationship to the Arabic languag	Lecture and historical presentation	Direct questions

25	1	Theoretical knowledge and applied analysis	Explaining the relationship between rhetoric and the Arabic language, defining rhetoric and its types	Lecture and historical presentation	Direct questions
26	1	Theoretical knowledge and applied analysis	Simile (Definition and Types), Truth, and Metaphor	Lecture and historical presentation	Direct questions
27	1	Theoretical knowledge and applied analysis	Linguistic metaphor (its definition, relationships, and applications), metaphor (its definition, types, and applications)	Lecture and historical presentation	Direct questions
28	1	Theoretical knowledge and applied analysis	Metaphor (its definition, relationships, and applications), and metonymy (its definition, types, and applications)	Lecture and historical presentation	Direct questions
29	1	Theoretical knowledge and applied analysis	Second month exam		
30	1	Theoretical knowledge and applied analysis	Common linguistic error		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, Sufficient Morphology, Ayman Amin Abdul-

	Ghani
Recommended books and references (scientific journals, reports...)	Meanings of Grammar - Dr. Fadhel Al-Samarrai, Comprehensive Grammar - Abbas Hassan
Electronic References, Websites	Waqf Library, Wadud Library

Course Description Form

1. Course Name
Systems of Axioms and Geometry
2. Course Code
3. Semester/Year
2025/2026
4. Date of preparation of this description
1/9/2025
5. Available Forms of Attendance
In-person (3 hours per week) – Classroom
6. Number of Hours (Total) / Number of Credits (Total)
3/90
7. Course administrator name (if more than one name mentioned)
Name : Waleed Abdul Majeed Saeed **Email :** waleedhajo1992@uohamdaniya.edu.iq
8. Course Objectives

1. **Explain the basics of engineering, engineering systems and axioms** 2. **Enabling him to prove the proofs in a logical and sound manner, starting from the data that is required to be proved, drawing and then proof.** 3. **He shows him the direct and indirect methods of proof.**	**Course Objectives**

9. Teaching and Learning Strategies	
1. discussion.	**Strategy**

2. **Activities in the Classroom** 3. **Continuous quarterly, daily and weekly exams**	

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Direct Questions	Lecture, Discussion and Dialogue	Chapter One The Axiomatic System	Knowledge	3	First
Direct Questions	Lecture, Discussion and Dialogue	Specific Geometry (UNC System and Fano System)	Knowledge	3	Second
Direct Questions	Lecture, Discussion and Dialogue	Chapter Two Characteristics of the Axiomatic System	Knowledge	3	Third
Direct Questions	Lecture, Discussion and Dialogue	Examples	Knowledge	3	Fourth
Direct Questions	Lecture, Discussion and Dialogue	Chapter Three: Euclidean Geometry	Knowledge	3	V
Discussion + Direct Questions	Lecture, Discussion and Dialogue	Chapter Four: The Foundations of Engineering – The Hilbert	Knowledge	3	Sixth

		System			
Discussion + Direct Questions	Lecture, Discussion and Dialogue	Segmentation – Segmentation – Bach's Axiom	Knowledge	3	Seventh
General Questions and Discussion	Lecture, Discussion and Dialogue	Convex groups	Knowledge	3	Eighth
Duties	Lecture, Discussion and Dialogue	Chapter Five: Conformity and Comparison	Knowledge	3	Ninth
Discussion + Direct Questions		Chapter Six Primary Engineering	Knowledge	3	X
discussion	Lecture, Discussion and Dialogue	External Angles Theorem	Knowledge	3	Eleventh
discussion	Lecture, Discussion and Dialogue	Chapter Seven Measurement	Knowledge	3	Twelfth
discussion	Lecture, Discussion and Dialogue	Chapter VIII The Fifth Axiom of Euclid	Knowledge	3	Thirteenth
discussion	Lecture,	Attempts to prove	Knowledge	3	Fourte

	Discussion and Dialogue	Euclid's fifth axiom with criticism			enth
General Questions	Lecture, Discussion and Dialogue	Chapter Nine Non-Euclidean Geometry	Knowledge	3	Fifteenth
discussion	Lecture, Discussion and Dialogue	Adjacent Triangle	Knowledge	3	Sixteenth week
Duties	Lecture, Discussion and Dialogue	Consistency of the Hathlouli level	Knowledge	3	Week Seventeen
discussion	Lecture, Discussion and Dialogue	Chapter Ten Elliptical Engineering	Knowledge	3	Week Eighteenth
discussion	Lecture, Discussion and Dialogue	Comparison Table between Euclidean and Non-Euclidean Geometry	Knowledge	3	Week Nineteen
discussion	Lecture, Discussion and Dialogue	Chapter Eleven Structural Projection Geometry	Knowledge	3	Week 20
Discussion +	Lecture,	The principle of	Knowledge	3	Week

Direct Questions	Discussion and Dialogue	duality			21
discussion	Lecture, Discussion and Dialogue	Chapter Twelve: The Analytical Projective Level	Knowledge	3	Week 22
Weekly exam	Discussion and Dialogue	Analytical model	Knowledge	3	Week Twenty Three
discussion	Discussion and Dialogue	Chapter Thirteen Conversion Engineering	Knowledge	3	Week Twenty Four
discussion	Discussion and Dialogue	Engineering Conversion	Knowledge	3	Week Twenty Five
General Questions	Discussion and Dialogue	Projective Geometry	Knowledge	3	Week twenty sixth
Duties	Discussion and Dialogue	Partial groups	Knowledge	3	Week twenty seven
Weekly exam	Discussion and Dialogue	Analytical Damage Level	Knowledge	3	Week Twenty Eight
discussion	Discussion and Dialogue	Euclidean level	Knowledge	3	Week twenty ninth

Duties	Discussion and Dialogue	Partial Engineering	Knowledge	3	Week 30

11.Development Plan for Curriculum Modernization

Harmonic groups

12. Course Evaluation

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

13.Learning and Teaching Resources

Basic Concepts in Engineering / Written by Prof. Dr. Amal Shehab Al-Mukhtar – Second Edition 2012	**Required textbooks (methodology if available)**
Systems of Axioms and Geometry by Abdul Wahab Ahmed Al-Sarraj Salah Al-Din University Iraq Conversion Engineering and Compositional Engineering by Max Geiger Translated by Dr. Mohamed Adel Sudan Dr. Mowafaq Daaboul Dr. Mohamed Saeed Al-Barni	**Main References (Sources)**
Systems of Axioms and Geometry by Abdul Wahab Ahmed Al-Sarraj Salah Al-Din	**Recommended books and references (scientific journals, reports...)**

University Iraq	
www.freecience.info.math	**Electronic References, Websites**

Course Description Form

1. Course Name
Teaching Thinking
2. Course Code
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
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 7- Assignment and Class Activities	Strategy
10. Course Structure	

Evaluation Method	Teaching Method	Unit Name or Subject	Required Learning Outcomes	Hours	The week
Group discussio	**Discussion and exchange of views**	The Historical Development	**Introducing the student to thinking**	**One hour**	**1**

جامعة الحمدانية
قسم الرياضيات
كلية التربية للعلوم الصرفة

ns and direct questions		of Thinking Education			
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 direct questions	Discussion and exchange of views	Barriers to Teaching Thinking	**Introducing the student to thinking**	**One hour**	**9**
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 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 direct questions	Discussion and exchange of views	Thinking Teaching Programs	**Barriers to thinking**	**One hour**	**19**

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 direct questions	Discussion and exchange of views	Mind Maps	**Introducing the Student's Personal Options Skills**	**One hour**	**29**
----------	---------	---------	**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: 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

1. Course Name
computer II
2. Course Code
-
3. Semester/Year
2025-2026
4. Date of preparation of this description
1/9/2025
5. Available Forms of Attendance
Physical (2 hours per week) – Electronic class
6. Number of Hours (Total) / Number of Credits (Total)
60 /2
7. Course administrator name
Name: Eng. Noor Hussain Abdullah Email: noorhussain@uohamdaniya.edu.iq
8. Course Objectives

• Understand the principles and techniques of computer human intelligence simulation.	Course Objectives

• Develop the student's critical and creative thinking skills to deal with artificial intelligence. • Learn to troubleshoot your computer. • Learn security, networking, and e-commerce.	

9. Teaching and Learning Strategies	
1. Reading books and lectures related to the curriculum. 2. Exercises and activities during and outside the lecture. 3. Presentations on the topics of the lecture. 4. Lecture, discussion, dialogue, and applied analysis.	Strategy

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Awarding Degrees to Participants	Explanation and Discussion	Security and Networks: What is a Network? Types of Networks, Basic Components of a Network	Gain knowledge	2	First
Providing incentives for encouragement	Skills Training	Network Security Basics	Skills acquisition	2	Second
Awarding Degrees to Participants	Explain, Discuss and Apply	Network troubleshooting	Gain knowledge	2	Third
Applying Scientific and	Questions and Quizzes	Conducting a daily exam with	Knowledge Measurement	2	Fourth

Practical Testing Standards		previous lectures			
Awarding Degrees to Participants	Explain, Discuss and Apply	E-commerce: Concepts of e-banking including online banking,	Gain knowledge	2	V
Providing incentives for encouragement	Skills Training	ATM & Debit Card Services	Skills acquisition	2	Sixth
Awarding Degrees to Participants	Explain, Discuss and Apply	SMS Banking	Gain knowledge	2	Seventh
Providing incentives for encouragement	Skills Training	Electronic Alerts & Mobile Banking	Skills acquisition	2	Eighth
Applying Scientific and Practical Testing Standards	Questions and Quizzes	Conducting a daily exam with previous lectures	Knowledge Measurement	2	Ninth
Providing incentives for encouragement	Skills Training	Troubleshooting	Skills acquisition	2	X
Awarding Degrees to Participants	Explain, Discuss and Apply	Identify and resolve common hardware and software problems faced by computer users	Gain knowledge	2	Eleventh
Providing incentives for encouragement	Skills Training	Basic Techniques and Tools for Diagnosing and Solving Problems	Skills acquisition	2	Twelfth
Applying Scientific and Practical	Questions and Quizzes	Conducting a daily exam with previous lectures	Knowledge Measurement	2	Thirteenth

Testing Standards					
Applying Scientific and Practical Testing Standards	Questions and Quizzes	Quarterly Theoretical Test	Knowledge Measurement	2	Fourteenth
Applying Scientific and Practical Testing Standards	Presenting projects	Semester Practical Exam	Measuring skills	2	Fifteenth
Awarding Degrees to Participants	Explain, Discuss and Apply	Introduction to Artificial Intelligence	Gain knowledge	2	Sixteenth week
Providing incentives for encouragement	Skills Training	Definition of Artificial Intelligence, its History, Techniques and Methodology	Gain knowledge	2	Week Seventeen
Awarding Degrees to Participants	Explanation and Discussion	Challenges and Ethical Considerations of Artificial Intelligence	Gain knowledge	2	Week Eighteenth
Providing incentives for encouragement	Skills Training	Artificial Intelligence in Our Daily Life	Skills acquisition	2	Week Nineteen
Awarding Degrees to Participants	Explain, Discuss and Apply	Artificial Intelligence Applications	Skills acquisition	2	Week 20
Applying Scientific and Practical Testing Standards	Questions and Quizzes	Conducting a daily exam with previous lectures	Knowledge Measurement	2	Week 21
Awarding Degrees to Participants	Explanation and Discussion	Artificial Intelligence and Society	Gain knowledge	2	Week 22
Providing incentives for encouragement	Explanation and Discussion	Its impact on social and international relations and the future of humanity	Gain knowledge	2	Week Twenty Three

Awarding Degrees to Participants	Explanation and Discussion	Ethical Challenges in Artificial Intelligence	Gain knowledge	2	Week Twenty Four
Providing incentives for encouragement	Skills Training	Privacy & Monitoring	Gain knowledge	2	Week Twenty Five
Awarding Degrees to Participants	Explanation and Discussion	The Impact of Artificial Intelligence on the Labor Market	Gain knowledge	2	Week Twenty Six
Awarding Degrees to Participants	Explanation and Discussion	The Future of Artificial Intelligence	Gain knowledge	2	Week twenty seven
Providing incentives for encouragement	Skills Training	Future Trends in Artificial Intelligence Modern Research and Emerging Technologies	Skills acquisition	2	Week Twenty Eight
Applying Scientific and Practical Testing Standards	Questions and Quizzes	Quarterly Theoretical Test	Knowledge Measurement	2	Week twenty ninth
Applying Scientific and Practical Testing Standards	Presenting projects	Semester Practical Exam	Measuring skills	2	Week 30

11.Course Evaluation

Includes interaction and commitment to attendance	10 Degrees	Daily preparation
Includes quizzes or daily questions	15 degrees	Daily exams (oral and written)

It is done once or twice a month	20 degrees	Monthly (theoretical) exams
For vocabulary that includes the practical side	10 Degrees	Monthly Exams (Practical or Practical)
Includes research, activities, and clerical assignments	15 degrees	Homework and Reports
Student behavior in the classroom and interaction with the teacher	10 Degrees	Discipline, Behavior, and Classroom Engagement
Exam covering a semester	20 degrees	Final Written Exam (Monthly or Quarterly)

12.Learning and Teaching Resources

1. Dr. Adel Abdel Nour, "Introduction to the World of Artificial Intelligence" , 2005. 2. Lectures that include curriculum vocabulary.	Required textbooks (methodology if available)
Ahmed Banafa,"Introduction to Artificilal Intelligence(AI)'', 1 st Edition(2024)	Main References (Sources)
David L. Poole &Alan K. Mackworth,"Artificial Intelligencce:Foundations of Computational Agents"(2017)	Recommended books and references (...scientific journals, reports)
https://www.csail.mit.edu	Electronic References, Websites

Development Plan for the Curriculum Vocabulary:

1. **Adding a chapter on artificial intelligence and sustainability.**
2. **Providing a hands-on lab for the application of artificial intelligence programs.**
3. **Developing the student's educational outcomes by applying a simple practical model and proposing innovative ideas for AI-based graduation projects.**
4. **Work on an application project and this is by designing a simple artificial intelligence application.**

Course Description Form

1. Course Name:
Group Theory
2. Course Code:
HAEPSMA26M101
3. Semester / Year:
yearly
4. Description Preparation Date:
2025/9/1
5. Available Attendance Forms:
Attendance in the classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
90/5
7. Course administrator's name (mention all, if more than one name)
Name: Ilham Matta Yacoob Email: ilhammatta@uohamdaniya.edu.iq
8. Course Objectives

Course Objectives	• Apply various binary operations to fo mathematical systems. • How to logically infer the steps of pr and connect the theorems

9. Teaching and Learning Strategies	
Strategy	1- The discussion 2- Activities in the classroom 3- Providing examples and questions that stimulate the studen thinking.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Knowledge	Binary operations	The lectu and discussion	The questio
2	3	Knowledge	Semi group monoid	The lectu and discussion	Exam
3	3	Knowledge	group	The lectu and discussion	Quiz
4	3	Knowledge	Example of group	The lectu and discussion	Home work
5	3	Knowledge	Theorems about t groups	The lectu and discussion	The questio
6	3	Knowledge	problem	The lectu and discussion	Discussion
7	3	Knowledge	Symmetric group	The lectu and discussion	Exam
8	3	Knowledge	Examples of symmet group	The lectu and discussion	Question a discussion
9	3	Knowledge	Special cases of group	The lectu and discussion	Home work
10	3	Knowledge	problem	The lectu and discussion	Exam
11	3	Knowledge	Theorems of intege modulon	The lectu and discussion	Discussion
12	3	Knowledge	Example of intege group modulon	The lectu and discussion	Discussion
13	3	Knowledge	subgroups	The lectu and discussion	Discussion

14	3	Knowledge	Theorems abo subgroups	The lectu and discussion	Discussion
15	3	Knowledge	Problems of a subgrou	The lectu and discussion	The questio
16	3	Knowledge	Cyclic group	The lectu and discussion	Discussion
17	3	Knowledge	Examples of a cyc group	The lectu and discussion	Home work
18	3	Knowledge	The coset	The lectu and discussion	Discussion
19	3	Knowledge	Relation between t subgroup and the cose	The lectu and discussion	Discussion
20	3	Knowledge	Normal subgroups	The lectu and discussion	Discussion
21	3	Knowledge	Quotient group	The lectu and discussion	Quiz
22	3	Knowledge	problem	The lectu and discussion	Discussion
23	3	Knowledge	Order of a group a subgroup	The lectu and discussion	Exam
24	3	Knowledge	Lagrang theorem	The lectu and discussion	Discussion
25	3	Knowledge	Definition homomorphism a example	The lectu and discussion	Discussion
26	3	Knowledge	Theorems abo homomorphism	The lectu and discussion	The questio
27	3	Knowledge	isomorphism	The lectu and discussion	Home work

28	3	Knowledge	Theorems abo homomorphism a isomorphism	The lectu and discussion	Exam
29	3	Knowledge	The foundamen theorems of a ri homomorphism	The lectu and discussion	Discussion
30	3	Knowledge	problem	The lectu and discussion	Discussion

11. Course Evaluation

1- Written tests
2- Adherence to the deadline for submitting assignments and reports
3- Active participation

12. Learning and Teaching Resources

Abstract Algebra,Da M.Burton,1988,wm c.Brown Publishers	
Group theory , r-kumar, u.b.jawahar nag delhi,2006. Group theory , j .s.milue.2010	

SUGGESTIONS :

1- Updating the curriculum vocabulary in line with scientific progress
2- Providing modern sources

Course Description Form

1. Course Name
Advanced Calculus
2. Code/No.
HAEPSMA25F200
3. Semester/year
2025-2026
4. date of preparation Date
1/09/2025
5.Available Attendance Forms
In person Learning
6.Number of Credit Hours (total) / Number of Units (total)
150 (hours) / 8 units
7. Course administrator's name (mention all,if more than one name)
Name: Dr.Wafaa Salih Ramadan **Email: wafamath@uohamdaniya.edu.iq**
8. Course objectives

Course objectives	• Recognize the concepts and applications of multivariate calculus. • Learn difficult concepts in analytical geometry, sequences, and series.
9.Teaching and learning strategies	
Strategy	Lecture , Discussion , Group Learning

10 . Course Structure

Week	Hours	Required Learning outcomes	Unit or subject name	Learning method	Evalution Method
1	5	Explain the concept Numerical Sequence and their properties	Numerical Sequences	Lecture and Discussion	Assignments and daily exams
2	5	Apply Convergence Test to Numerical Sequences	Numerical Sequences	Lecture and Discussion	Assignments and daily exams
3	5	Describe the concept of infinite series	infinite series	Lecture and Discussion	Assignments and daily exams
4	5	Perform tests for convergence of numerical series	infinite series	Lecture and Discussion	Assignments and daily exams
5	5	Understand The concept of Power series and apply relevant tests	infinite series	Lecture and Discussion	Assignments and daily exams

6	5	Understanding The concept of Vectors in space	Vector Algebra	Lecture and Discussion	Assignments and daily exams
7	5	Understanding The equation of the line and the plane	Equation of the line and the plan	Lecture and Discussion	Assignments and daily exams
8	5	Understanding The Polar Coordinate system	Polar Coordinates	Lecture and Discussion	Assignments and daily exams
9	5	Draw curves in Polar Coordinates	Polar Coordinates	Lecture and Discussion	Assignments and daily exams
10	5	Calculating arc length and enclosed area	Polar Coordinates	Lecture and Discussion	Assignments and daily exams
11	5	Understanding the concept of Partial andtotal Derivatives	Advanced Calculus	Lecture and Discussion	Assignments and daily exams
12	5	Understanding types of polar operators	Advanced Calculus	Lecture and Discussion	Assignments and daily exams
13	5	Calculation and classifying Extreme values	Advanced Calculus	Lecture and Discussion	Assignments and daily exams
14		Solving	Advanced		

	5	optimization problems Lagrange Method	Calculus	Lecture and Discussion	Assignments and daily exams
15	5	Exam And Solving exercises	Advanced Calculus		
16	5	plotting curves in plan	Advanced Integration	Lecture and Discussion	Assignments and daily exams
17	5	Theoretical knowledge and applied analysis	Advanced Integration	Lecture and Discussion	Assignments and daily exams
18	5	Calculating line integrals	Advanced Integration	Lecture and Discussion	Assignments and daily exams
19	5	Calculating Double integrals	Advanced Integration	Lecture and Discussion	Assignments and daily exams
20	5	Application of line and double integrals	Advanced Integration	Lecture and Discussion	Assignments and exams
21	5	Understanding Creene's Theorem	Advanced Integration	Lecture and Discussion	Assignments and daily exams
22	5	Understanding Creene's Theorem	Analytical Geometry	Lecture and Discussion	Assignments and daily exams

23	5	Plotting Surface in Space	Advanced Integration	Lecture and Discussion	Assignments and daily exams
24	5	Calculating double integrals	Advanced Integration	Lecture and Discussion	Assignments and daily exams
25	5	Calculating triple integrals	Advanced Integration	Lecture and Discussion	Assignments and daily exams
26	5	Calculating surface integrals	Advanced Integration	Lecture and Discussion	Assignments and daily exams
27	5	Understanding applactions of triple integrals and surface integrals	Advanced Integration	Lecture and Discussion	Assignments and daily exams
28	5	Understanding Stokes' theorem	Advanced Integration	Lecture and Discussion	Assignments and daily exams
29	5	Understanding Stokes' theorem	Advanced Integration	Lecture and Discussion	Assignments and daily exams
30	5	Exam And Solving exercises	Advanced Integration		

11. Course Evaluation	
Monthly Quizzes :15 marks **Midterm Exam :25 marks** **Final Exam: 60 marks**	
12. Learning and Teaching Resources	
Required textbooks (if any)	Calculus of Calculus by J. Purcell (Part Two)
Main References	Calculus, Anton. Bivens. Ian Davis
Supporting Books and References Recommended (Scientific Journals , Reports,....)	Schaums Outlines
Electronic Refernces,Internet Sites	Websites Related to Calculus and analytical geometry
13.Cours Development Plan	
1.Add modern application of multiple integrals in physics and engineering	
2.Explan coverage of Greens , Gauss's,and Stokes' Theorems with applied examles	

Course Description Form

1. Course Name	
Ordinary Differential Equations	
2. Code/No.	
HAEPSMA25F202	
3. Semester/year	
2025-2026	
4. date of preparation Date	
1/09/2025	
5.Available Attendance Forms	
In person Learning	
6. Number of Credit Hours (total) / Number of Units (total)	
120 (hours) / 6 units	
7. Course administrator's name (mention all,if more than one name)	
Name: Lect.Raed Sabeeh Karyakos Email:raed_sabeeh@uohamdaniya.edu.iq	
8. Course objectives	
Course objectives	The course aims to enable the student to identify the types of ordinary differential equations and how to choose the appropriate method to solve them.

9.Teaching and learning strategies	
Strategy	1.Lecture, discussion, dialogue, and daily assignments . 2.Daily surprise tests and ongoing weekly quizzes 3.Classroom exercises and activities . 4.Guiding students to resources containing examples and exercises for their benefit.

10 . Course Structure

week	Hours	Required learning outcomes	Unit or subject name	Learning method	Evaluation Method
1	4	Theoretical Knowledge and applied Analysis	Differential equation and Ordinary Differential equation	Lecture and Discussion	Assignments and daily exams
2	4	Theoretical Knowledge and applied Analysis	partial Differential equation and order of Differential equations	Lecture and Discussion	Assignments and daily exams

3	4	Theoretical Knowledge and applied Analysis	Degree of Differential equations , Linear and Non linear Differential equation and Homogenous Differential equations	Lecture and Discussion	Assignments and daily exams
4	4	Theoretical Knowledge and applied Analysis	Intial Value Problems Boundary Value Problems System of Differential equations	Lecture and Discussion	Assignments and daily exams
5	4	Theoretical Knowledge and applied Analysis	General Solution,Particular solution and singular solution	Lecture and Discussion	Assignments and daily exams
6	4	Theoretical Knowledge and applied Analysis	Composition the differential equation from the General solution,	Lecture and Discussion	Assignments and daily exams
7	4	Theoretical	Separable	Lecture and	Assignments

		Knowledge and applied Analysis	equation, Homogenous equation	Discussion	and daily exams
8	4	Theoretical Knowledge and applied Analysis	Exams		
9	4	Theoretical Knowledge and applied Analysis	Existence and uniqueness of the solution	Lecture and Discussion	Assignments and daily exams
10	4	Theoretical Knowledge and applied Analysis	Exact Differential equation	Lecture and Discussion	Assignments and daily exams
11	4	Theoretical Knowledge and applied Analysis	Bernoulli's equations	Lecture and Discussion	Assignments and daily exams
12	4	Theoretical Knowledge and applied Analysis	Equation that is solved using asuitable substitution	Lecture and Discussion	Assignments and daily exams
13	4	Calculation and classifying Extreme values	Growth and Decay of population	Lecture and Discussion	Assignments and daily exams
14	4	Theoretical Knowledge	Cooling problem	Lecture and	Assignments

		and applied Analysis		Discussion	and daily exams
15	4	Theoretical Knowledge and applied Analysis	Exam		
16	4	Theoretical Knowledge and applied Analysis	Linear differential equations of order n (Def and theorem)	Lecture and Discussion	Assignments and daily exams
17	4	Theoretical knowledge and applied analysis	The wronskian determinant	Lecture and Discussion	Assignments and daily exams
18	4	Theoretical Knowledge and applied Analysis	Differential operator	Lecture and Discussion	Assignments and daily exams
19	4	Theoretical Knowledge and applied Analysis	Solution of the linear differential equation of the high order	Lecture and Discussion	Assignments and daily exams
20	4	Theoretical Knowledge and applied Analysis	Solution of the Homogenous differential equation of the high order	Lecture and Discussion	Assignments and exams
21	4	Theoretical Knowledge and applied	Monthly Exam		

		Analysis			
22	4	Theoretical Knowledge and applied Analysis	Laplace Transform	Lecture and Discussion	Assignments and daily exams
23	4	Theoretical Knowledge and applied Analysis	Laplace Transform	Lecture and Discussion	Assignments and daily exams
24	4	Theoretical Knowledge and applied Analysis	Laplace Transform	Lecture and Discussion	Assignments and daily exams
25	4	Theoretical Knowledge and applied Analysis	Laplace Transform	Lecture and Discussion	Assignments and daily exams
26	4	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams
27	4	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams
28	4	Theoretical Knowledge and applied Analysis	Power series solution of the linear differential equation	Lecture and Discussion	Assignments and daily exams

29	4	Theoretical Knowledge and applied Analysis	Power series solution of the linear differential equation	Lecture and Discussion	Assignments and daily exams
30	4	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams

11. Course Evaluation	
Monthly Quizzes :15 marks **Midterm Exam :25 marks** **Final Exam: 60 marks**	
12. Learning and Teaching Resources	
Required textbooks (if any)	
Main References	1.Differential Equations and Their Applications Assistant Professor Marouf Mohammed Hadid and Assistant Professor Rashid Abdul Razzaq 2.Methods for Solving Differential Equations Professor Khaled Ahmed Al-Samarrai and Assistant Professor Yahya Abdul Saeed
Supporting Books and References Recommended (Scientific Journals , Reports,....)	The most important books and resources on partial differential equations available in the Central

	Library
Electronic Refernces,Internet Sites	-Reliable websites - Virtual library
13.Cours Development Plan	
1.Linking partial Differential Equations with Engineering (Electric potential,Heat Flow,Vibrations)	
2.Spectral Analysis and a Broader study of Fourier Series	

Course Description Form

1. Course Name
Leadership and Educational Administration
2. Course Code
3. Semester/Year
2026- 2025
4. Date of Preparation of This Row
18/9/2025
5. Available Forms of Attendance
Came
6. Number of Hours (Total) / Number of Units (Total)
2 / Total Number (60)/ (4) credit
7. Name of the course administrator) if more than one name is mentioned)
Name: Shawqi Sabah Bahnam Email: shawqi.bahnam@uohamdaniya.edu.iq
8. Course Objectives
Introducing students to the importance of educational administration Introducing students to the principles of educational administration Enabling students in educational administration, educational administration, school administration, classroom management, educational supervision and administrative processes Identifying Recent Trends in Educational Administration Introducing students to the importance of educational administration Introducing students to the principles of educational administration Enabling students in educational administration, educational administration, school administration, classroom management, educational supervision and administrative processes Identifying Recent Trends in Educational Administration
9. Teaching and Learning Strategy
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.

10. Course Structure

Evaluation Method	Teaching Method	Topic NameTopic Name	Required Learning Outcomes	Hours	Week
Oral and written testing	Lecture	Types of Departments	Students should be able to understand Meaning of Ultra Managementبوية and educational	2	1
test Oral and WrittenOral and Written	Lecture	History of the Administration	Students' knowledge of the 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 educationalDifferentiation between Educational Administration and educational	2	3
Oral and written testing	Dialog Discussion	Management operation	Know its importance and need Lies 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	Be 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 Moral or material incentives	2	9
Oral and written testing	Dialog Discussion	Evaluation & Evaluation	Understand the difference between assessment and evaluation, and how to use them.	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 Know 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 Administrative	Knowledge of social theories	2	21
Oral and written testing	Dialog Discussion	Educational supervision	Recognize 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

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

	Textbooks Methodology
	Sources and Approved References/ Khaled Abdullah Dahmash (2016) (Educational Administration. Abdullah Ahmed Ahmed Amarat (2009) The Perspective of Al-Kadba Educational Administration Hasina Haram (2009) Educational Institutions Management Ahmed Battah (2006), Contemporary Issues in Educational Administration Ahmed Mohammed Al Hubaishi (201)Sources and Approved References/ Kha Abdullah Dahmash (2016) (2), Educational Administration. Abdullah Ahmed Ahmed Amarat (2009) The Perspective of Al-Kadba Educational Administration Hasina Haram (2009) Educational Institutions Management Ahmed Battah (2006), Contemporary Issues in Educational Administration

	Ahmed Mohammed Al Hubaishi (201)
	Electronic References and Websites.Electronic References and Websites.

Course Description Form

1. Course Name:
Baath regime crimes in Iraq
2. Course Code:
3. Semester / Year:
2026-2025
4. Description Preparation Date:
2025/9/29
5. Available Attendance Forms:
In-person education
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: Mohammed Mohsen Hassan Email: muhammadmhassan@uohamdaniya.edu.iq

8. Course Objectives	
Course Objectives	**Specific Skills Objectives of the "Crimes of the Ba'ath Regime in Iraq" Course for the Second Stage May Include:** **Analytical Skills:** • Analyzing important events in Iraq's political history. • Developing students' ability to understand the differences between a dictatorial regime and a democratic system. **Reading Skills:** • Understanding legal texts related to human rights in countries governed by a dictatorial regime.

9. Teaching and Learning Strategies	
Strategy	1. Understanding the nature of the ruling regime during the Ba'ath Party's rule in Iraq. 2. Introducing students to the severity of the Ba'ath Party's crimes in Iraq. 3. Enhancing students' knowledge about the darkest period in modern Iraqi

	history.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	1	Theoretical knowledg	The Anfal operations crime and the crime of executing a number of Iraqi merchants	The lecture and discussion and dialogue	Feedback via direct questions
Second	1	Theoretical knowledg	Categories of crimes and t crimes of the Ba'ath regin as documented under the Law of the Iraqi High Tribunal of 2005	The lecture and discussion and dialogue	Feedback via direct questions
Third	1	Theoretical knowledg	Types of international crii	The lecture and discussion and dialogue	Feedback via direct questions
Fourth	1	Theoretical knowledg	Decisions issued by the Ir High Tribunal, and the mo prominent cases adjudicat by the court: the Dujail Massacre crime and the Halabja bombing crime	The lecture and discussion and dialogue	Feedback via direct questions
Fifth	1	Theoretical knowledg	The Anfal operations crim and the crime of executing number of Iraqi merchant	The lecture and discussion and dialogue	Feedback via direct questions
Sixth	1	Theoretical knowledg	The crime of suppressing Sha'ban Uprising, the crir of the Friday Prayer event and the liquidation of religious and secular parti and the crime of displacin the Fayli Kurds	The lecture and discussion and dialogue	Feedback via direct questions
Seventh	1	exam			
Eight	1	Theoretical knowledg	Psychological crimes and their mechanisms	The lecture and discussion and dialogue	Feedback via direct questions
Ninth	1	Theoretical knowledg	The effects of psychologic crimes	The lecture and discussion and dialogue	Feedback via direct questions
Tenth	1	Theoretical knowledg	Social crimes and the militarization of society	The lecture and discussion and dialogue	Feedback via direct questions
Eleventh	1	Theoretical knowledg	The Ba'ath regime's stanc on religion	The lecture and discussion and dialogue	Feedback via direct questions

Twelfth	1	Theoretical knowledg	Continuation of the discussion on the Ba'ath regime's stance on religio and the outcomes of the Sha'ban Uprising	The lecture and discussion and dialogue	Feedback via direct questions
Thirteenth	1	Theoretical knowledg	Violations of Iraqi laws a examples of human rights violations and crimes committed by the authorit	The lecture and discussion and dialogue	Feedback via direct questions
Fourteenth	1	Theoretical knowledg	A review of some of the Ba'ath Party's crimes aga the Iraqi people	Lecture and discussion	Feedback via direct questions
Fifteenth	1	exam			
Sixteenth	1	Theoretical knowledg	Locations of prisons and detention centers under th Ba'ath regime	Lecture, discussion and dialogue	Feedback via direct questions
Seventeenth	1	Theoretical knowledg	The environmental crimes the Ba'ath regime in Iraq: war-related and radioactiv pollution	Lecture, discussion and dialogue	Feedback via direct questions
Eighteenth	1	Theoretical knowledg	The use of internationally prohibited weapons such a chemical weapons and the effects in certain areas	Lecture, discussion and dialogue	Feedback via direct questions
Ninteenth	1	Theoretical knowledg	Pollution caused by radioactive materials	Lecture, discussion and dialogue	Feedback via direct questions
Twenty	1	Theoretical knowledg	The destruction of cities a villages (scorched earth policy)	Lecture, discussion and dialogue	Feedback via direct questions
Twenty-first	1	Theoretical knowledg	The draining of the marsh	Brainstorming, discussion and lecture techniq	Feedback via direct questions
Twenty-second	1	Theoretical knowledg	The bulldozing of palm groves, orchards, and crop		Feedback via direct questions
Twenty-Third	1	exam			
Twenty-Forth	1	Theoretical knowledg	Events of mass graves perpetrated by the Ba'ath regime in Iraq	Discussion and dialogue	Feedback via direct questions
Twenty-Fifth	1	Theoretical knowledg	Events spanning 1979–20 and their connection to ma graves	Discussion and dialogue	Feedback via direct questions
twenty-sixth	1	Theoretical knowledg	Chronological classificati of mass grave crimes in Ir for the period 1963–2003	Discussion and dialogue	Feedback via direct questions
twenty-seventh	1	Theoretical knowledg	Mass graves related to the Iran–Iraq War	Discussion and dialogue	Feedback via direct questions

twenty-eighth	1	Theoretical knowledg	Mass graves of the Kurds mass graves of the victim the Anfal Massacre	Discussion and dialogue	Feedback via direct questions
twenty-ninth	1	Theoretical knowledg	Mass graves of the victim the 1991 Sha'ban Uprisin	Discussion and dialogue	Feedback via direct questions
thirtieth	1	exam			

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	المنهاج الوزاري "جرائم نظام البعث في العراق"
Main references (sources)	انقلاب 17 تموز 1968 – 2003 ، البداية المريبة والنهاية المأساة لسيف الدين الدوري. التأسيس المعرفي لدراسة جرائم حزب البعث في العراق لقيس ناصر ، وعبد الهادي معتوق الحاتم.
Recommended books and references (scientific journals, reports...)	Review of electronic and internet references, including reputable scientific websites and library websites of some international universities
Electronic References, Websites	The website of the National Higher Commission for Accountability and Justice

Course Description Form

1. Course Name: Rings algebra
2. Course Code: ----------
3. Semester / Year: year
4. Description Preparation Date: 2026
5. Available Attendance Forms: attend
6. Number of Credit Hours (Total) / Number of Units (Total) : 90
7. Course administrator's name (mention all, if more than one name)
Name: Sahbaa Abd alsttar Email: Sahbaa1977@uohamdaniya .edu.iq
8. Course Objectives

Course Objectives	**Understanding the fundamentals of ring theory subrings, and ideals along with their conditions as well as comprehending fields and their interrelations.** **Developing students' skills in connecting ring theory with the fundamentals of algebra.....** The skill-based objectives of the *Ring Theory* course in the third stage may include: The skill of connecting ring theory with abstract algebra. The ability of students to understand that rings are essentially algebraic structures defined with addition and multiplication operations, similar to those of

9. Teaching and Learning Strategies

Strategy	• Lecture • Discussion • Dialogue • Applied Analysis • Brainstorming

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Theoretical Knowledg Applied Analysis	Definition of Binary Operations	• Lecture Discussion • Dialogue	Direct Questio
2		Theoretical Knowledg	Definitions of R and Examples	Lecture Discussion Dialogue	Direct Questio
3		Applied Analysis	Some Theorems Ring Properties	Lecture Discussion Dialogue	
4		Theoretical Knowledg	Definitions of Spe Rings	Lecture Discussion Dialogue	
5		Applied Analysis	Definitions Subrings and S Examples	Lecture Discussion	

				Dialogue	
6		**Theoretical Knowledg**	Characteristic of Ring and S Examples	**Lecture** **Discussion** **Dialogue**	
7		**Applied Analysis**	Ideals	**Lecture** **Discussion** **Dialogue**	
8		**Theoretical Knowledg**	Properties of Id and Examples	**Lecture** **Discussion** **Dialogue**	
9		**Applied Analysis**	Theorems on Ideal	**Lecture** **Discussion** **Dialogue**	
10		**Theoretical Knowledg**	**Ring Homomorphisms**	**Lecture** **Discussion** **Dialogue**	
11		**Applied Analysis**	Kernel of a Ring Some Examples	**Lecture** **Discussion** **Dialogue**	
12		**Theoretical Knowledg**	**Fundamental Theorems on Ring Homomorphisms**	**Lecture** **Discussion** **Dialogue**	

13		Applied Analysis	Solving Problems Ring Homomorphisms	Lecture Discussion Dialogue	
14		Theoretical Knowledg	Solving Chapter Exercises	Lecture Discussion Dialogue	
15		Applied Analysis	Definition of a Fie	Lecture Discussion Dialogue	
16		Theoretical Knowledg	Examples of Field	Lecture Discussion Dialogue	
17		Applied Analysis	Connecting Fi with Rings	Lecture Discussion Dialogue	
18		Theoretical Knowledg	Connecting Fie Ideals, and Inte Rings	Lecture Discussion Dialogue	
19		Applied Analysis	Theorems on Relationship Between Fields Rings	Lecture Discussion Dialogue	

20		**Theoretical Knowledg**	**Examples of the Above**	**Lecture** **Discussion** **Dialogue**	
21		**Applied Analysis**	**Types of Ideals**	**Lecture** **Discussion** **Dialogue**	
22		**Theoretical Knowledg**	**Relationship Between Ty of Ideals**	**Lecture** **Discussion** **Dialogue**	
23		**Applied Analysis**	**relationship Betw Regular Ideals Regular Rings**	**Lecture** **Discussion** **Dialogue**	
24		**Theoretical Knowledg**	**Radical of an Ide**	**Lecture** **Discussion** **Dialogue**	
25		**Applied Analysis**	Theorems on the Radical of Rings and Ideals	**Lecture** **Discussion** **Dialogue**	
26		**Theoretical Knowledg**	Connecting Radical of an I with Their	**Lecture** **Discussion** **Dialogue**	
27		**Applied Analysis**	**Examples of Finc the Radical of**	**Lecture**	

			Ideal	**Discussion** **Dialogue**	
28		**Theoretical Knowledg**	**Definition of Decomposable and Essential**	**Lecture** **Discussion** **Dialogue**	
28		**Applied Analysis**	Connecting Decomposable Id with Regular Ideals	**Lecture** **Discussion** **Dialogue**	
29		**Theoretical Knowledg**	**Definition Decomposable Essential**	**Lecture** **Discussion** **Dialogue**	
30		**Applied Analysis**	General Review wi Monthly Exam	**Lecture** **Discussion** **Dialogue**	

11. Course Evaluation

Monthly Quizzes :15 marks
Midterm Exam :25 marks
Final Exam :60 marks

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book: Ring Theory / Burton
Main references (sources)	Introduction to Ring Theory
Recommended books and references (scientific journals, reports…)	Introduction to Ring Theory / Safwan
Electronic References, Websites	**YouTube**

Suggestions for adding other types of algebraic ideals and providing some examples, such as r-ideals and n-ideals.


جامعة الحمدانية
قسم
الرياضيات
كلية التربية للعلوم

Course Description Template

for the Academic Year 2025–2026

1. Course Name
Mathematical Analysis
2. Course Code
HAEPSMA25F300
3. Semester/ Year
First and Second Semesters, Academic Year 2025–2026
4. Description Preparation Date
01-09-2025
5. Available Attendance Forms
In-person learning
6. Number of Credit Hours (Total) / Number of Units (Total)
120 Hours
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer Dr. Wafaa Younis Yahya **Email:** rwafa1993@uohamdaniya.edu.iq
8. Course Objectives

Course Objectives	• **Understanding Fundamental Mathematical Concepts:** Identifying the core concepts of mathematical analysis such as limits, differentiation and integration, sequences, infinite series, and others. • **Developing Analytical Skills:** Enhancing students' ability to critically analyze mathematical problems and use appropriate methods to solve them. • **Applications of Mathematics in Other Fields:** Demonstrating how mathematical analysis can be applied in fields such as physics, engineering, and economics. • **Advancing Computational Skills:** Developing advanced mathematical computation skills and understanding their use in solving complex mathematical problems.

	• **Creative Thinking:** Encouraging students to think creatively and use mathematical imagination in developing new solutions to mathematical problems. • **Preparation for Higher Levels:** Equipping students to comprehend advanced mathematical subjects in higher academic levels, such as real analysis and differential algebra. • **Enhancing Communication Skills:** Improving mathematical communication skills, including the ability to explain mathematical ideas and present solutions logically and clearly. • **Building Self-Confidence:** Strengthening students' confidence in their ability to solve complex mathematical problems and effectively apply analytical concepts. These objectives aim to foster positive interaction between students and the subject, and to facilitate effective learning of mathematical analysis.

9. Teaching and Learning Strategies

Strategy	• **Discovery Learning:** Encouraging students to derive concepts through practical examples or open-ended problems, using activities that require critical thinking and inference. • **Cooperative Learning:** Dividing students into small groups to work on complex problems in topology, promoting discussion among students to exchange ideas and solutions. • **Problem-Solving Strategy:** Presenting mathematical problems related to topology and encouraging students to find innovative solutions, with a focus on applying theoretical concepts to practical situations. • **Mind Maps:** Using mind maps to illustrate the relationships between different concepts in topology, helping students organize ideas and connect them to one another.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Theoretical knowledge and applied analysis	The field of real numbers and its properties	Lecture, discussion, and dialogue	Direct questions
2	4	Theoretical knowledge and applied analysis	The field of real numbers and its properties	Lecture, practical application	Direct questions
3	4	Theoretical knowledge and applied analysis	Absolute value and its properties	Lecture, discussion, and dialogue	Direct questions
4	4	Theoretical knowledge and applied analysis	Density of rational and irrational numbers	Lecture, discussion, and dialogue	Direct questions

5	4	Theoretical knowledge and applied analysis	Density of rational and irrational numbers	Lecture, discussion, and dialogue	Direct questions
6	4	Theoretical knowledge and applied analysis	Sequences – definition and examples	Lecture, discussion, and dialogue	Direct questions
7	4	Theoretical knowledge and applied analysis	Theorems on sequences	Lecture, discussion, and dialogue	Direct questions
8	4	Theoretical knowledge and applied analysis	Convergent sequences	Lecture, discussion, and dialogue	Direct questions
9	4	-	Solving exercises with an exam	-	-
10	4	Theoretical knowledge and applied analysis	Bounded and fundamental sequences	Discussion, brainstorming	Direct questions
11	4	Theoretical knowledge and applied analysis	Metric space – definition and examples	Lecture, discussion, brainstorming	Direct questions
12	4	Theoretical knowledge and applied analysis	Sequences in metric space	Lecture, brainstorming	Direct questions
13	4	Theoretical knowledge and applied analysis	Fundamental theorems	Lecture, discussion	Direct questions
14	4	Theoretical knowledge and applied analysis	Continuity in metric space	Lecture, discussion	Direct questions
15	4	Theoretical knowledge and applied analysis	Theorems on continuity in metric space	Lecture, discussion	Direct questions
16	4	Theoretical knowledge and applied analysis	Continuous and discontinuous applications	Lecture, discussion	Direct questions
17	4	Theoretical knowledge and applied analysis	Continuous functions on compact spaces	Lecture, discussion	Direct questions
18	4	Theoretical knowledge and applied analysis	Uniform continuity	Lecture, discussion	Direct questions

19	4	Theoretical knowledge and applied analysis	The Mean Value Theorem	Lecture, discussion, and dialogue	Direct questions
20	4	-	Solving exercises with an exam	-	-
21	4	Theoretical knowledge and applied analysis	Integrals – Riemann integral: definition and origin	Lecture, discussion	Direct questions
22	4	Theoretical knowledge and applied analysis	Integrals – Riemann integral: properties and theorems	Lecture, discussion	Direct questions
23	4	Theoretical knowledge and applied analysis	Bounded functions integrable in the Riemann sense	Lecture, brainstorming	Direct questions
24	4	Theoretical knowledge and applied analysis	The linear space of Riemann functions	Lecture, brainstorming	Direct questions
25	4	Theoretical knowledge and applied analysis	Linear applications – examples and properties	Lecture, brainstorming	Direct questions
26	4	Theoretical knowledge and applied analysis	Linear applications – examples and properties	Lecture, brainstorming	Direct questions
27	4	Theoretical knowledge and applied analysis	Lebesgue integral – definition and origin	Lecture, brainstorming	Direct questions
28	4	Theoretical knowledge and applied analysis	Lebesgue integral – definition and origin	Lecture, brainstorming	Direct questions
29	4	Theoretical knowledge and applied analysis	Lebesgue integral – properties	Lecture, brainstorming	Direct questions
30	4	Theoretical knowledge and applied analysis	Additional theorems on Lebesgue integral	Lecture, discussion	Direct questions

11. Course Evaluation

Grade distribution (out of 100), according to the tasks assigned to the student — such as daily preparation, daily and oral quizzes, monthly written exams, reports, etc.

1. Daily Preparation, Quizzes, and Reports: 5 marks.
2. Monthly examinations: 10 marks.
3. Mid-year examination: 25 marks.
4. Final (end-of-year) examination: 60 marks.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Adel Ghassan Naoum, *Introduction to Mathematical Analysis*, University of Baghdad, Iraq, 1986
Main references (sources)	Noori Farhan Al-Mayahi, *Introduction to Mathematical Analysis*, University of Al-Qadisiyah, Iraq, 2014
Recommended books and references (scientific journals, reports…)	• Ali Aziz Ali, Abdul-Razzaq Ali Al-Haswan, and Adel Zanbal Hussein, *Principles of Mathematics: Differential and Integral Calculus*, Ministry of Higher Education and Scientific Research, Iraq, 1986. • Apostol, T.M., *Mathematical Analysis*, 1974. • Ash, R.B., *Real Analysis and Probability*, 1972.
Electronic References, Websites	YouTube

13. Development Plan for the Course Curriculum

Developing the Mathematical Analysis Course requires considering several key elements to ensure improved teaching quality and enhanced student understanding. The following points can contribute to the development of the course:

1. **Needs Analysis:** First, the needs of students, instructors, and the learning environment must be analyzed to identify areas that require improvement and topics that should be emphasized.
2. **Defining Learning Objectives:** The main educational objectives that students should achieve by the end of the course must be defined. These objectives may include understanding fundamental mathematical concepts and applying them to real-life problems.
3. **Curriculum Design:** A comprehensive curriculum should be designed that covers the various topics to be addressed during the course in a logical and gradually sequenced manner to enhance student comprehension.
4. **Selection of Learning Resources:** Textbooks, supplementary materials, and practical applications that help students better understand the concepts should be carefully chosen.
5. **Utilization of Diverse Teaching Methods:** Various instructional methods such as presentations, group discussions, practical exercises, and interactive activities can be used to make the learning process enjoyable and effective.
6. **Assessment and Follow-up:** Appropriate assessment methods must be provided to measure students' progress and understanding, along with constructive feedback and guidance for improvement.
7. **Integration of Technology:** Technology can be employed to enhance the learning process, such as interactive software, smart applications, and online platforms that provide additional resources and motivate students.
8. **Teacher Training:** Continuous professional development should be offered to instructors to improve their teaching skills and apply best practices in teaching mathematical analysis.
9. **Student Support:** Additional support programs should be made available for students who need extra help in understanding the material, whether through extra study sessions or online resources.

10. Evaluation and Continuous Improvement: The effectiveness of the course should be regularly evaluated, and results analyzed to identify areas needing improvement and to take the necessary actions for development.

These steps form a general framework for developing the Mathematical Analysis course, which can be modified and adapted according to the needs of the educational institution and the requirements of students and instructors.

Course Description Form

1. Course Name:

Probability and statistics

2. Course Code:

3. Semester / Year:

2025-2026

4. Description Preparation Date:

1/9/2025

5. Available Attendance Forms:

In-person learning

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

120 hours / 6 units

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

Name: Ahmed Shihab Ahmed
Email: ahmed-shihab@uohamdaniya.edu.iq

8. Course Objectives

Course Objectives	• To introduce students to the concepts of statistics and probability and their applications. • To develop students' skills in conducting statistical operations and broadening their understanding of its application to large populations. • To enable students to master the principles of counting. • To develop students' skills in applying probability theory and its laws.

9. Teaching and Learning Strategies

Strategy	The instructor has full control over the teaching and learning environment, including planning, implementation, and follow-up. The learner is a passive recipient, and the focus is on the cognitive aspects of the science, such as facts, concepts, and theories. Examples include lectures, using theoretical and practical textbooks, and solving problems

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	4	Theoretical Knowledge and Applied Analysis	Nature of Statistics - Population - Sample	Lecture, discussion, and dialogue	Direct questions
Second	4	Theoretical Knowledge and Applied Analysis	Data tabulation and creating a distribution table	Lecture, practical application	Direct questions
Third	4	Theoretical Knowledge and Applied Analysis	Graphical analysis and measures of central tendency, correlation	Lecture, discussion, and dialogue	Direct questions
Fourth	4	Theoretical Knowledge and Applied Analysis	Measures of dispersion	Lecture, discussion, and dialogue	Direct questions

Fifth	4	Theoretical Knowledge and Applied Analysis	Variance and standard deviation, coefficient of variation, and standard score	Lecture, discussion, and dialogue	Direct questions
Sixth	4	Theoretical Knowledge and Applied Analysis	Correlation	Lecture, discussion, and dialogue	Direct questions
Seventh	4	Theoretical Knowledge and Applied Analysis	Regression - Monthly exam	Lecture, discussion, and dialogue	Direct questions
Nineth	4	Theoretical Knowledge and Applied Analysis	Probability - Counting methods	Lecture, discussion, and dialogue	Direct questions
Tenth	4	Theoretical Knowledge and Applied Analysis	Permutations and combinations	Lecture, practical application	Direct questions
Eleventh	4	Theoretical Knowledge and Applied Analysis	Samples, random experiment, event and its types	Discussion, brainstorming	Direct questions
Thirteenth	4	Theoretical Knowledge and Applied Analysis	Definition of probability and its axioms	Lecture, discussion, brainstorming	Direct questions
Fifteenth	4	Theoretical Knowledge and Applied Analysis	Finite and infinite probability space and conditional probability	Lecture, brainstorming	Direct questions
Seventeen	4	Theoretical Knowledge and Applied Analysis	Multiplication theorem in conditional probability	Lecture and discussion	Direct questions
Eighteenth	4	Theoretical Knowledge and Applied Analysis	Random processes	Lecture and discussion	Direct questions
Nineteenth	4		Monthly exam		
Twentieth	4	Theoretical Knowledge and Applied Analysis	Bayes' Theorem	Lecture and discussion	Direct questions
Twenty-fir	4	Theoretical Knowledge and Applied Analysis	Independence and repeated processes	Lecture and discussion	Direct questions
Twenty-second	4	Theoretical Knowledge and Applied Analysis	Independent or repeated trials	Lecture and discussion	Direct questions
Twenty-th	4	Theoretical Knowledge and Applied Analysis	Random variables and their types	Lecture and discussion	Direct questions
Twenty-fo	4	Theoretical Knowledge and Applied Analysis	Discrete probability distributions	Lecture and discussion	Direct questions
Twenty-f	4	Theoretical Knowledge Applied Analysis	Continuous probability distributions and distribution function	Lecture, discussion, and dialogue	Direct questions
Twenty-sixth	4		Monthly exam		
Twenty-seventh	4	Theoretical Knowledge Applied Analysis	Mathematical expectation for discrete variables	Lecture, discussion, and dialogue	
Twenty-eighth	4	Theoretical Knowledge Applied Analysis	Mathematical expectation for continuous variables	Lecture, practical application	
Twenty-ninth	4	Theoretical Knowledge Applied Analysis	Variance and standard deviation	Lecture, discussion, and dialogue	
Thirtieth	4	Theoretical Knowledge Applied Analysis	Joint probability distribution, conditional expectation	Lecture, discussion, and dialogue	

11. Course Evaluation

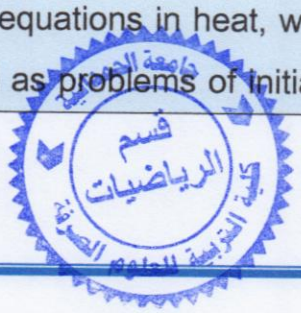
Mid-term exam: 25 marks.
Instructor assessment: 15 marks (5 marks for student attendance + 10 marks for monthly and daily exams).
Final exam: 60 marks.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Probability Theory, Schaum's series
Main references (sources)	Probability Theory
Recommended books and references (scientific journals, reports...)	Schaum's series.
Electronic References, Websites	YouTube.
13. Suggested Course Materials	
Introductory paragraph for the curriculum	Provide a smooth introduction to the subject of statistics and its relationship to probability.
Data collection methods:	To teach the student how to collect and categorize data.
The difference between samples and how to use them:	To teach the student how to select the correct method for sampling
Outliers and their impact on measures of central tendency	To help students understand the effects of outliers and how to minimize their impact.
Studying distribution curves	To understand the properties of distributions through the shape of the function curve.
Central limit theorem	To help students understand the effect of sample size on the distribution pattern.

Course Description Form

1. Course Name
Partial Differential Equations
2. Code/No.
HAEPSMA25F302
3. Semester/year
Third Year 2025-2026
4. date of preparation Date
1/09/2025
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: Lect.Raed Sabeeh Karyakos Email:raed_sabeeh@uohamdaniya.edu.iq

8. Course objectives	
Course objectives	1.This course aims to study partial differential equations, their origin, classification, and methods of solving the 2.Enabling the student to solve partial differential equations of order (n). 3.Studying some physical applications of second-order partial differential equations 4.Using partial differential equations in heat, wave, and Laplace equations, as well as problems of initial and



9.Teaching and learning strategies	boundary values.
Strategy	1.Lecture, discussion, dialogue, and daily assignments . 2.Daily surprise tests and ongoing weekly quizzes 3.Classroom exercises and activities . 4.Guiding students to resources containing examples and exercises for their benefit.

10 . Course Structure

week	Hours	Required learning outcomes	Unit or subject name	Learning method	Evaluation Method
1	3	Theoretical Knowledge and applied Analysis	classification of partial Differential Equations	Lecture and Discussion	Assignments and daily exams
2	3	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams
3	3	Theoretical Knowledge and applied Analysis	Elimination of Arbitrary Constants	Lecture and Discussion	Assignments and daily exams
4	3	Theoretical Knowledge	Solving Exercises	Lecture and Discussion	Assignments and daily

		and applied Analysis			exams
5	3	Theoretical Knowledge and applied Analysis	Elimination of Arbitrary Functions	Lecture and Discussion	Assignments and daily exams
6	3	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams
7	3	Theoretical Knowledge and applied Analysis	Solving First – Order Linear partial Differential Equations	Lecture and Discussion	Assignments and daily exams
8	3	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams
9	3	Theoretical Knowledge and applied Analysis	Solving First – Order Non–Linear Partial Differential Equations	Lecture and Discussion	Assignments and daily exams
10	3	Theoretical Knowledge and applied Analysis	Charpit's Method for Solving Non – Linear Equations	Lecture and Discussion	Assignments and daily exams
11		Theoretical	Solving	Lecture and	Assignments

	3	Knowledge and applied Analysis	Exercises	Discussion	and daily exams
12	3	Theoretical Knowledge and applied Analysis	Solving Equations with Constant Coefficients	Lecture and Discussion	Assignments and daily exams
13	3	Calculation and classifying Extreme values	Solving Exercises	Lecture and Discussion	Assignments and daily exams
14	3	Theoretical Knowledge and applied Analysis	Solving Non-Factorizable + Exercises	Lecture and Discussion	Assignments and daily exams
15	3	Theoretical Knowledge and applied Analysis	Finding the particular solution of Equations withConstant Coefficients	Lecture and Discussion	Assignments and daily exams
16	3	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams
17	3	Theoretical knowledge and applied analysis	Differential Equations Similar to Euler's Equation	Lecture and Discussion	Assignments and daily exams
18	3	Theoretical Knowledge	Solving Exercises	Lecture and Discussion	Assignments and daily

		and applied Analysis			exams
19	3	Theoretical Knowledge and applied Analysis	Partial Differential Equations with Variable Coefficients + Exercises	Lecture and Discussion	Assignments and daily exams
20	3	Theoretical Knowledge and applied Analysis	Second –Order partial Differential Equations	Lecture and Discussion	Assignments and exams
21	3	Theoretical Knowledge and applied Analysis	Monthly Exam		
22	3	Theoretical Knowledge and applied Analysis	Fourier Series	Lecture and Discussion	Assignments and daily exams
23	3	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams
24	3	Theoretical Knowledge and applied Analysis	Boundary Value Problems	Lecture and Discussion	Assignments and daily exams
25	3	Theoretical Knowledge and applied	Solving Exercises	Lecture and Discussion	Assignments and daily exams

		Analysis			
26	3	Theoretical Knowledge and applied Analysis	Wave Equation	Lecture and Discussion	Assignments and daily exams
27	3	Theoretical Knowledge and applied Analysis	Monthly Exam		
28	3	Theoretical Knowledge and applied Analysis	Heat Equation	Lecture and Discussion	Assignments and daily exams
29	3	Theoretical Knowledge and applied Analysis	Laplace Transforms and Their Applactions	Lecture and Discussion	Assignments and daily exams
30	3	Theoretical Knowledge and applied Analysis	Solving Exercises	Lecture and Discussion	Assignments and daily exams

11. Course Evaluation

Monthly Quizzes :15 marks
Midterm Exam :25 marks
Final Exam: 60 marks

12. Learning and Teaching Resources

Required textbooks (if any)	1.Jhon.F. / Partial differential Equations 2. Partial Differential Equations / Dr. Atta Allah Thamer Al-Ani
Main References	
Supporting Books and References Recommended (Scientific Journals , Reports,....)	The most important books and resources on partial differential equations available in the Central Library
Electronic Refernces,Internet Sites	-Reliable websites - Virtual library
13.Cours Development Plan	
1.Linking partial Differential Equations with Engineering (Electric potential,Heat Flow,Vibrations)	
2.Spectral Analysis and a Broader study of Fourier Series	

Course Description Form

1. Course Name :
Curricula and teaching methods
2. Course Code :
HAEPSMA25M305
3. Semester/year
Annually
4. Description Preparation Data :
1/9/2025
5. Available Attendance Forms :
Classroom Attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 / 240
7. Course administrator's name (mention all, if more than one name) :
Name: Assistant teacher **Hajir Hayder Abdullah** **Email :** **hajarhayder@uohamdaniya.edu.iq**

8. Course Objectives	
Course Objectives	• **Demonstrate the student's ability to distinguish between teaching theory and learning theory and between teaching methods and teaching methods, strategies and models.** • **Adjust the concept of teaching skills and the components of teaching skills that are planning skill, implementation skill and evaluation skill.** • **The ability to find the difference between effective teaching and creative teaching and to understand the principles of**

	creative teaching. • Distinguish between an effective teacher and an ineffective teacher, identify the diversification of teaching strategies, identify the psychological and educational foundations for diversifying teaching, and mention the things that should be avoided while applying teaching diversification strategies. • Give the student practical examples of the lecture method, the method of discussion and the method of interrogation . • Adjusting teaching methods that are based on research and adjusting the methods of cooperative and individual learning. • Making the student able to distinguish between teaching methods of mastery and creativity . • To solve some of the questions addressed to him regarding how to apply modern teaching methods • The student is excited about the practical application associated with some concepts in the course • The student should be keen to attend a lecture on general curricula and teaching methods • Acquiring individual skills and the ability to perform tasks and

	build the student's personality • Developing the student's ability to deal with technical means • Developing the student's ability to employ means of communication for scientific and research purposes • Developing the student's ability to dialogue and group discussion • Developing the student's ability to explain some concepts related to modern teaching methods • The skill of analyzing the content of the scientific material

9. Teaching and Learning Strategies

Strategy	1- Learning through cooperation between students . 2- Lectures accredited by reliable sources. 3- Participation of students in the lecture by asking some questions that have priorities already raised. 4- Provide part of the lecture time for the questions. 5- Giving some privileges to outstanding students when answering questions. 6. The goal should be clear and specific . 7-The goal should be simplified and uncomplicated. 8-The objective should include the standard or the level of expected performance. 9- Managing the lecture in a way that indicates the importance of time . 10- Assigning students some group duties. 11- Assigning students to collect sources and references and write a report on the title of the lecture .

10.Course Structure

Week	Hours	Required learning outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Defining theory,	Introduction to Teaching	According to the	1- Weekly tests.

		teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	Methods, The Concept of Teaching Theory.	above education strategies	Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9- Applied tests.
2	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	Teaching Theory Interests.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
3	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	The importance of teaching theory.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports .

					9. Applied tests
4	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	The relationship between teaching theory and learning theory.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
5	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	Examples of teaching theory.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
6	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the	Teaching methods, the importance of the teacher's knowledge of teaching methods.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises.

		appropriate teaching method.			7. Verbal tests 8. Discussion of reports . 9. Applied tests
7	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	Criteria for determining the appropriate teaching method.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
8	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	Teaching methods, forms of teaching methods.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
9	2	Defining theory, teaching theory and teaching methods and identifying the criteria for	Teaching strategies, teaching models.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests.

		determining the appropriate teaching method.			6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
10	2	Defining theory, teaching theory and teaching methods and identifying the criteria for determining the appropriate teaching method.	Teaching Design + Half Course Exam	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
11	2	Adjust the concept of teaching skills and the components of teaching skills that are planning skill, implementation skill and evaluation skill.	teaching skills	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
12	2	Adjusting the concept of teaching skills and the components of teaching skills that	Components of Teaching Skills Planning Skill, Implementation Skill, Evaluation	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests.

		are planning skill, implementation skill and evaluation skill	Skill		5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
13	2	Adjusting the concept of teaching skills and the components of teaching skills that are planning skill, implementation skill and evaluation skill	Effective teaching, effective teacher.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
14	2	The ability to find the difference between effective teaching and creative teaching and to understand the principles of creative teaching	Creative teaching	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
15	2	- The ability to find the difference between effective	Principles of creative teaching (the principle of suggestion ,	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture.

		teaching and creative teaching and to understand the principles of creative teaching	the principle of confrontation , the principle of treatment , the principle of rooting)		4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
16	2	Enabling the student to define the diversification of teaching and its strategies and mentioning the psychological foundations for diversifying teaching and the justifications for diversifying teaching while mentioning effective strategies in diversifying teaching	Diversification of teaching , psychological and educational foundations to diversify teaching	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
17	2	Enabling the student to define the diversification of teaching and its strategies	Justifications for diversifying teaching , effective strategies for diversifying	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests.

		and mentioning the psychological foundations for diversifying teaching and the justifications for diversifying teaching while mentioning effective strategies in diversifying teaching .	teaching .		5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
18	2	Enabling the student to define the diversification of teaching and its strategies and mentioning the psychological foundations for diversifying teaching and the justifications for diversifying teaching while mentioning effective strategies in	Important skills for applying teaching diversification strategies.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests

		diversifying teaching .			
19	2	Enabling the student to define the diversification of teaching and its strategies and mentioning the psychological foundations for diversifying teaching and the justifications for diversifying teaching while mentioning effective strategies in diversifying teaching .	Things to avoid while applying teaching diversification strategies.	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
20	2	Giving the student practical examples of the lecture method, and the method of interrogation	Commonly used teaching methods (lecture method, interrogation method)	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests

21	2	Giving the student practical examples of the method of discussion and the method of induction and measuremen t	Commonly used teaching methods (discussion method, induction and measurement method)	Accordin g to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
22	2	Giving the student practical examples of the method of investigation and the method of solving problems	Teaching methods based on researching and organizing knowledge (investigation method, problem-solving method)	Accordin g to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
23	2	Give the student practical examples of the modular method and the project method	Teaching methods based on researching and organizing knowledge (modular method, project method)	Accordin g to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of

					reports . 9. Applied tests
24	2	Giving the student practical examples of the method of appointments	Teaching methods based on researching and organizing knowledge (recruitment method)	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
25	2	Adjusting teaching methods that are based on research and adjusting cooperative and individual learning methods	Collaborative Learning Method + Half Course Exam	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests

26	2	Adjusting teaching methods that are based on research and adjusting cooperative and individual learning methods	طريقة التعلم	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
27	2	Making the student able to distinguish between teaching methods of mastery and creativity	Teaching methods for mastery and creativity (learning method for mastery)	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
28	2	Making the student able to distinguish between teaching methods of mastery and creativity	Teaching Methods for Empowerment and Creativity (Role play)	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of

					reports . 9. Applied tests
29	2	Making the student able to distinguish between teaching methods of mastery and creativity	Teaching Methods for Empowerment and Creativity Brainstorming	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
30	2	Making the student able to distinguish between teaching methods of mastery and creativity	Teaching methods for empowerment and creativity(interdependence and integration in teaching methods)	According to the above education strategies	1- Weekly tests. Monthly tests. 3-Participation of students during the lecture. 4- Work sample tests. 5-Performance simulation tests. 6- Editorial tests /exercises. 7. Verbal tests 8. Discussion of reports . 9. Applied tests
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)	Textbook of Teaching Methods of Mathematics for the Fourth Stage/Teacher Training Institutes
Main references (sources)	Teaching methods used by faculty members in the corresponding departments of some faculties of the University of Mosul 1997 .
Recommended books and references (scientific journals, reports...)	The theoretical foundations of some of the educational methods used in teaching history 1997 .
Electronic References, Websites	-

13- Development Plan for the Course
1-Introducing the latest theories of teaching and learning such as (blended education) . 2-Introducing realistic applications that link the subject to the field of practical teaching. 3- Make students design model lesson plans and present them in practice . 4-Linking teaching to the national and cultural dimensions of society . 5- Updating the references (recent books, research , scientific articles) . 6-Introducing electronic resources (digital libraries, educational videos).

Course Description Form

1. Course Name:
Numerical Analysis
2. Course Code:
HAEPSMA26M304
3. Semester / Year:
Year
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
1/9/2025
6. Number of Credit Hours (Total) / Number of Units (Total)
6 (Units)
7. Course administrator's name (mention all, if more than one name)
Name: Sarah Ghanim Mahmood Alkabachee Email: sarahghanim@uohamdaniya.edu.iq

8. Course Objectives	
Course Objectives	Introducing students to the study of numerical mathematical methods for finding approximate solutions to some mathematical problems that arise when applying mathematics in its various directions in pure and applied sciences, and their comparability, accuracy, and stability. Numerical analysis is a branch of faculty active in the field of approximation work. It includes methods for using approximate but accurate numerical solutions, which is useful in cases where a magic solution is not available or is too expensive to calculate.

9. Teaching and Learning Strategies	
Strategy	• **Lectures – Discussion sessions – Solving exercises.** • **Guiding students to use books and scientific journals independently.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject na	Learning method	Evaluation method

1	4	Theoretical knowledge an applied analysis	Introduction to Numeri Analysis	Discussion and dialogue	Direct questions
2	4	Theoretical knowledge an applied analysis	Types of Errors	Discussion and dialogue	Direct questions
3	4	Theoretical knowledge an applied analysis	Introduction to Solving Nonlinear Equations	Discussion and dialogue	Direct questions
4	4	Theoretical knowledge an applied analysis	Graphical Method	Discussion and dialogue	Direct questions
5	4	Theoretical knowledge an applied analysis	Analytical Method	Discussion and dialogue	Direct questions
6	4	Theoretical knowledge an applied analysis	Introduction to Numeri Methods for Solving Nonlinear Equations	Discussion and dialogue	Direct questions
7	4	Theoretical knowledge an applied analysis	Bisection Method	Discussion and dialogue	Direct questions
8	4	Theoretical knowledge an applied analysis	Pseudolocus Method	Discussion and dialogue	Direct questions
9	4	Theoretical knowledge an applied analysis	Cestant Method	Discussion and dialogue	Direct questions
10	4	Theoretical knowledge an applied analysis	Stable Point Method	Discussion and dialogue	Direct questions
11	4	Theoretical knowledge an applied analysis	Newton-Raphson Meth	Discussion and dialogue	Direct questions
12	4	Theoretical knowledge an applied analysis	Solving Systems of Nonlinear Equations	Discussion and dialogue	Direct questions
13	4	Theoretical knowledge an applied analysis	Numerical Solution of Systems of Linear Equations	Discussion and dialogue	Direct questions
14	4	Theoretical knowledge an applied analysis	Monthly Exam	Discussion and dialogue	Direct questions
15	4	Theoretical knowledge an applied analysis	Iterative Methods	Discussion and dialogue	Direct questions
16	4	Theoretical knowledge an applied analysis	Direct Methods	Discussion and dialogue	Direct questions
17	4	Theoretical knowledge an applied analysis	Introduction to Inclusic	Discussion and dialogue	Direct questions
18	4	Theoretical knowledge an applied analysis	Applied Examples	Discussion and dialogue	Direct questions
19	4	Theoretical knowledge an applied analysis	Finite Differences	Discussion and dialogue	Direct questions
20	4	Theoretical knowledge an applied analysis	Forward Differences	Discussion and dialogue	Direct questions
21	4	Theoretical knowledge an applied analysis	Examples	Discussion and dialogue	Direct questions
22	4	Theoretical knowledge an applied analysis	Central Differences	Discussion and dialogue	Direct questions
23	4	Theoretical knowledge an applied analysis	Examples	Discussion and dialogue	Direct questions
24	4	Theoretical knowledge an applied analysis	Regressive Differences	Discussion and dialogue	Direct questions
25	4	Theoretical knowledge an applied analysis	Examples	Discussion and dialogue	Direct questions
26	4	Theoretical knowledge an applied analysis	Finite Differences	Discussion and dialogue	Direct questions
27	4	Theoretical knowledge an applied analysis	Relative Differences	Discussion and dialogue	Direct questions
28	4	Theoretical knowledge an applied analysis	Introduction to Numeri Integration	Discussion and dialogue	Direct questions
29	4	Theoretical knowledge an applied analysis	Trapezoidal Method	Discussion and dialogue	Direct questions

30	4	Theoretical knowledge applied analysis	Simpson's Method	Discussion and dialogue	Direct questions

11.Course Evaluation

- **20 marks** – Monthly exams
- **10 marks** – Attendance and daily quizzes
- **20 marks** – Midterm exam
- **50 marks** – Final exam

- **100 marks** – Total score

12.Learning and Teaching Resources

Required textbooks (curricular books any)	1- التحليل العددي المعادلة اللاخطية، الأنظمة الخطية، الاندراج، التفاضل والتكامل العددي. 2- التحليل العددي وطرق حسابه العددية.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	3- *Numerical Analysis* Using MATLAB® and Excel®, **Steven T. Karris**, Third Edition. 4- Numerical Methods Using MATLAB® Fourth Edition
Electronic References, Websites	

Course Description Form

1- Course name:
Counseling and mental health
2-Course code:
3-Chapter/Year:
2025-2026
4- Date of preparation of this description:
09/21/2026
5- Available attendance for
In-person education
6- Number of study hours (total) / Number of units (total)
60 hour / 4 units
7- Course Supervisor Name (if more than one name is mentioned)
name: T.A Mohammed Qazi Jassim Email: mohammedalhadidi@uohamdaniya.edu.iq
8- Course objectives

1-With the concepts of guidance and mental health from (the goals of guidance and mental health, its terminology and the most important theories). 2-The field of the teacher-guide and educational counselor and his role in helping the student achieve psychological, educational and social harmony. 3-Means of collecting information, their importance, advantages and disadvantages of each. 4-Parent-teacher councils and their role in educational guidance.	Course objectives
9- Teaching and learning strategies	
The lecture. Discussion. Brainstorming.	**Strategy**

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	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, social	Theoretical knowledge and practical educational	2	Fifth

			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	The 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,	Theoretical knowledge and practical educational application	2	twelfth

		autobiography))			
Feedback via direct questions	Lecture, discussion and dialogue	Methods of collecting information (tests and measures, observation, interview))	Theoretical knowledge and practical educational application	2	thirteenth
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 via direct questions	Lecture, discussion and dialogue	Personal crises	Theoretical knowledge and practical educational application	2	Nineteenth 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 20
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	Defensive 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,	Theoretical knowledge and practical educational application	2	Week twenty-four

		justification and its phenomenon))			
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

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.	
12- Learning and teaching resources	
Principles of Guidance and Psychological Counseling, Sami Muhammad Malham, 2010, Amman, Dar Al Masirah Publishing and Distribution. - 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 Principles of psychological counseling for psychological counselors, Muhammad Ahmad Mashaqa (2008) Amman - Dar Al Manahj for Publishing and Distribution. - Guidance and Psychological Counseling, Hamed Zahran (2005) Cairo The world of books	Primary References (Sources)
- Personality Psychology, Dawood Aziz Hanna, and Nazim Hashim Al-Obaidi, 1990, University of Baghdad	Recommended mainstream books and references (scientific journals, reports)
- Al Noor Library (electronic library) is free on the search engine.Google contains a variety of specialized sources.	Electronic references, websites


جامعة الحمدانية
قسم
الرياضيات

Course Description Form

1. Course Name: Rings algebra
2. Course Code: ----------
3. Semester / Year: year
4. Description Preparation Date: 2026
5. Available Attendance Forms: attend
6. Number of Credit Hours (Total) / Number of Units (Total) : 90
7. Course administrator's name (mention all, if more than one name)
Name: Sahbaa Abd alsttar Email: Sahbaa1977@uohamdaniya .edu.iq
8. Course Objectives

Course Objectives	**Understanding the fundamentals of ring theory subrings, and ideals along with their conditions as well as comprehending fields and their interrelations.** **Developing students' skills in connecting ring theory with the fundamentals of algebra.....** The skill-based objectives of the *Ring Theory* course in the third stage may include: The skill of connecting ring theory with abstract algebra. The ability of students to understand that rings are essentially algebraic structures defined with addition and multiplication operations, similar to those of

9. Teaching and Learning Strategies

Strategy	• Lecture • Discussion • Dialogue • Applied Analysis • Brainstorming

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Theoretical Knowledg Applied Analysis	Definition of Binary Operations	• Lecture Discussion • Dialogue	Direct Questior
2		Theoretical Knowledg	Definitions of R and Examples	Lecture Discussion Dialogue	Direct Questior
3		Applied Analysis	Some Theorems Ring Properties	Lecture Discussion Dialogue	
4		Theoretical Knowledg	Definitions of Spe Rings	Lecture Discussion Dialogue	
5		Applied Analysis	Definitions Subrings and S Examples	Lecture Discussion	

				Dialogue	
6		**Theoretical Knowledg**	Characteristic of Ring and S Examples	**Lecture** **Discussion** **Dialogue**	
7		**Applied Analysis**	Ideals	**Lecture** **Discussion** **Dialogue**	
8		**Theoretical Knowledg**	Properties of Id and Examples	**Lecture** **Discussion** **Dialogue**	
9		**Applied Analysis**	Theorems on Ideal	**Lecture** **Discussion** **Dialogue**	
10		**Theoretical Knowledg**	**Ring Homomorphisms**	**Lecture** **Discussion** **Dialogue**	
11		**Applied Analysis**	Kernel of a Ring Some Examples	**Lecture** **Discussion** **Dialogue**	
12		**Theoretical Knowledg**	**Fundamental Theorems on Ring Homomorphisms**	**Lecture** **Discussion** **Dialogue**	

13		Applied Analysis	Solving Problems Ring Homomorphisms	Lecture Discussion Dialogue	
14		Theoretical Knowledg	Solving Chapter Exercises	Lecture Discussion Dialogue	
15		Applied Analysis	Definition of a Fie	Lecture Discussion Dialogue	
16		Theoretical Knowledg	Examples of Field	Lecture Discussion Dialogue	
17		Applied Analysis	Connecting Fi with Rings	Lecture Discussion Dialogue	
18		Theoretical Knowledg	Connecting Fie Ideals, and Inte Rings	Lecture Discussion Dialogue	
19		Applied Analysis	Theorems on Relationship Between Fields Rings	Lecture Discussion Dialogue	

20		**Theoretical Knowledg**	**Examples of the Above**	**Lecture Discussion Dialogue**	
21		**Applied Analysis**	**Types of Ideals**	**Lecture Discussion Dialogue**	
22		**Theoretical Knowledg**	**Relationship Between Ty of Ideals**	**Lecture Discussion Dialogue**	
23		**Applied Analysis**	**relationship Betw Regular Ideals Regular Rings**	**Lecture Discussion Dialogue**	
24		**Theoretical Knowledg**	**Radical of an Ide**	**Lecture Discussion Dialogue**	
25		**Applied Analysis**	Theorems on the Radical of Rings and Ideals	**Lecture Discussion Dialogue**	
26		**Theoretical Knowledg**	Connecting Radical of an I with Their	**Lecture Discussion Dialogue**	
27		**Applied Analysis**	**Examples of Finc the Radical of**	**Lecture**	

			Ideal	**Discussion** **Dialogue**	
28		**Theoretical Knowledg**	**Definition of Decomposable and Essential**	**Lecture** **Discussion** **Dialogue**	
28		**Applied Analysis**	Connecting Decomposable Id with Regular Ideals	**Lecture** **Discussion** **Dialogue**	
29		**Theoretical Knowledg**	**Definition Decomposable Essential**	**Lecture** **Discussion** **Dialogue**	
30		**Applied Analysis**	General Review wi Monthly Exam	**Lecture** **Discussion** **Dialogue**	

11. Course Evaluation

Monthly Quizzes :15 marks
Midterm Exam :25 marks
Final Exam :60 marks

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book: Ring Theory / Burton
Main references (sources)	Introduction to Ring Theory
Recommended books and references (scientific journals, reports...)	Introduction to Ring Theory / Safwan
Electronic References, Websites	**YouTube**

Suggestions for adding other types of algebraic ideals and providing some examples, such as r-ideals and n-ideals.

Course Description Form

1. Course Name:
Measurement and evaluation
2. Course Code:
_
3. Semester / Year:
2026-2025
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
Attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours
7. Course administrator's name (mention all, if more than one name)
Name: Thakreen Faisal Sultan Email: **thakreenfaisal@uohamdaniya.edu.iq**

8. Course Objectives	
Course Objectives	• It aims to prepare teachers who are capab of teaching in schools using all the method and tests required for teaching. • It also aims to prepare them and ena them to apply these methods and tests in a practical and educational manner. • It also aims to keep pace with practical and technical developments in this field

9. Teaching and Learning Strategies	
Strateg	Use educational discussion (educational dialogue), which relies on t exchange of ideas to arrive at facts. Collective notes to involve all students in classroom activities.

	Classroom exercises to participate in finding appropriate solutions certain aspects of the assessment.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Theoretical knowledge And applied analysis	Introduction to The subject of measureme nt and evaluation	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
2	2	Theoretical knowledge And Applied analysis	Overview Measurement and Evaluation Including a brief history andthe concepts of testi measurement and evaluation. and their importance in the educational proces	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
3	2	Theoretical knowledge And applied analysis	Types of calendars According to the standard or test used and categorised	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
4	2	Theoretical knowledge And Applied analysis	Formulation of be havioural goals And their importance evaluation andBloom's taxonomy	Lecture and Cooperative learning style	Tests Editing And student participation during the lecture duri the lecture

			educational goals		
5	2	Theoretical knowledge And Applied analysis	The test map and its importar in thepreparation of achievement tests	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
6	2	Theoretical knowledge And Applied analysis	Achievement tests, their concept and types	Lecture andcooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
7	2	Theoretical knowledge And Applied analysis	Answer-based test	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
8	2	Theoretical knowledge And Applied analysis	Tests Tests that Require lengthy answers (essay)	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
9	2	Theoretical knowledge And Applied analysis	Tests Tests that require short answers	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
10	2	Theoretical knowledge And Applied analysis	A monthly exam		Amonthly exam
11	2	Theoretical knowledge	Tests True /false	Lecture and cooperative	Tests Editing And

		And Applied analysis	tests,advantages, disadvantages and rules for setti them up	learning style	student participatior during the lecture duri the lecture
12	2	Theoretical knowledge And Applied analysis	Matching test: advantages, disadvantages and preparation rules	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
13	2	Theoretical knowledge And Applied analysis	Multiple Choice Test Advantages, disadvantages And Preparation rules	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
14	2	Theoretical knowledge And Applied analysis	Assembling test paragraphs Preparing test instructions	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
15	2	Theoretical knowledge And Applied analysis	Testing experiencee Analyse and optimize test passages	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
16	2	Theoretical knowledge And Applied analysis	Muzzle the answer (test correction)	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
17	2	Theoretical knowledge And	Types of correction keys To	Lecture and cooperative learning style	Tests Editing And student

		Applied analysis	Statistically analyse the test items		participatior during the lecture duri the lecture
18	2	Theoretical knowledge And Applied analysis	To Statistically analyse the test items	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
19	2	Theoretical knowledge And Applied analysis	Extracting the coefficient of difficulty for Essay test paragraphs	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
20	2	Theoretical knowledge And Applied analysis	Extracting the coefficient difficulty for essay test paragraphs	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
21	2	Theoretical knowledge And Applied analysis	Amonthly exam		Amonthly exam
22	2	Theoretical knowledge And Applied analysis	Extracting the discrimination coefficient of the test items Objective comprehensive theoretical examination in the subject	Lecture and cooperative learning style	Tests Editing And student participatior during the lecture duri the lecture
23	2	Theoretical knowledge And	Extracting the coefficient of effectiveness	Lecture and cooperative learning style	Tests Editing And student

		Applied analysis	of false alternatives		participation during the lecture duri the lecture
24	2	Theoretical knowledge And Applied analysis	Improve paragraphs according to the indicators analysed	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
25	2	Theoretical knowledge And Applied analysis	Characteristics of a good test	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
26	2	Theoretical knowledge And Applied analysis	Honesty, what it what influences it	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
27	2	Theoretical knowledge And Applied analysis	Honesty Content and honesty outward sincerity Structural honesty and test-related honesty	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
28	2	Theoretical knowledge And Applied analysis	Persistence, what it is, what influences it	Lecture and cooperative learning style	Tests Editing And student participation during the lecture duri the lecture
29	2	Theoretical knowledge And	Stability calculation methods,	Lecture and cooperative learning style	Tests Editing And student

		Applied Analysis	retesting method		participation during the lecture duri the lecture
30	2	Theoretical knowledge And Applied analysis	A monthly exam		A monthly 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, any)	Measurement and evaluation
Main references (sources)	-Psychometrics and Educational Evaluati by Prof. Dr Safaa Tariq Habib. -Psychometrics. Authored by Safwat Farag.
Recommended books and references (scientific journals, reports...)	1.Measurement and Evaluation. Dr Sabah Hussein Al-Ajili and others 2.Journal of Psychometrics and Educational Evaluation
Electronic References, Websites	-

13. Course Development Plan

1. Organising workshops on measurement and assessment
2. Adding modern concepts such as electronic assessment, realis assessment, and data-based education
3. Organising field visits to schools to observe actual assessment mechanisn
4. Integrating technology into the teaching and application of measureme and evaluation.
5. Keeping abreast of developments in the field of measurement a evaluation.

Course Description Form

1. Course Name:
Dynamical Systems
2. Course Code:
3. Semester / Year:
Year
4. Description Preparation Date:
20/9/2025
5. Available Attendance Forms:
20/9/2025
6. Number of Credit Hours (Total) / Number of Units (Total)
6 (Units)
7. Course administrator's name (mention all, if more than one name)
Name: Sarah Ghanim Mahmood Alkabachee Email: sarahghanim@uohamdaniya.edu.iq

8. Course Objectives	
Course Objectives	• **Recognizing the basic characteristics of the nature of scientific material.** • **Developing his/her analytical abilities to reach logical solutions for various problems.** • **Ability to evaluate the academic program (Mental skills).** • **Ability to collect information from different sources.** • **Ability to make decisions and take responsibility.** • **Ability to maintain self-discipline and a spirit of motivation.**

9. Teaching and Learning Strategies	
Strategy	• **Lectures – Discussion sessions – Solving exercises.** • **Guiding students to use books and scientific journals independently.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject na	Learning method	Evaluation method
1	2	Theoretical knowledge an applied analysis	Introduction of dynamical system	Discussion and dialogue	Direct questions
2	2	Theoretical knowledge an applied analysis	Some definitions	Discussion and dialogue	Direct questions

3	2	Theoretical knowledge an applied analysis	The iteration	Discussion and dialogue	Direct questions
4	2	Theoretical knowledge an applied analysis	The orbit	Discussion and dialogue	Direct questions
5	2	Theoretical knowledge an applied analysis	Cob web plot	Discussion and dialogue	Direct questions
6	2	Theoretical knowledge an applied analysis	Fixed point	Discussion and dialogue	Direct questions
7	2	Theoretical knowledge an applied analysis	Examples	Discussion and dialogue	Direct questions
8	2	Theoretical knowledge an applied analysis	The existence of fixed point	Discussion and dialogue	Direct questions
9	2	Theoretical knowledge an applied analysis	The unique of fixed point	Discussion and dialogue	Direct questions
10	2	Theoretical knowledge an applied analysis	Monthly Exam	Discussion and dialogue	Direct questions
11	2	Theoretical knowledge an applied analysis	Invariant point	Discussion and dialogue	Direct questions
12	2	Theoretical knowledge an applied analysis	Lipchitz function	Discussion and dialogue	Direct questions
13	2	Theoretical knowledge an applied analysis	Contraction function	Discussion and dialogue	Direct questions
14	2	Theoretical knowledge an applied analysis	Stability of the fixed point	Discussion and dialogue	Direct questions
15	2	Theoretical knowledge an applied analysis	Periodic points	Discussion and dialogue	Direct questions
16	2	Theoretical knowledge an applied analysis	Attracting and repelling 2-sycle	Discussion and dialogue	Direct questions
17	2	Theoretical knowledge an applied analysis	Autonomics D.S.	Discussion and dialogue	Direct questions
18	2	Theoretical knowledge an applied analysis	Stability theory	Discussion and dialogue	Direct questions
19	2	Theoretical knowledge an applied analysis	Chaos theorem	Discussion and dialogue	Direct questions
20	2	Theoretical knowledge an applied analysis	Lyapunov theorem	Discussion and dialogue	Direct questions
21	2	Theoretical knowledge an applied analysis	Investigation for stability of first	Discussion and dialogue	Direct questions
22	2	Theoretical knowledge an applied analysis	approximation	Discussion and dialogue	Direct questions
23	2	Theoretical knowledge an applied analysis	Monthly Exam	Discussion and dialogue	Direct questions
24	2	Theoretical knowledge an applied analysis	Basin of attracting	Discussion and dialogue	Direct questions
25	2	Theoretical knowledge an applied analysis	Stationary points	Discussion and dialogue	Direct questions
26	2	Theoretical knowledge an applied analysis	Examples	Discussion and dialogue	Direct questions
27	2	Theoretical knowledge an applied analysis	Bifurcation points	Discussion and dialogue	Direct questions
28	2	Theoretical knowledge an applied analysis	Examples	Discussion and dialogue	Direct questions
29	2	Theoretical knowledge an applied analysis	Linear dynamical system	Discussion and dialogue	Direct questions
30	2	Theoretical knowledge applied analysis	Phase portrait	Discussion and dialogue	Direct questions

11.Course Evaluation

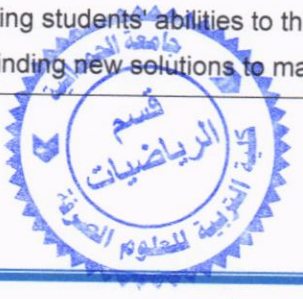
- **10 marks** – Monthly exams
- **5 marks** – Attendance and daily quizzes

• **25 marks** – Midterm exam • **60 marks** – Final exam • **100 marks** – Total score

12.Learning and Teaching Resources	
Required textbooks (curricular books any)	Introduction continuum Mechanics fourth Edition,(W ,Erhard Krempl) January 2009
Main references (sources)	
Recommended books and references (scientific journals, reports...)	النمذجةالماركوفية مع تطبيقات عملية الجزء الاول، أ. د. باسل يونس الخياط، 2011 النمذجةالماركوفية مع تطبيقات عملية الجزء الثاني، أ. د. باسل يونس الخياط، 2011
Electronic References, Websites	

1. Course Name: Topology
2. Course Code: HAEPSMA25F401
3. Semester / Year: First and Second Semesters of the Academic Year 2026-2025
4. Date of preparation of this description: 1-9-2025
5. Available Attendance Forms: attend
6. ﻫ Number of Credit Hours (Total) / Number of Units (Total) **:120**
7.Course administrator's name (mention all, if more than one name)
Name: Sahbaa Abd alsttar Email: Sahbaa1977@uohamdaniya .edu.iq

8.Course Objectives	
Course Objectives	The study of Tebologi aims to provide a deep understanding of the basic concepts in Tebologi and their applications in mathematics and other sciences. Developing students' skills in analytical and creative thinking, and one of the main objectives of studying this subject. 1. **Understand the basic concepts:** the definition of distances, geometric shapes, similarities and differences between them. 2. **Studying structures:** Understanding the structures that can be present on different spaces, such as surfaces and shapes of different dimensions. 3. **Mathematical analysis: The** use of topological tools and concepts to analyze geometric shapes and other spaces in an accurate manner. 4. **Practical applications:** Understand how to apply the concepts of topology in solving mathematical and engineering problems, including applications in physics, engineering, and computational sciences. 5. **Creative Thinking:** Developing students' abilities to think creatively and use topological concepts in finding new solutions to mathematical and



	scientific problems.

9.Teaching and learning strategies

Strategy	1. **Discovery learning**: Encouraging students to infer concepts through practical examples or open-ended problems. Use activities that require critical thinking and reasoning. 2. **Cooperative learning**: dividing students into small groups to work on complex issues in thebiology. Promote discussion among students to exchange ideas and solutions. 3. **Problem-solving strategy:** posing mathematical problems related to topology and encouraging students to find innovative solutions. Focus on applying theoretical concepts in practical situations. 4. **Mind maps :** The use of mind maps to clarify relationships between different concepts in thebiology. Help students organize ideas and connect them to each other

10.Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First Divorce	4	Theoretical knowledge and applied analysis	Tebologic space (Definition and Theorems)	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.
Second	4	Theoretical knowledge and applied analysis	Tebologic space (Theorems)	Practical Application	Direct questions.
The third	4	Theoretical knowledge and applied analysis	Neighbors and their properties	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.
Fourth	4	Theoretical knowledge and applied analysis	Open set with its own properties and reward	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.
Fifth	4	Theoretical knowledge and applied analysis	Open set with its own properties and reward	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.
Sixth	4	Theoretical knowledge and applied	Foundation, Partial Foundation	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.

		analysis	and Open Neighbourh ood System		
The seventh	4	Theoretical knowledge and applied analysis	Derivative set	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.
Eighth	4	Theoretical knowledge and applied analysis	External points of a group	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END| UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.
Ninth	4		Resolve exercises with an exam		
tenth	4	Theoretical knowledge and applied analysis	The Relationship of Metric Space and Tabological Space	Plenary discussion / brainstorming	Direct questions.
11th Grade	4	Theoretical knowledge and applied analysis	Continuity in the Tebologic Space (Definition and Examples)	Lecture and Discussion , Brainstorming	Direct questions.
twentieth	4	Theoretical knowledge and applied analysis	Continuity in the Topological Space(Theo rems)	Brainstorming	Direct questions.
Thirteenth	4	Theoretical knowledge and applied analysis	Continuity Rewards	Lecture and Discussion	Direct questions.

Fourteenth	4	Theoretical knowledge and applied analysis	The open function and the closed function and their relationship to each other and to the continuous function	Lecture and Discussion	Direct questions.
Fifteenth	4	Theoretical knowledge and applied analysis	The open function and the closed function and their relationship to each other and to the continuous function	Lecture and Discussion	Direct questions.
Week 6	4	Theoretical knowledge and applied analysis	Construct Continuous, Open and Closed Functions	Lecture and Discussion	Direct questions.
Week 7	4	Theoretical knowledge and applied analysis	Multiplicatio n Tabology	Lecture and Discussion	Direct questions.
Week 8	4	Theoretical knowledge and applied analysis	Tabology T_0-	Lecture and Discussion	Direct questions.
Week 9	4	Theoretical knowledge and applied analysis	Tabologic - T_1-T_2	UNTRANSLATED_CONTENT_START UNTRANSLATED_CONTENT_END	Direct questions.

Week 20	4		Resolve exercises with an exam		
Week 21	4	Theoretical knowledge and applied analysis	Equivalents, properties and relationship between different types T_0-T_1-T_2	Lecture and Discussion	Direct questions.
Week Two	4	Theoretical knowledge and applied analysis	Equivalents, properties and relationship between different types T_0-T_1-T_2	Lecture and Discussion	Direct questions.
Week 23	4	Theoretical knowledge and applied analysis	Tabology T3- T4	Brainstorming	Direct questions.
Week Four	4	Theoretical knowledge and applied analysis	Equivalents, properties and the relationship between different types T3-T4-T0-T1-T2	Brainstorming	Direct questions Direct questions
Week 5	4	Theoretical knowledge and applied analysis	Equivalents, properties and the relationship between different types T3-T4-T0-T1-T2	Brainstorming	Direct questions.

Week 26	4	Theoretical knowledge and applied analysis	Convergence in Tebologic Spaces	Brainstorming	Direct questions.
Week 7	4	Theoretical knowledge and applied analysis	Convergence in Tebologic Spaces	Brainstorming	Direct questions.
Week 8	4	Theoretical knowledge and applied analysis	Stacked Space (Definition and Proofs)	Brainstorming	Direct questions.
Week 9	4	Theoretical knowledge and applied analysis	Stacked Space (Definition and Proofs)	Brainstorming	Direct questions.
Week 30	4	Theoretical knowledge and applied analysis	Hein-Borel theorem	Lecture and Discussion	Direct questions.

11. Course Evaluation
1- Daily preparation, daily examinations and reports: 5 marks. 2- Monthly exams: 10 marks. 3- Mid-year exam: 25 marks. 4- End of year exam: 60 marks.

1. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Nouri Farhan Al-Mayahi,Tebology, Qadisiyah University,2021
Main references (sources)	1. Mohammed Jawad Saad Eddin et al.,General Tebology,University of Baghdad, First Edition,1987 2. William Pervin,Fundamentals of General Topology,trans. Atallah Thamer Al-Ani, First Edition, University of Baghdad 1986
Recommended books and references (scientific journals, reports...)	1. Abd Rabbo Mohammed Salim,Jurisprudence of

	Tebology, Palestine First Edition,1999 2. Samir Bashir Hadid, Introduction to General Tubology,University of Mosul,1988 3. Ahmed Abdel Qader Ramadan and Taha Morsi Al-Adawi, General Tebologi, King Saud University. 4. Ghaffar Hussein Musa, Introduction to Tebology, Dar Al-Masirah for Publishing, Distribution and Printing.
Electronic References, Websites	YouTube

Suggestions : Draw diagrams that illustrate topology concepts. Using mathematical software (e.g. Mathematica or GeoGebra) to simulate topological concepts

Course Description Template

1. Course Title
Complex Analysis
2. Course Code
HAEPSMA25F400
3. Semester / Academic Year
Fourth Year / 2025-2026
4. Date of Preparation of this Description
19 / 9 / 2025
5. Available Attendance Modes
Face-to-Face Instruction
6. Total Study Hours / Total Credit Units
120 hours / 6 units
7. Name of Course Coordinator (If more than one, list all)
Lecturer Dr. Hikmat Sharif Mustafa Email hekmat78@uohamdaniya.edu.iq **Assist Lecturer: Shahab Ahmed Hassan** shahab19862023@uohamdaniya.edu.iq
8. Course Objectives

Subject Learning Objectives	• This course aims to study the topological properties of complex numbers. • Provide an introduction to analytic functions, complex integration, and important integral formulas.

	• Provide an introduction to complex integration and integral formulas.

9. Teaching and Learning Strategies

Strategy	Lecture, discussion, dialogue, applied analysis, brainstorming

10.Course Structure

Week	Hours	Required Learning Outcomes	Unit or Topic Name	Teaching Method	Assessment Method
1-5	20	Theoretical Knowledge and Applied Analysis	complex numbers Algebraic property Cartesian coordinate Polar coordinate Regions in the complex plane The extended complex plan	Lecture, discussion and dialogue	Direct questions

6-10	20	Theoretical Knowledge and Applied Analysis	Analytic functions 2 Functions in one variable Multiple valued function Application ,Limits ,Continuity ,Derivatives CauchyRieman equations andanalytic functions CauchyRieman equations in polar form Harmonic functions	Lecture, discussion and dialogue	Direct questions
11-13	12	Theoretical Knowledge and Applied Analysis	Elementary Function 3 Exponential functions Logarithmic functions Trigonometri c functions Hyperbolic functions	Lecture and discussion, brainstorming	Direct questions
14-18	20	Theoretical Knowledge and Applied Analysis	Mapping by elementary functions 4 Linear functions transformations The transformation w=1/z The transformatio n w=z	Lecture and discussion	Monthly exam
19-24	24	Theoretical Knowledge and Applied Analysis	Integrations and Applications 5 Definite integrals Line integrals CauchyGoursat theorem Simply connected and multiply connected domains Indefinite integrals The cuachy	Lecture, discussion and dialogue	Direct questions

			integrals formula Morera's Theorem Liouvell's Theorem the fundamental Theorem of algebra		

11.Cource Assessment
15 marks / Monthly Exams 25 marks / Midterm Exam 60 marks / Final Exam

12.Learning Resources	
Required Textbooks (Methodology, if available)	Complex Analysis,Joseph – Back,2010 Complex Variables and – Application(8 edition), Ruel V. Churchill & 2008 James Brown,
Primary References (Sources)	Main Reference/ Complex Variables and Their Applications Authored by R. Churchill, G. Brown, R. Ferry Translated by Yahya Abdul Saeed, Samir Bashir Hadid. Ministry of Higher Education and Scientific Research/University of Mosul/19
Recommended Supporting Books and References (Scientific Journals, Reports, etc.)	Introduction to Nodal Analysis, Dr. Hassan Jassim Muhammad, University of Mosul.
Electronic References, Websites	YouTube

13.Curriculum Development Plan
1- Active learning: Encouraging students to participate through open questions and group discussions.
2- Blended learning: Integrating electronic content (videos, interactive simulations) with classroom lectures.
3- Adding new topics: □ Applications of complex analysis in differential equations. □ Expanding the basics. □ Reviewing the concepts of complex functions, complex differentiation, series, and complex integration.
4- Relying on modern sources in teaching the course, such as: • Introduction to Comlex Analysis by Michael E. Taylor , Waterstones , 2019. • Comlex Analysis: SpringerLink, 2010