Course Description Form

1. Course Name	
Logical Design	
2. Course Code	
CS100	
3. Semester/Year	
annual	
4. Date of preparation of this description	
2024 /10/1	
5. Available Forms of Attendance	
Theoretical and practical lectures	
6. Number of Hours (Total) / Number of Credits (Total)	
(60 Theoretical Hours + 60 Practical Hours) / 6 Units	
7. Course administrator name (if more than one name mentioned)	
Name: Eng. Maher Fakhreddin Ismail Email: maher.f@uohamdaniya.edu.iq	
8. Course Objectives	
1. Enabling the student to know the basics of designing digital systems . **2. Knowledge of counting, code, and conversion systems between different systems.**	**Course Objectives**

3. Knowledge of the foundations and laws of urinary algebra. **4. Shortening boolean functions using the Karnoff map .** **. Understanding Flip-Flops .٥** **6. فهمMultiplexer وDemultiplexer .** **7. Knowledge and understanding of displacement recorders .**	

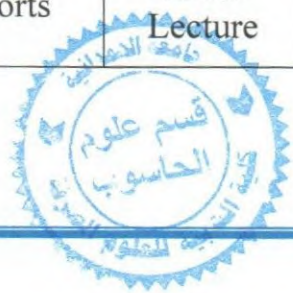
9. Teaching and Learning Strategies

• Knowledge and understanding of the basics of designing digital systems: counting systems, codes, conversion between different systems, foundations and laws of polynomial algebra, abbreviation of logical functions using the Karnov map. Understandingflip-flops, as well as understanding multiplexer and demultiplexer . • Knowledge of the systems of preparation and conversion between them . • Knowing the types of codes and converting between them . • Knowledge of the foundations and laws of polynomial algebra and its use in simplifying logical circuits . • Learn how to simplify logical circuits using the Karnoff map .	**Strategy**

10.Course Structure

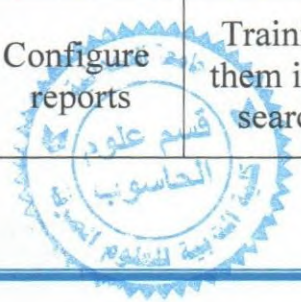
Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week

Daily Descriptive Tests	Discussions in the Lecture	Numbers SYSTEMS decimal Number Binary Number Octal Number Hexadecimal Number	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**1**
Configure reports	Use of library resources	Conversions between system decimal to Binary Conversion Binary to decimal Conversion decimal to Octal Conversion Octal to decimal Conversion	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**2**
Daily Descriptive Tests	Training them in e-search	decimal to Hexadecimal Conversion Hexadecimal to decimal Conversion Binary to Octal Conversion Octal d to Binary Conversion	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**3**
Configure reports	Discussions in the Lecture	Binary to Hexadecimal Conversion	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**4**



		Hexadecimal to Binary Conversion Octal d to Hexadecimal Conversion Hexadecimal to Octal Conversion			
Daily Descriptive Tests	Use of library resources	Arithmetic Operations . Addition Addition in Binary	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**5**
Configure reports	Training them in e-search	Addition in Octal Addition in Hexadecimal	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**6**
Daily Descriptive Tests	Discussions in the Lecture	Complements ''s Complements In Binary 2's Complements In Binary	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**7**
Configure reports	Use of library resources	''s and 2's Complements in decimal ''s and 2's Complements in Octal 1's and 2's Complements in Hexadecimal	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**8**
Daily Descriptive Tests	Training them in e-search	Subtraction in Binary Multiplication in Binary Division in Binary	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**9**

Configure reports	Discussions in the Lecture	Signed Number Binary coded decimal(BCD)	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**10**
Daily Descriptive Tests	Use of library resources	Encess 3 The Gray code	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**11**
Configure reports	Training them in e-search	parity binary number odd-parity even-parity	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**12**
Daily Descriptive Tests	Discussions in the Lecture	Boolean Algebra	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**13**
Configure reports	Use of library resources	Boolean Operations Rules and laws of Boolean algebra	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**14**
Daily Descriptive Tests	Training them in e-search	Standard Representation for Logical The SOP and The POS	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**15**
Configure reports	Discussions in the Lecture	The Karnaugh Map Two –variable The Karnaugh Map	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**16**
Daily Descriptive Tests	Use of library resources	Three – variable The Karnaugh Map four –variable The Karnaugh Map	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**17**
Configure reports	Training them in e-search	simplification Karnaugh Map	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**18**



		don't care condition			
Daily Descriptive Tests	Discussions in the Lecture	Design Examples Half-adder Full adder	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**19**
Configure reports	Use of library resources	Half subtractor Full Subtractor	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**20**
Daily Descriptive Tests	Training them in e-search	BCD TO 7_ SEGMENT	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**21**
Configure reports	Discussions in the Lecture	DECODER Convert cray to binary	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**22**
Daily Descriptive Tests	Use of library resources	DECODER Convert binary to cray Parallel adder circuit	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**23**
Configure reports	Training them in e-search	Flip-Flops asynchronous R-S Flip-Flops synchronous R-S Flip-Flops	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**24**
Daily Descriptive Tests	Discussions in the Lecture	D flip-flop J-k Flip Flop TOGGLE FF(T-FF) Flip Flop	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**25**
Configure reports	Use of library resources	Encoder	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**26**
Daily Descriptive Tests	Training them in e-search	Decoder	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**27**

Configure reports	Discussions in the Lecture	Multiplexers and their use in combinational logic design	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**28**
Daily Descriptive Tests	Use of library resources	Read Only Memory (ROM	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**29**
Configure reports	Training them in e-search	Shift Registers Introduction Serial Shift Registers Parallel Shift Registers	Understanding the vocabulary of the lesson	2Theoretical + 2practical	**30**

11.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

- **Oral assessment by involving students in discussions.**
- **Quizzes are semi-weekly.**
- **Professionally and individually configure technical reports**

	12.Learning and Teaching Resources
Digital Logic Fundamentals 9th edition (Thomas L. Floyd)	**Required textbooks (methodology if available)**
Digital Logic And Computer Design By M. Morris Mano	**Main References (Sources)**
(Morris Mono) Logic and Computer Design Fundamentals Translator	**Recommended books and references (...scientific journals, reports)**
Logical Design (Al-Hamad Al-Zahran)	**Electronic References, Websites**

Course Description Form

1. Course Name
Structured Programming
2. Course Code
CS101
3. Semester/Year
annual
4. Date of preparation of this description
2024-2025
5. Available Forms of Attendance
Physical Presence
6. Number of Hours (Total) / Number of Credits (Total)
(60 Theoretical Hours + 60 Practical Hours) / 6 Units
7. Course administrator name (if more than one name mentioned)
:Name: Eng. Mohamed Qasim Ahmed (Practical + Theoretical) Email m.kassim@uohamdaniya.edu.iq Eng. Ahmed Abdulrahman Idris (Practical) Email: ahmed-alkaddo@uohamdaniya.edu.iq
8. Course Objectives

A. Comprehensive understanding of programming concepts: Students will gain a comprehensive understanding of basic programming concepts such as variables, data types, and control structures.	**Course Objectives**

B. Master Programming Skills: Students will master the skill of writing, compiling, and fixing bugs for various programs. C. Effective use of programming tools: Students will become proficient in using programming tools and environments effectively for software development tasks. D. Collaboration and Teamwork: Students will gain experience in collaborating with their colleagues and working effectively in teamwork environments, especially through project-based activities. E. Ability to adapt to new technologies: Students will develop the ability to adapt to new programming languages and technologies, enhancing their readiness to advance in the field of computer science. F. Communication Skills: Students will improve their communication skills by clearly articulating programming concepts and ideas, whether by speaking or writing.	

G. Preparation for graduate studies and career: Students will be prepared to pursue graduate studies in computer science or related disciplines, and will equip them with the skills and thinking necessary to succeed in their academic and professional lives.	

9. Teaching and Learning Strategies

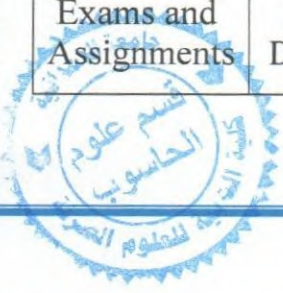
• Understand basic programming concepts such as variables, data types, and control structures. • Analyze problems and design algorithmic solutions using structured programming techniques. • Understanding program construction and its linguistic and semantic significance. • Apply bug fixing and troubleshooting techniques. • Understand basic algorithmic analysis and efficiency considerations. • Write , compile and fix errors in software skillfully. • Apply structured programming concepts to solve computational problems effectively. • Demonstrate proficiency in function programming and function analysis.	**Strategy**

• Use software tools and environments effectively. • Read and understand code written by others.	

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Exams and Assignments	Lecture, Discussion and Application	Algorithm & flowcharts	Teach the student how to solve problems by writing algorithms and .flowcharts	2 Theoretical + 2 Practical	1
Exams and Assignments	Lecture, Discussion and Application	Algorithm & flowcharts	Teach the student how to solve problems by writing algorithms and .flowcharts	2 Theoretical + 2 Practical	2
Exams and Assignments	Lecture, Discussion and Application	Algorithm & flowcharts	Teach the student how to solve problems by writing algorithms and .flowcharts	2 Theoretical + 2 Practical	3
Exams and Assignments	Lecture, Discussion and Application	Introduction to C++ Language	Introduction to the programming language (C++), program structure, and language .libraries	2 Theoretical + 2 Practical	4
Exams and Assignments	Lecture, Discussion and Application	Data Types	Define the basic data .types	2 Theoretical + 2 Practical	5

Exams and Assignments	Lecture, Discussion and Application	General tools of C++ language Arithmetic, logical, relational	Introduction to computational, logical and relational .operations	2 Theoretical + 2 Practical	**6**
Exams and Assignments	Lecture, Discussion and Application	Increment, Decrement, and assignment operators	Introducing the processes of increase, decrease and .substitution	2 Theoretical + 2 Practical	**7**
Exams and Assignments	Lecture, Discussion and Application	Operators' precedence in C++ language & comments	Introduce the precedence of operations as well as .feedback	2 Theoretical + 2 Practical	**8**
Exams and Assignments	Lecture, Discussion and Application	Variables and Constant and Reserved words	Definition of variables, constants, and reserved words	2 Theoretical + 2 Practical	**9**
Exams and Assignments	Lecture, Discussion and Application	Type Casting	Introducing gender .conversions	2 Theoretical + 2 Practical	**10**
Exams and Assignments	Lecture, Discussion and Application	Input/output statements	Introducing input and output .instructions	2 Theoretical + 2 Practical	**11**
Exams and Assignments	Lecture, Discussion and Application	Conditional statements	Definition of the conditional .instructions	2 Theoretical + 2 Practical	**12**
Exams and Assignments	Lecture, Discussion and Application	Conditional statements	Definition of the conditional .instructions	2 Theoretical + 2 Practical	**13**
Exams and Assignments	Lecture, Discussion and Application	Loop Statements	Introducing repetition .instructions	2 Theoretical + 2 Practical	**14**
Exams and Assignments	Lecture, Discussion	Loop Statements	Introducing repetition .instructions	2 Theoretical	**15**



	and Application			+ 2 Practical	
Exams and Assignments	Lecture, Discussion and Application	Nested loop Statements	Definition of nested repetition .prompts	2 Theoretical + 2 Practical	**16**
Exams and Assignments	Lecture, Discussion and Application	Nested loop Statements	Definition of nested repetition .prompts	2 Theoretical + 2 Practical	**17**
Exams and Assignments	Lecture, Discussion and Application	Jump Statements	Introducing jumping .instructions	2 Theoretical + 2 Practical	**18**
Exams and Assignments	Lecture, Discussion and Application	Jump Statements	Introducing jumping .instructions	2 Theoretical + 2 Practical	**19**
Exams and Assignments	Lecture, Discussion and Application	1D Arrays	Definition of .monomatics	2 Theoretical + 2 Practical	**20**
Exams and Assignments	Lecture, Discussion and Application	1D Arrays	Definition of .monomatics	2 Theoretical + 2 Practical	**21**
Exams and Assignments	Lecture, Discussion and Application	2D Arrays	Definition of .binary matrices	2 Theoretical + 2 Practical	**22**
Exams and Assignments	Lecture, Discussion and Application	Multi Dimension Arrays	Definition of triple matrices and higher .ones	2 Theoretical + 2 Practical	**23**
Exams and Assignments	Lecture, Discussion and Application	Standard Functions	Teaching the student with ready-made .functions	2 Theoretical + 2 Practical	**24**
Exams and Assignments	Lecture, Discussion and Application	C++ Strings	Introducing their strings .and functions	2 Theoretical + 2 Practical	**25**

Exams and Assignments	Lecture, Discussion and Application	User-defined Functions	Introducing the student to how to write .functions	2 Theoretical + 2 Practical	**26**
Exams and Assignments	Lecture, Discussion and Application	User-defined Functions	Introducing the student to how to write .functions	2 Theoretical + 2 Practical	**27**
Exams and Assignments	Lecture, Discussion and Application	User-defined Functions	Introducing the student to how to write .functions	2 Theoretical + 2 Practical	**28**
Exams and Assignments	Lecture, Discussion and Application	Files	Define the student how to store data .using files	2 Theoretical + 2 Practical	**29**
Exams and Assignments	Lecture, Discussion and Application	Files	Define the student how to store data .using files	2 Theoretical + 2 Practical	**30**

11.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

1. **Reflective Essays: Essays in which students reflect on their learning experiences and the challenges they have faced.**
2. **Attitude Questionnaires: Questionnaires to assess students' attitudes towards programming and problem-solving.**
3. **Progress Monitoring: Track student progress on long-term projects to assess perseverance and resilience.**
4. **Participation in extra-curricular activities: Evaluation of participation in programming competitions to encourage a growth mindset.**

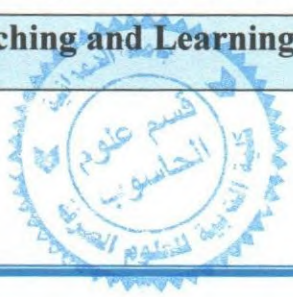
	12.Learning and Teaching Resources

"C++ Primer" by Stanley B. Lippman, Josée Lajoie, and Barbara E. Moo.	**Required textbooks (methodology if (available**
"Schaum's Outlines in Programming with C++" by J. R Hubbard.	**Main References (Sources)**
	Recommended books and references (scientific journals, reports...)
https://cplusplus.com/ https://coursera.com/	**Electronic References, Websites**

Course Description Form

1. Course Name
Mathematics
2. Course Code
CS102
3. Semester/Year
annual
4. Date of preparation of this description
1/9/2024
5. Available Forms of Attendance
Weekly/ theoretical only
6. Number of Hours (Total) / Number of Credits (Total)
(60 hours)/ 4 units
7. Course administrator name (if more than one name mentioned)
Name: Eng. Rasha Ra'ad Hadi Email: rasharaad@uohamdaniya.edu.iq
8. Course Objectives

Mathematics aims to empower the student in the fields of research, interpretation, and the ability to make sound decisions based on a solid foundation of measurement and forecasting with risk calculation. Mathematics is a science that aims to intertwine and overlap with all types of sciences and knowledge, and gives a solid mathematical foundation for understanding theoretical and applied sciences.	**Course Objectives**
9. Teaching and Learning Strategies	



• **Teaching students how to solve mathematical functions and equations of all kinds** • **Learn about the concepts of different mathematical equations, the conditions that are associated with them, and how to solve them.** • **Acquire knowledge in solving mathematical problems containing derivatives.** • **The student's ability to perform mathematical operations accurately.** • **The student's ability to solve aerobic exercises in new and easy ways.** • **The student should be able to apply the rules and laws of sports.**	**Strategy**

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
quiz	theoretical	Numbers	The student understands the subject	2 Theoretical	**1**
	theoretical	Absolute value function and its properties		2 Theoretical	**2**
	theoretical	Functions		2 Theoretical	**3**
	theoretical	Fixed function		2 Theoretical	**4**
	theoretical	Operations on functions		2 Theoretical	**5**
	theoretical	Goals		2 Theoretical	**6**
	theoretical	Purpose of Definition		2 Theoretical	**7**
	theoretical	Continuity		2 Theoretical	**8**

	theoretical	Derived by laws		2 Theoretical	**9**
	theoretical	Implicit Derivative		2 Theoretical	**10**
	theoretical	**Lopetal Base**		2 Theoretical	**11**
	theoretical	Incremental and decreasing functions		2 Theoretical	**12**
	theoretical	Concavity and the tipping point		2 Theoretical	**13**
	theoretical	Sequential		2 Theoretical	**14**
	theoretical	Series		2 Theoretical	**15**
	theoretical	Harmonic Sequence		2 Theoretical	**16**
	theoretical	Integration		2 Theoretical	**17**
	theoretical	Bilateral Integration		2 Theoretical	**18**
	theoretical	Find the space between the function axis and the y-axis		2 Theoretical	**19**
	theoretical	Find Lengths		2 Theoretical	**20**
	theoretical	Normal logarithmic function		2 Theoretical	**21**
	theoretical	Exponential function au		2 Theoretical	**22**
	theoretical	Laws of Derivation of a Regular Trigonometric Function		2 Theoretical	**23**
	theoretical	Examples of the Derivation of an Inverse Trigonometric Function		2 Theoretical	**24**
	theoretical	Examples of the Derivation of a Hyperbolic Trigonometric Function		2 Theoretical	**25**
	theoretical	Polar coordinates		2 Theoretical	**26**

	theoretical	Polar Equation Analysis		2 Theoretical	**27**
	theoretical	Differential Equations		2 Theoretical	**28**
	theoretical	Fourier series for odd and even functions		2 Theoretical	**29**
	theoretical	Kama and Beta functions		2 Theoretical	**30**

11.Course Evaluation

Distributing the grade out of ١٠٠ according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports... etc

1. **Quiz.**
2. **Daily, quarterly, and annual exams.**
3. **Seminars.**
4. **Duties.**

	12.Learning and Teaching Resources
	Required textbooks (methodology if available)
	Main References (Sources)
	Recommended books and references (scientific journals, reports...)
	Electronic References, Websites

Course Description Form

1. Course Name
Computer Organization
2. Course Code
CS105
3. Semester/Year
annual
4. Date of preparation of this description
4/2/2025
5. Available Forms of Attendance
Weekly/Theoretical & Practical
6. Number of Hours (Total) / Number of Credits (Total)
120 hours with 4 hours per week / 6 units
7. Course administrator name (if more than one name mentioned)
Name: M.M. Murthad Hussain Sabri Email: murthad.sabri@uohamdaniya.edu.iq
8. Course Objectives

The calculator installation curriculum aims to teach students about computer components and how to assemble and maintain them. This curriculum seeks to achieve several goals related to students' understanding of the technologies used in building computers and dealing with them effectively.	**Course Objectives**

Among these goals are: **Understand the principles of computer installation: Teach students about the different components of a computer such as processors, memory modules, graphics cards, etc., and how they work together.** **Developing Assembly and Installation Skills: Training students to assemble and install computer components correctly according to performance and compatibility requirements.** **Learn the Principles of Maintenance and Repair: Introduce students to the basics of computer maintenance and repair common malfunctions that may occur.** **Understanding the concepts of safety and cooling: guiding students in understanding the importance of good cooling and providing security for computer components during operations** **Installation and use.** **Modernization and Upgrade Skills: Teach students how to update and upgrade computer components to improve their performance and effectiveness.**	

Learn about modern technologies: Introduce students to the latest developments in the field of computer installation such as liquid cooling and ultra-fast storage technologies. **Problem Solving Skills: Training students to deal with challenges and problems that may be encountered during the Computer assembly and maintenance.** **These objectives aim to enable students to develop their skills in the field of computer installation and dealing with them professionally and effectively.**	
9. Teaching and Learning Strategies	
The cognitive objectives related to the Calculator Synthesis Curriculum include a set of abilities and knowledge that students learn during their studies and application of this curriculum. Here are some basic cognitive skills: Understanding PC Components: Students learn about computer components such as processor (CPU), memory (RAM), graphics card (GPU), storage (HDD/SSD), and how they work and interact with each other. Learn the principles of electronics: Students understand the basic principles of electronics, including DC and alternating current, and basic electronic circuit concepts.	**Strategy**

Develop installation and disassembly skills: Students learn how to skillfully assemble and disassemble computer devices, including properly installing and connecting components. Understanding programming principles: Students learn the basics of programming and dealing with different programming languages, which helps them understand how software interacts with computers. Problem Analysis and Diagnosis: Students practice analyzing, diagnosing, and fixing technical problems that may face computers. Understanding security and cooling principles: Students learn how to maintain the integrity of devices and data by applying the right safety and cooling principles. Analyze and evaluate new devices: Students are able to evaluate new devices and technology and choose the right solutions according to the needs of users. These skills enable students to understand how to skillfully design, assemble, and maintain computers and use them efficiently in various practical scenarios The skill objectives of the calculator installation curriculum aim to develop students' abilities in the field of computer equipment assembly and maintenance. Here are some of the key skill goals: Computer Components: It aims to introduce students to the various computer components such as processors, memory units, graphics cards, storage units, and others.	

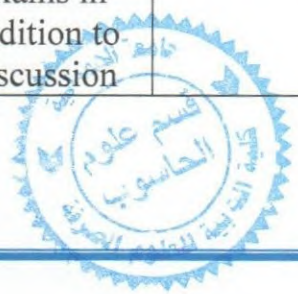
Developing Assembly Skills: Training students to assemble and connect computer components correctly, in accordance with technical and harmonic standards. Understanding the Principles of Electronics: Aims to introduce students to basic electronics concepts related to electronic circuits, alternating currents, and DC. Learn maintenance skills: Train students to recognize common computer malfunctions and perform basic maintenance to solve these problems. Developing Diagnostic Skills: It aims to develop students' abilities in analyzing technical problems, identifying their causes, and providing appropriate solutions. Understanding Safety and Cooling Principles: Introducing students to the safety and cooling principles needed to ensure the safety and best performance of devices. Learn Upgrade Skills: Train students to update and upgrade computer components to improve their performance and keep pace with technological developments. These skills objectives aim to equip students with the practical skills necessary to assemble, maintain, and update computer devices with a high level of efficiency and effectiveness.	

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week

Surprise exams in addition to discussion and questioning	theoretical + practical	General Introduction to the Course	achievement Cognitive Objectives And the Marathi	2 Theoretical + 2 Practical	1
Surprise exams in addition to discussion and questioning		Introduction to computer system, main parts of computer system, organization and architecture		٢Theoretical Practical ٢ +	2
Surprise exams in addition to discussion and questioning		Von Neumann architecture		٢Theoretical Practical ٢ +	3
Surprise exams in addition to discussion and questioning		Computer generations		٢Theoretical Practical ٢ +	4
Surprise exams in addition to discussion and questioning		Data presentation		٢Theoretical Practical ٢ +	5
Surprise exams in addition to discussion and questioning		Introduction to Computer components (motherboard components in details (i.e cpu and memory details))		٢Theoretical Practical ٢ +	6
Surprise exams in addition to discussion		CPU		٢Theoretical Practical ٢ +	7

and questioning					
Surprise exams in addition to discussion and questioning		Memory		٢Theoretical Practical ٢ +	8
Surprise exams in addition to discussion and questioning		System Bus		٢Theoretical Practical ٢ +	9
Surprise exams in addition to discussion and questioning		Introduction to Secondary Storage		٢Theoretical Practical ٢ +	10
Surprise exams in addition to discussion and questioning		Hard disk and magnetic drive		٢Theoretical Practical ٢ +	11
Surprise exams in addition to discussion and questioning		Solid State Drives		٢Theoretical Practical ٢ +	12
Surprise exams in addition to discussion and questioning		I/O interface		٢Theoretical Practical ٢ +	13
Surprise exams in addition to discussion		i/o devices		٢Theoretical Practical ٢ +	14



and questioning					
Surprise exams in addition to discussion and questioning		I/o port and buses		٢Theoretical Practical ٢ +	15
Surprise exams in addition to discussion and questioning		Exam		٢Theoretical Practical ٢ +	16
Surprise exams in addition to discussion and questioning		Logical Gates Architecture		٢Theoretical Practical ٢ +	17
Surprise exams in addition to discussion and questioning		Combinational Circuits		٢Theoretical Practical ٢ +	18
Surprise exams in addition to discussion and questioning		Introduction to Microprocessor: 8085		٢Theoretical Practical ٢ +	19
Surprise exams in addition to discussion and questioning		Assembly in 8085		٢Theoretical Practical ٢ +	20
Surprise exams in addition to discussion		Computer components and organization seminar		٢Theoretical Practical ٢ +	21

and questioning					
Surprise exams in addition to discussion and questioning		Semester exam		**2Theoretical + 2 Practical**	**22**
Surprise exams in addition to discussion and questioning		Memory Expansion		**٢Theoretical Practical ٢ +**	**23**
Surprise exams in addition to discussion and questioning		Memory Design		**٢Theoretical Practical ٢ +**	**24**
Surprise exams in addition to discussion and questioning		Registers		**٢Theoretical Practical ٢ +**	**25**
Surprise exams in addition to discussion and questioning		Cache Memory		**٢Theoretical Practical ٢ +**	**26**
Surprise exams in addition to discussion and questioning		Auxiliary Memory		**٢Theoretical Practical ٢ +**	**27**
Surprise exams in addition to discussion		Memory Addressing Modes		**٢Theoretical Practical ٢ +**	**28**

and questioning					
Surprise exams in addition to discussion and questioning		Windows		٢Theoretical Practical ٢ +	29
Surprise exams in addition to discussion and questioning		Arithmetic Logic Unit		٢Theoretical Practical ٢ +	30

11.Course Evaluation

Distributing the grade out of ١٠٠ according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports... etc

1. **Quiz.**
2. **Daily, quarterly, and annual exams.**
3. **Reports.**
4. **Duties.**

	12.Learning and Teaching Resources
Computer organization: 5th (fifth) edition by Carl Hamacher, Zvonko G. Vranesic	**Required textbooks (methodology if (available**
Computer organization and architecture: design for performance (8th edition) by William stalling	**Main References (Sources)**
All academic studies and scientific researches published in academic scientific journals that are related to the vocabulary of the calculator structure material	**Recommended books and references (scientific journals, reports...)**
All studies published on websites that are related to the	**Electronic References, Websites**

vocabulary of the calculator structure material	

Course Description Form

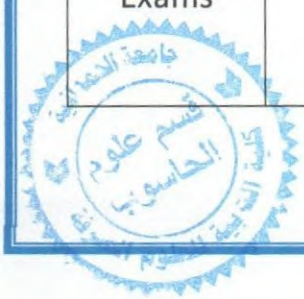
1. Course Name	
Discrete structures	
2. Course Code	
CS104	
3. Semester/Year	
annual	
4. Date of preparation of this description	
2025/2/4	
5. Available Forms of Attendance	
My Weekly Attendance	
6. Number of Hours (Total) / Number of Credits (Total)	
60 Hours / 4 Units	
7. Course administrator name (if more than one name mentioned)	
Name: M.M. Noor Bassem Abdullah Email: noorbasim@uohamdaniya.edu.iq	
8. Course Objectives	
The course aims to study discontinuous mathematical structures such as combinations and drawings	**Course Objectives**
9. Teaching and Learning Strategies	
1. - The student will be able to identify the groups and operations that can be performed on them.	**Strategy**

2. Introducing the student to the proof using mathematical induction 3. Introducing the student to sports relations and their ways of representing them 4. Troubleshoot problems related to functions, relationships, and sequences. 5. Identify mathematical functions, their types, and how to distinguish them. 6. Definition of mathematical logic and the method of proving logical sentences 7. Understanding the charts and their uses . • Creating a theoretical background through explanation, examples, questions and answers • Discussion in the hall and allow the student to express their opinions and suggestions. • Provide students with exercises in the hall and encourage them to ask questions and answers. • Provide the student with home exercises while discussing the mistakes and weaknesses of each exercise so that the best answers can be collectively arrived. • Applying theoretical principles and applying them to advanced topics	

10.Course Structure

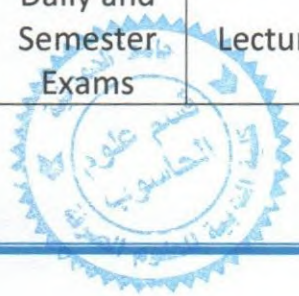
Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week

Daily and Semester Exams	Lecture	Mathematical Induction	Knowledge of the concept of mathematical induction and how to solve questions and compensate for the values of N	2 Theoretical	1
Daily and Semester Exams	Lecture	Introduction to Mathematical Logic Simple Logical Statements – Complex logical statements	Understanding the concept of mathematical logic	2 Theoretical	2
Daily and Semester Exams	Lecture	Variables used in news sentences How to know a sentence if it represents a phrase or not	Familiarize yourself with the concept of mathematical logic and both statements and truthfulness tables	2 Theoretical	3
Daily and Semester Exams	Lecture	Logical issues Logical equivalence	Recognize Honesty Tables	2 Theoretical	4
Daily and Semester Exams	Lecture	The phrase "collection of the result" and the phrase of contradiction	Recognize Honesty Tables	2 Theoretical	5
Daily and Semester Exams	Lecture	Logical Necessity Reparation of cases Conditional Phrases	Recognize Honesty Tables	2 Theoretical	6



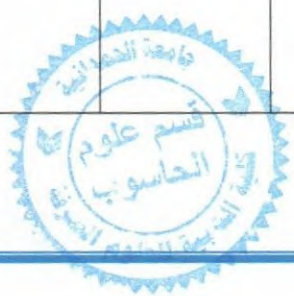
		and violation			
Daily and Semester Exams	Lecture	Rationale Fences	Understanding the concept of logic and logical reasoning	2 Theoretical	7
		Monthly exam		2 Theoretical	8
Daily and Semester Exams	Lecture	Set Theory, Introduction Ways of expressing groups	Identify groups, sub-groups, unions, intersections, and art forms – groups	2 Theoretical	9
Daily and Semester Exams	Lecture	Basic concepts in groups Where are the charts?	Identify groups, sub-groups, unions, intersections, and art forms – groups	2 Theoretical	10
Daily and Semester Exams	Lecture	Setup Groups Algebra Groups	Identify groups, sub-groups, unions, intersections, and art forms – groups	2 Theoretical	11
Daily and Semester Exams	Lecture	Family groups and family Indexed Collections	Identify groups, sub-groups, unions, intersections, and art forms – groups	2 Theoretical	12

Daily and Semester Exams	Lecture	Pairs Arranged and Multiplication Combinations Boolean algebra	Identify groups, sub-groups, unions, intersections, and art forms – groups	2 Theoretical	**13**
Daily and Semester Exams	Lecture	Relations Introduction Bilateral relations Relationship Statement	The student is introduced to the definition of the suspension and its types, solving problems and drawing diagrams	2 Theoretical	**14**
Daily and Semester Exams	Lecture	Methods of Writing the Elements of the Relationship Statement	The student is introduced to the definition of the suspension and its types , solving problems and drawing diagrams	2 Theoretical	**15**
Daily and Semester Exams	Lecture	Starting and Scope of the Relationship	The student is introduced to the definition of the suspension and its types , solving problems and drawing diagrams	2 Theoretical	**16**
Daily and Semester Exams	Lecture	Self-relation and inverse relationship	The student is introduced to the definition	2 Theoretical	**17**



		Relationship Structure	of the suspension and its types , solving problems and drawing diagrams		
Daily and Semester Exams	Lecture	Types of relationships The relationship of parity	The student is introduced to the definition of the suspension and its types , solving problems and drawing diagrams	2 Theoretical	**18**
Daily and Semester Exams	Lecture	Monthly exam		2 Theoretical	**19**
Daily and Semester Exams	Lecture	Functions Introduction and basic concepts in the definitions of functions Examples of functions Complex function	The student will be introduced to the function, its types, its characteristics , and problem solving.	2 Theoretical	**20**
Daily and Semester Exams	Lecture	Discuss functions through Sagittal representation Diagram of functions	The student will be introduced to the function, its types, its characteristics , and problem solving.	2 Theoretical	**21**

Daily and Semester Exams	Lecture	Matrices	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**22**
Daily and Semester Exams	Lecture	Types of arrays	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**23**
Daily and Semester Exams	Lecture	Examples of square matrices	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**24**
Daily and Semester Exams	Lecture	Algebraic operations in matrices	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**25**
Daily and Semester Exams	Lecture	Parameters	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**26**



Daily and Semester Exams	Lecture	Minor and accompanying factors	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**27**
Daily and Semester Exams	Lecture	Finding the inverse of an anomalous square matrix	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**28**
Daily and Semester Exams	Lecture	Linear Equations Using the Matrix Inverse	The student will be introduced to matrices, their types , characteristics , and problem solving.	2 Theoretical	**29**
Daily and Semester Exams	Lecture	Monthly exam		2 Theoretical	**30**

11.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

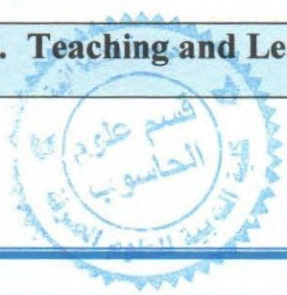
Written Tests, Oral Tests, Daily Posts, Completion of Assignments

	12.Learning and Teaching Resources
1. Graph Theory by Reinhard Diestel Third Edition Springer-Verlag,Heidelberg Graduate Texts in Mathematics, Volume	**Required textbooks (methodology if available)**

173 ,431 pages(2010) 2.First Course in Discrete Mathematics by Ian Anderson Publisher: Springer- Verlag New York, LLC Pub. Date: January 2001 212pp	
First Course in Discrete Mathematics by Ian Anderson Publisher: Springer- Verlag New York, LLC Pub. Date: January 2001 212pp	**Main References (Sources)**
Hou-Biao Li, Ting-Zhu H. and Hong Li : Some New Results on Determinantal Inequalities and Applications. Journal of Inequalities and Applications. Volume (2010). 2-Xiang-Hao Yang, Shi-Cai Gong and Guang-Hui Xu : Minimal skew energy of oriented unicyclic graphs with fixed diameter. Yang et al. Journal of Inequalities and Applications (2013	**Recommended books and references (scientific journals, reports...)**
Houqing Zhou : On some trace inequalities for positive definite Hermitian matrices. Zhou Journal of Inequalities and Applications (2014)	**Electronic References, Websites**

Course Description Form

1. Course Name	
Developmental and Educational Psychology	
2. Course Code	
CS106	
3. Semester/Year	
annual	
4. Date of preparation of this description	
2/2/2025	
5. Available Forms of Attendance	
Face-to-face education	
6. Number of Hours (Total) / Number of Credits (Total)	
60 Hours / 4 Units	
7. Course administrator name (if more than one name mentioned)	
Name: Eng. Yassin Abdulla Saeed Email: yaseen123abd@uohamdaniya.edu.iq	
8. Course Objectives	
Increasing the student's understanding of the educational and social reality throughout the ages, realizing the educational process in its most necessary ways, and understanding the educational theories of various peoples, ancient and modern.	**Course Objectives**
9. Teaching and Learning Strategies	

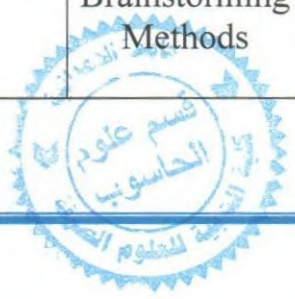


Enabling students to define the general terminology of the subject of general and educational psychology **Students' ability to employ these terms in the field of education** **The ability of students to keep pace with the educational process and in line with educational modernity based on what they have acquired** **Students' ability to prepare mini-reports on some of the concepts contained in the subject vocabulary** **Students practice these concepts in a process of learning and teaching** **Students' interaction during learning based on what they learned in the course**	**Strategy**

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Feedback via direct questions	Lecture & Discussion	Introduction to Psychology, Evolution Historical of Psychology, Nature Science The self and its importance	Theoretical Knowledge and Practical Educational Application	2	١
Feedback via direct questions	Lecture, Discussion	Objectives of Psychology, Psychology Schools and Branches	Theoretical Knowledge and Practical Educational Application	2	٢

Feedback via direct questions	Lecture & Discussion, Brainstorming Techniques	Behavior: Definition of behavior and the factors affecting it.	Theoretical Knowledge and Practical Educational Application	2	٣
Feedback via direct questions	Lecture & Discussion	The Educational Process and Educational Psychology, Research Methods in Psychology	Theoretical Knowledge and Practical Educational Application	2	٤
Feedback via direct questions	Lecture, Discussion and Brainstorming Techniques	Learning and Teaching and their characteristics	Theoretical Knowledge and Practical Educational Application	2	٥
Feedback via direct questions	Lecture and Discussion, Methods of Scientific Skepticism	Attention and sensory perception. The meaning of attention distractions	Theoretical Knowledge and Practical Educational Application	2	٦
Feedback via direct questions	Lecture, Discussion and Brainstorming Techniques	Factors Affecting Attention, Sensory Perception	Theoretical Knowledge and Practical Educational Application	2	٧
Feedback via direct questions	Lecture, Discussion and Brainstorming Techniques	The Meaning of Sensation and Perception - Types of Sensations	Theoretical Knowledge and Practical Educational Application	2	٨
Feedback via direct questions	Lecture and Discussion Brainstorming Methods	Factors Affecting Sensation and Perception, Interpretation of Attention	Theoretical Knowledge and Practical Educational Application	2	٩



Extra-curricular Activities	Discussion Sessions	Motivation in Learning, Importance of Studying Motivation, Nature of Motivation	Theoretical Knowledge and Practical Educational Application	2	١٠
Feedback via direct questions	Lecture, Discussion and Dialogue	For Educational Functions of Motivation, Internal and External Motivations, Strategy Stimulating motivation towards learning	Theoretical Knowledge and Practical Educational Application	2	١١
Feedback via direct questions	Lecture and Discussion Brainstorming Methods	The process of remembering and forgetting, types of remembrance	Theoretical Knowledge and Practical Educational Application	2	١٢
Feedback via direct questions	Lecture & Discussion Collaborative Learning	Factors Affecting the Process of Recall and Forgetfulness, Ways to Improve the Process of Recall	Theoretical Knowledge and Practical Educational Application	2	١٣
Feedback via direct questions	Lecture & Discussion	Explanation of Forgetfulness, Causes of Forgetfulness, Information Processing Methods	Theoretical Knowledge and Practical Educational Application	2	١٤
Feedback via direct questions	Lecture & Discussion	The Transmission of Learning Effect, the Importance of Studying the Transmission of	Theoretical Knowledge and Practical Educational Application	2	١٥

		Learning Impact, How to Benefit from The process of transition in the process of learning and teaching			
Feedback via direct questions	Lecture, Discussion and Dialogue	Feedback The concept of feedback, the importance of Feedback Study	Theoretical Knowledge and Practical Educational Application	2	١٦
Feedback via direct questions	Lecture, Discussion and Dialogue	Types of Feedback, Applications of Feedback	Theoretical Knowledge and Practical Educational Application	2	١٧
Feedback via direct questions	Lecture, Discussion and Dialogue	Thinking, the meaning of thinking, types of thinking	Theoretical Knowledge and Practical Educational Application	2	١٨
Feedback via direct questions	Lecture, Discussion and Dialogue	Ways to stimulate and develop thinking, levels of thinking	Theoretical Knowledge and Practical Educational Application	2	١٩
Feedback via direct questions	Lecture, Discussion and Dialogue	Learning Theories (Relational Theory) Concepts Basic and Educational Applications	Theoretical Knowledge and Practical Educational Application	2	٢٠
Feedback via direct questions	Brainstorming Techniques,	Theoretical Clairvoyance Educational	Theoretical Knowledge and	2	٢١

	Discussion and Lecture	Applications of Theory	Practical Educational Application		
Feedback via direct questions	Monthly exam	Theory of Observational Learning (Pandora) Applications Pedagogical theory	Theoretical Knowledge and Practical Educational Application	2	٢٢
Feedback via direct questions	Discussion and Dialogue	Conceptualism, its importance, nature	Theoretical Knowledge and Practical Educational Application	2	٢٣
Feedback via direct questions	Discussion and Dialogue	Mainstreaming the concept, learning the concept	Theoretical Knowledge and Practical Educational Application	2	٢٤
Feedback via direct questions	Discussion and Dialogue	Individual Differences, Their Meaning, and Their Impact on Learning	Theoretical Knowledge and Practical Educational Application	2	٢٥
Feedback via direct questions	Discussion and Dialogue	How to Consider Differences in Teaching, Differences Individuality in Learning Styles	Theoretical Knowledge and Practical Educational Application	2	٢٦
Feedback via direct questions	Discussion and Dialogue	Individual Differences in Thinking Styles, Control Cerebral	Theoretical Knowledge and Practical Educational Application	2	٢٧
Feedback via direct questions	Discussion and Dialogue	Definition of emotions, the importance of	Theoretical Knowledge and	2	٢٨

		teaching them to the side Educational	Practical Educational Application		
Feedback via direct questions	Discussion and Dialogue	Factors that influence emotions, interpretation of emotions	Theoretical Knowledge and Practical Educational Application	2	٢٩
By evaluating a practical session	Discussion and Dialogue	Understanding Mental Health and Factors in it	Theoretical Knowledge and Practical Educational Application	2	٣٠

11.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
Written Testing
Assignment and Class Activities
- Assignments and applications at the end of each stage.
- Discussions with students.

	12.Learning and Teaching Resources
1. Fundamentals of Educational Psychology, Touq Adas and Abdul Rahman Adas (1983). 2. Learning and Thinking Styles, Ismail Ibrahim Ali, and Wissam Tawfiq Al-Mashhadani (2014)	**Required textbooks (methodology if available)**
	Main References (Sources)
Educational Psychology. Fadel Arzjawi, Hamed Zahran, Mental Health	**Recommended books and references (scientific journals, reports...)**
Psychology Library - Important Books in Psychology and Special Education - **Telegram**	**Electronic References, Websites**

Course Description Form

1. Course Name
Fundamentals of Education
2. Course Code
CS105
3. Semester/Year
annual
4. Date of preparation of this description
2024/2025
5. Available Forms of Attendance
Mandatory
6. Number of Hours (Total) / Number of Credits (Total)
30 Hours / 2 Units
7. Course administrator name (if more than one name mentioned)
Name: Assoc. Prof. Dr. Thuraya Ahmed Khalis Email: thurayaa@uohamdaniya.edu.iq
8. Course Objectives

Course Objectives	**Increasing the student's understanding of the educational and social reality throughout the ages, realizing the educational process in its most necessary ways, and understanding the educational theories of various peoples, ancient and modern.**

9. Teaching and Learning Strategies

Strategy	**1. The student must possess the knowledge and information that helps to achieve adaptation and compatibility, as well as psychological adaptation to solve life and daily problems.** **2- The student should be familiar with the meaning of the foundations of education, its goals and theories.** **3- Understanding the basic principles of the foundations of education and enabling the student to apply it in life** **4- The student should be familiar with the historical basis of education and understand the main ideas put forward by scientists and intellectuals.** **5. Provide the student with sufficient information and knowledge to enable him to analyze and evaluate them.** **6- The student should be familiar with the meaning of intellectual development and how to achieve scientific gains.** **1- Developing the student's skill towards increasing the skill of research and academic achievement** **2. Developing the student's skill towards increasing the effectiveness of academic achievement** **3- Developing the student's skill towards increasing interaction with others** **4. Developing the student's skill towards increasing the understanding of the foundations and principles of general education in the past and present.**

10.Course Structure

Week	Hours	Required Learning Outcomes	Unit Name or Subject	Learning method	Evaluation Method

١	1	The meaning of education and its objectives are necessary	The meaning of education and its objectives are necessary	Dialogue and discussion	Oral and written testing
٢	1	Theories, Fields	Theories, Fields	Dialogue and discussion	Oral and written testing
٣	1	The Historical Basis of Education	The Historical Basis of Education	Dialogue and discussion	Oral and written testing
٤	1	Ancient Education	The Historical Basis of Education	Dialogue and discussion	Oral and written testing
٥	1	Chinese Education	The Historical Basis of Education	Dialogue and discussion	Oral and written testing
٦	1	Greek Education	The Historical Basis of Education	Dialogue and discussion	Oral and written testing
٧	1	Medieval Breeding	The Historical Basis of Education	Dialogue and discussion	Oral and written testing
٨	1	Arabic Education Before Islam and After Islam	The Historical Basis of Education	Dialogue and discussion	Oral and written testing
٩	1	Modern Education	The Historical Basis of Education	Dialogue and discussion	Oral and written testing
١٠	1	The relationship between education and society	The Social Basis of Education	Dialogue and discussion	Oral and written testing
١١	1	The relationship between the individual and the environment	The Social Basis of Education	Dialogue and discussion	Oral and written testing

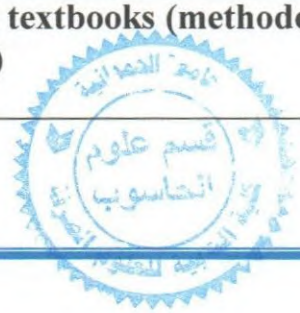
١٢	1	Moral Education	The Social Basis of Education	Dialogue and discussion	Oral and written testing
١٣	1	Family Education,	The Social Basis of Education	Dialogue and discussion	Oral and written testing
١٤	1	National Education,	The Social Basis of Education	Dialogue and discussion	Oral and written testing
١٥	1	Health Education	The Social Basis of Education	Dialogue and discussion	Oral and written testing
١٦	1	Education and its impact on economic development	The Economic Basis of Education	Dialogue and discussion	Oral and written testing
١٧	1	and exploitation of natural resources	The Economic Basis of Education	Dialogue and discussion	Oral and written testing
١٨	1	Education and Methodology in Research	The Scientific Basis of Education	Dialogue and discussion	Oral and written testing
١٩	1	National and Social Foundations	National and Social Foundations	Dialogue and discussion	Oral and written testing
٢٠	1	Education in the Islamic Perspective	Education in the Islamic Perspective	Dialogue and discussion	Oral and written testing
٢١	1	Comprehensive School	Educational Renewal in Iraq	Dialogue and discussion	Oral and written testing
٢٢	1	Systematic Education	Educational Renewal in Iraq	Dialogue and discussion	Oral and written testing
٢٣	1	Schools of Excellence Acceleration	Educational Renewal in Iraq	Dialogue and discussion	Oral and written testing
٢٤	1	The individual accepts the primitive environment	Primitive Education	Dialogue and discussion	Oral and written testing

		and how the education itself is woven			
٢٥	1	The individual has a specific social need.	Social Education	Dialogue and discussion	Oral and written testing
٢٦	1	Finding the Relationship of Harmony between Civilizations	Education throughout history	Dialogue and discussion	Oral and written testing
٢٧	1	I mean symmetry and consistency in thinking and acting according to our religion	Islamic Education	Dialogue and discussion	Oral and written testing
٢٨	1	I mean social control and positive control	Social control	Dialogue and discussion	Oral and written testing
٢٩	1	The practices we do during our lives are short or long.	Culture and Education	Dialogue and discussion	Oral and written testing
٣٠	1	The individual has a specific social need.	Social Education	Dialogue and discussion	Oral and written testing

11.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
Written Testing
Assignment and Class Activities
- **Assignments and applications at the end of each stage.**
- **Discussions with students.**

12.Learning and Teaching Resources	
Required textbooks (methodology if available)	**Foundations of Education**



Main References (Sources)	➢ **Emile D'Orkheim, Education and Society, Al-Nahda , Cairo, 1999** **Dr0 Ibrahim Nasser, Foundations of Education, Dar Al-Tali'a, Amman, 2004**
Recommended books and references (scientific journals, reports...)	➢ ➢ **Dr0Maher Al-Jaafari, Foundations of Education, Dar Ammar, Amman, 1998** ➢ **Dr. Ibrahim Othman, Education, Dar Kazma, Kuwait, 1983** ➢ **Dr. Mahmoud El-Sayed, Studies in Education and Society, Al-Nadim, Cairo, 1988**
Electronic References, Websites	**Dr. Mahmoud El-Sayed, Studies in Education and Society, Al-Nadim, Cairo, 1988**

Course Description Form

1. Course Name
Democracy and Human Rights
Course Code
CS109
Semester/Year
annual
Date of preparation of this description
2/ 2/ 2025
Available Forms of Attendance
Physical Presence
2. Number of Hours (Total) / Number of Credits (Total)
30 Hours / 2 Units
3. Course administrator name (if more than one name mentioned)
Name: Assoc. Prof. Dr. Hammam Mohammed Yaqoub **Email:** **dr.humam.slama@uohamaniya.edu.iq**

4. Course Objectives

1. Promote respect for human rights and fundamental freedoms 2. The full development of the human personality and its sense dignity. 3. Promote genuine and genuine understanding, tolerance and gen equality among all nations, indigenous peoples, ethnic, natio religious and linguistic groups. 4. Enabling all individuals to participate effectively in a free society. 5. Advance the activities of the United Nations for the maintenance peace. 6. . Access to economic, social, cultural and civil rights as well political rights, as well as individual and collective rights, consider that these rights are indivisible or indivisible.	**Course Objectives**

7. Introducing human rights in their regional and internatio dimensions and the institutions established to implement them. 8. Develop individual knowledge of the means and ways in wh human rights can be translated into social and political realities at regional and international levels. 9. Enlightening individuals about their personal rights and instill respect for others in them. 10. Developing the human personality and its prosperity in its emotio intellectual and social dimensions, and rooting its sense of dign freedom, equality, social justice and democratic practice. 11. Enhancing people's awareness of their rights in order to enable th to transform the principles of human rights into social, econon cultural and political rights, and to raise their ability to defend, maint and promote them at all levels. 12. Consolidating the bonds of friendship and solidarity among peop promoting respect for the rights of others, preserving pluralism, cult diversity and the prosperity of national cultures of all groups peoples, enriching the culture of dialogue and mutual tolerance rejecting violence and terrorism, promoting non-violence and eradication of intolerance and providing all people with strong immu against hate speech.	

5. Teaching and Learning Strategies

A1 - Increasing the student's familiarity with the foundational concepts of human rights and democracy. A2. Understanding and analyzing the general principles of human rights. A3 Acquire a culture of respect for and application of human rights A4 - Knowledge and awareness of human rights recognized by the heavenly religions and of all human beings. As a result, it is a	**Strategy**

gift from the Creator and not a gain from anyone, and no one has the right to take it. A5 - The student expresses and defends these rights in his own way. A6 - Identify the phenomena and give explanations for the violation of human rights and freedoms that occur in front of the Diagnosis of gaps or gaps in the light of the available information. B1 – The student should discuss the importance of human rights. B2 – A comparison is made between human rights in Islam and other religions. B3 – Pushing the student in a critical and thinking direction. B4 - Urging the student to write reports and researches.	

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
test	Lecture	The Historical Development of the Idea of Human Rights	Learn about rights Man in Ancient Civilizations	1	١
test	Lecture	Human Rights and Monotheistic Religions	Knowledge of the student's rights Man in religions Celestial	1	٢
test	Lecture	Islamic Sharia	Knowledge of the student's rights	1	٣

			Man in Islam		
test	Lecture	The Development of Human Rights in Positive Laws	Knowledge of positive laws	1	٤
test	Lecture	Constitution of Iraq	Rights recognition The human being in the constitution Republic of Iraq 2005	1	٥
test	Lecture	International Handling of Human Rights	Knowledge of the Emergence Organizations and their role in Human rights	1	٦
test	discussion	United Nations Organization	Getting to know the United Nations	1	٧
test	Lecture	Introducing human rights	What is Human Rights	1	٨
test	Lecture	Human Rights Divisions	Student Gets Familiar with the Framework Principles and characteristics Human rights	1	٩
test	discussion	Collective Human Rights	Recognizing collective rights	1	١٠
test	Lecture	Individual Human Rights	Recognizing individual rights	1	١١

test	Lecture	Guarantees of respect for and protection of human rights	Behavioral Knowledge	1	١٢
test	Lecture	International guarantees of human rights and freedoms	Behavioral Knowledge	1	١٣
test	Lecture	Human Rights and the Phenomenon of Administrative Corruption	Behavioral Knowledge	1	١٤
test	Lecture	Causes and Factors of Administrative Corruption	Behavioral Knowledge	1	١٥
test	Lecture	Treating Corruption and the Development of Modern Administrations	Behavioral Knowledge	1	١٦
test	Lecture	Review of the vocabulary	Behavioral Knowledge	1	١٧
test	Lecture	Introducing democracy	Knowledge of Democracy Contemporary	1	١٨
test	Lecture	Components of Democracy	Knowledge of pillars And the mechanisms of democracy	1	١٩
test	Lecture	Models of democracy	Behavioral Knowledge	1	٢٠
test	discussion	How the transition to democracy is taking place	Achieving Knowledge Goals	1	٢١
test	discussion	Political system and its types	Achieving Knowledge Goals	1	٢٢

test	Lecture	Democracy and State Administration Systems	Achieving Knowledge Goals	1	٢٣
test	Lecture	Problems of Democracy	Achieving Knowledge Goals		24
test	Lecture	Federal State	Achieving Knowledge Goals	1	٢٥
test	Lecture	The Position of Islamic Thought on Democracy	Achieving Knowledge Goals	1	٢٦
test	Lecture	Pillars of Democracy- Mechanisms of Democracy	Achieving Knowledge Goals	1	٢٧
test	Lecture	The relationship between Democracy and Rights Human	Getting to know the relationship Between Democracy Human Rights	1	٢٨
test	Lecture	Assessment Exam	Achieving Knowledge Goals	1	٢٩
test		Review of the vocabulary	Achieving Knowledge Goals	1	٣٠

7. 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

1 - Oral tests

2 - Written Tests

3 - Daily Posts

4. Completion of reports and duties

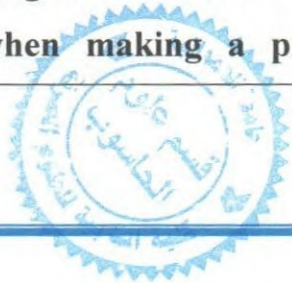
8. Learning and Teaching Resources

	Required textbooks (methodology if available)
Amer Hassan Fayyad, Methodological Introduction to Public Opinion and Rights Al-Insan, Dar Zahran Publishing and ,Distribution, Amman - Jordan 2010 . Alaa al-Din Kadhim, Human Rights and Academic Freedoms in Higher Education, Kirkuk, 2011. Faisal Shatnawi – Human Rights and International Humanitarian Law, Al-Hamid Publishing and Distribution House and Library, Amman, Jordan, 1999. United Nations Documents of 1985, Final Document of the Vienna Conference For the year 1978	**Main References (Sources)**
Iman Mohamed Hassan, The Global and Regional Development of the Concept of Rights Human Rights and its Implications for Human Rights Organizations, Anhrine Al Arabiya NGOs, 2006. Khaled Ismail Ali Ghoneim, Human Rights in Islam, University Michigan 2004.	**Recommended books and references (scientific journals, reports...)**

Najm Abboud Mahdi, Principles of Human Rights, Dar Al-Kutub Al-Ilmiyyah.	
UN Documents on Human Rights and Democracy, Available :On the website shttps://www.un.org/ar/sections/issuerights-depth/human	**Electronic References, Websites**

Course Description Form

1. Course Name	
English	
2. Course Code	
CS108	
3. Semester/Year	
annual	
4. Date of preparation of this description	
1/2/2025	
5. Available Forms of Attendance	
Physical Presence	
6. Number of Hours (Total) / Number of Credits (Total)	
30 Hours / 2 Units	
7. Course administrator name (if more than one name mentioned)	
Name: Eng. Othman Saleh Suleiman Email: othmansalomari1980@uohamdaniya.edu.iq	
8. Course Objectives	
• The student acquires the skill of oral communication in English. • The course aims to study the written English language and its impact on academic study. • The course aims to give the student a new background that he can benefit from when making a project or	Course Objectives



research in relation to his academic specialization	

9. Teaching and Learning Strategies

• **Knowledge and Understanding** • **To encourage students to converse in English.** • **Enrich them with as much vocabulary as possible that may be new to their ears.** • **Understand syntax using grammar.** • **Knowing the difference between English language tenses. Understand the basic principles of tense usage and some common phrases.** • **Build and discuss a full story.** • **Learn how to break down sentences and analyze them grammatically and linguistically.** • **Use grammar rules to build the rules of the language translator.**	**Strategy**

10.Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
According to point ١٠ and according to need	According to point 10 and according to need	Unit 1	Hello	1	١
According to point ١٠ and according to need	According to point 10 and according to need	Unit 1	Is, are, am, numbers, plural	1	٢
According to point ١٠	According to point 10	Unit 2	Your World	1	٣

and according to need	and according to need				
According to point ١٠ and according to need	According to point 10 and according to need	Unit 2	Countries, he, adjectives	1	٤
According to point ١٠ and according to need	According to point 10 and according to need	Unit 3	All about you	1	٥
According to point ١٠ and according to need	According to point 10 and according to need	Unit 3	Jobs, negative and questions, personal information, social expressions	1	٦
According to point ١٠ and according to need	According to point 10 and according to need	Unit 4	Family and Friends	1	٧
According to point ١٠ and according to need	According to point 10 and according to need	Unit 4	Possessive, the alphabet	1	٨
According to point ١٠ and according to need	According to point 10 and according to need	Unit 5	The way I live	1	٩
According to point ١٠ and according to need	According to point 10 and according to need	Unit 5	Present simple, sorts, food and sports, a/an, languages and nationalities, numbers and prices	1	١٠
According to point ١٠ and according to need	According to point 10 and according to need	Unit 6	Every day	1	١١

According to point ١٠ and according to need	According to point 10 and according to need	Unit 6	The time, present simple, words that go together,days of the week, always/sometimes/never	1	١٢
According to point ١٠ and according to need	According to point 10 and according to need	Unit 7	My favorites	1	١٣
According to point ١٠ and according to need	According to point 10 and according to need	Unit 7	Question words, this/that, adjectives, can I?	1	١٤
According to point ١٠ and according to need	According to point 10 and according to need	Unit 8	Where I live	1	١٥
According to point ١٠ and according to need	According to point 10 and according to need	Unit 8	Rooms and furniture, there is/are, prepositions, directions	1	١٦
According to point ١٠ and according to need	According to point 10 and according to need	Unit 9	Times Past	1	١٧
According to point ١٠ and according to need	According to point 10 and according to need	Unit 9	Saying years, was/were born, past simple, irregular verbs, have/do/go	1	١٨
According to point ١٠ and according to need	According to point 10 and according to need	Unit 10	We had a great time	1	١٩
According to point ١٠ and	According to point 10 and	Unit 10	Past simple- regular and irregular questions and	1	٢٠

according to need	according to need		negatives , sport and leisure,		
According to point ١٠ and according to need	According to point 10 and according to need	Unit 11	I can do that	1	٢١
According to point ١٠ and according to need	According to point 10 and according to need	Unit 11	Can/can't, adverb, adjective +noun, every day problems	1	٢٢
According to point ١٠ and according to need	According to point 10 and according to need	Unit 12	Please and thank you	1	٢٣
According to point ١٠ and according to need	According to point 10 and according to need	Unit 12	I'd like, some and anym In a restaurant, signs all around	1	٢٤
According to point ١٠ and according to need	According to point 10 and according to need	Unit 13	Here and Now	1	٢٥
According to point ١٠ and according to need	According to point 10 and according to need	Unit 13	Colors and clothes, present continuous, opposite verbs, What's the matter?	1	٢٦
According to point ١٠ and according to need	According to point 10 and according to need	Unit 14	It's time to go	1	٢٧
According to point ١٠ and according to need	According to point 10 and according to need	Unit 14	Future plans, grammar revision, vocabulary revision, Social expressions	1	٢٨

According to point ١٠ and according to need	According to point 10 and according to need	Examples		1	٢٩
According to point 10 and according to need	According to point 10 and according to need	Examples		1	٣٠

11.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

- **Monthly exams + daily exams + class/theoretical participations and discussions**
- **Daily assessment of actual in-class participation + home/work assignment**
- **Grade for daily attendance**

	12.Learning and Teaching Resources
-New Headway Plus Beginner Student's Book by John and Liz Soars -New Headway Plus Beginner Workbook with Key by John and Liz Soars	**Required textbooks (methodology if available)**
	Main References (Sources)
	Recommended books and references (scientific journals, reports...)
	Electronic References, Websites

Course Description Form

1. Course Name
Arabic Language
2. Course Code
CS107
3. Semester/Year
annual
4. Date of preparation of this description
2025 /2/ 14
5. Available Forms of Attendance
Weekly face-to-face education
6. Number of Hours (Total) / Number of Credits (Total)
30 Hours / 2 Units
7. Course administrator name (if more than one name mentioned)
Name: M.M. Lubna Yaarab Abdel Razzaq Email: loubna.y.alhealy@uohamdaniya.edu.iq
8. Course Objectives

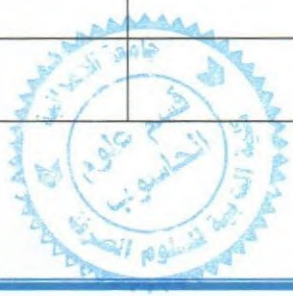
Reminding the student of the general Arabic grammar **b. The student should learn the rules of drafting in a clear manner.** **C. The student should learn to write a text that is controlled by the form and punctuation.**	**Course Objectives**

d. The student should be familiar with a small part or a general overview of his Arab literary heritage. **e. The student should remain connected to his mother tongue (Arabic), which keeps him connected to his authentic identity.**	

9. Teaching and Learning Strategies	
1- The student should be familiar with the sections of speech. **2- The student should divide the grammatical sentence into nominal and verbal.** **3- The student should differentiate between poetry and prose.** **4- The student should be exposed to the most important sources of literature.** **5- The student should distinguish between the cutting and connecting hams.** **6- He should enumerate the copies of the beginner and the informant.** **7- The student should remember the punctuation marks and the places where they are used.** **Proper reading of prose and poetic texts.** **Clear articulation of nominal and verb sentences.** **Memorizing the keys to the seven pendants that represent the finest written in the literary heritage.** **Adjust text in shape and punctuation.** **Formulating representative sentences that are controlled by form and meaning.**	**Strategy**

10.Course Structure					
Evaluation Method	**Learning method**	**Unit Name or Subject**	**Required Learning Outcomes**	**Hours**	**Week**
		Speech sections, .noun signs		1	١
		The Meaning of Literature and Its .Eras		1	٢
		Hamza al-Qata and Hamzat al-Wasl define them and their places of use in nouns, verbs, and .letters		1	٣
		Verb signs, letter marks, types of sentences, their pillars, and their .expressions		1	٤
		The concept of poetry, its sections, sources, purposes, and some representative .poetic verses		1	٥
		Punctuation: their definition, where they are used, and .an applied example		1	٦
		Dividing the verb according to its tense, and expressing the		1	٧

		present tense: its verbs and phrases, tools, meaning, and .expression			
		The meaning of prose, its sections, and some of its .types		1	٨
		Kan and its sisters: its meanings and sections in terms of behavior, types of experience and .expression		1	٩
		Ann and her sisters: their meanings and expressions		1	١٠
					١١
					١٢
					١٣
					١٤
					١٥
					١٦
					١٧
					١٨



					١٩
					٢٠
					٢١
					٢٢
					٢٣
					٢٤
					٢٥
					٢٦
					٢٧
					٢٨
					٢٩
					30

11.Course Evaluation

Distributing the grade out of ١٠٠ according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports... etc

1- **Quiz.**
2- **Daily, quarterly and annual exams.**
3- **Duties.**

12.Learning and Teaching Resources	
Required textbooks (methodology if available)	**Alfiyah Ibn Malik, Explanation of Ibn Aqeel / Al-Amali in Islamic Literature by Ibtisam Marhoon Al-Saffar.**

The Clear Grammar of Ali Al-Jarem / The Adequate Grammar of Abbas Hassan / Poetry and the Arab Days in the Pre-Islamic Era by Dr. Afif Abdel Rahman / The Pre-Islamic Era by Shawqi Deif. Abdulmajeed Al-Nuaimi's clear dictation.	**Main References (Sources)**
The Seven Commentaries by Al-Zuzni / The History of Arabic Literature by Shawqi Deif.	**Recommended books and references (scientific journals, reports...)**
	Electronic References, Websites

Course Description Form

1. Course Name
Data structures and algorithms
Course Code
CS200
Semester/Year
annual
Date of preparation of this description
15-9-2024
Available Forms of Attendance
Physical Presence
2. Number of Hours (Total) / Number of Credits (Total)
120 Hours (60 Theoretical + 60 Practical) / 6 Units
3. Course administrator name (if more than one name mentioned)
Name: Maryam Rahim Mirza **Email: mariam.mirza@uohamdaniya.edu.iq**
4. Course Objectives

1–Introduce students to the principles of data infrastructures **2. How to program different data structures using the C++ programming language** **3. Prepare students to be programmers and familiar with data structures** **4.Design and implementation of programs for various requirements**	**Course Objectives**
5. Teaching and Learning Strategies	
This course aims to introduce students to the principles and methods of storing data in computers, programming these	**Strategy**

graphical structures, and how to use the programming language C++ in solving problems, designing systems, and preparing students to be professional programmers to design and implement programs for various requirements. -The skill of choosing the appropriate graphical structure for the type of data to be stored and dealt with and the most efficient programming method to deal with and not go to lengthy solutions --The skill of diversification using the programming tools of the language used in this course.	

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
According to point ١٠ and according to need	According to point 10 and according to need	Introduction, Benefits, Types of data structure. How to select the suitable data structure.	Importance of DS Types of DS	٤	١
According to point ١٠ and according to need	According to point 10 and according to need	Representation element in one and two-dimensional array.	1-D and 2-D arrays	٤	٢
According to point ١٠ and according to need	According to point 10 and according to need	Representation element in array with structures.	Using arrays with structure	٤	٣
According to point ١٠ and according to need	According to point 10 and according to need	Stack: definition, operations, and algorithms	Stack algorithm	٤	٤
According to point ١٠ and	According to point 10 and	Array representation of stack record	Implementing stack using arrays	٤	٥

according to need	according to need	implementation of stack			
According to point ١٠ and according to need	According to point 10 and according to need	Queue: definition, operations, and algorithms	Queue algorithm	٤	٦
According to point ١٠ and according to need	According to point 10 and according to need	Array representation of Queue	Implementing queue using arrays	٤	٧
According to point ١٠ and according to need	According to point 10 and according to need	record implementation of Queue	Implementing queue using arrays	٤	٨
According to point ١٠ and according to need	According to point 10 and according to need	Circular queue: definition, operations, and algorithms	Circular queue algorithm	٤	٩
According to point ١٠ and according to need	According to point 10 and according to need	Array representation of Circular Queue	Implementing circular queue using arrays	٤	١٠
According to point ١٠ and according to need	According to point 10 and according to need	record implementation of Circular Queue	Implementing circular queue using arrays	٤	١١
According to point ١٠ and according to need	According to point 10 and according to need	Linked structures: sequential & dynamic Storage Allocation	Linked list	٤	١٢
According to point ١٠ and according to need	According to point 10 and according to need	Linked list: definition, operations, and algorithms	Linked List algorithm	٤	١٣

According to point ١٠ and according to need	According to point 10 and according to need	Linked Stack & Queue. Double linked list	Implementing stack and queue using linked list, Compare between linked list, double linked list and circular linked list	٤	١٤
According to point ١٠ and according to need	According to point 10 and according to need	Different examples & programs for all data structure	Examples	٤	١٥
According to point ١٠ and according to need	According to point 10 and according to need	Graph: -Directed graph -Undirected graph	Graph	٤	١٦
According to point ١٠ and according to need	According to point 10 and according to need	Graph representation: -adjacency matrix -adjacency lists	Graph representation	٤	١٧
According to point ١٠ and according to need	According to point 10 and according to need	Trees: tree structure and mathematical concepts	Trees	٤	١٨
According to point ١٠ and according to need	According to point 10 and according to need	Types of trees	Types of trees	٤	١٩
According to point ١٠ and according to need	According to point 10 and according to need	Tree traversing	Types of trees traversing	٤	٢٠
According to point ١٠ and	According to point 10 and	Tree representation: -General tree	Tree representation: -General tree	٤	٢١

according to need	according to need	-Binary tree			
According to point ١٠ and according to need	According to point 10 and according to need	Tree representation: -General tree -Binary tree	Tree representation: Binary tree	٤	٢٢
According to point ١٠ and according to need	According to point 10 and according to need	tree transformations	tree transformations	٤	٢٣
According to point ١٠ and according to need	According to point 10 and according to need	Representation of arithmetic expression using binary tree		٤	٢٤
According to point ١٠ and according to need	According to point 10 and according to need	Binary search tree	Binary search tree	٤	٢٥
According to point ١٠ and according to need	According to point 10 and according to need	Sorting algorithms: selection, bubble, insertion, quick sort and merge	Sorting algorithms	٤	٢٦
According to point ١٠ and according to need	According to point 10 and according to need	Sorting algorithms: selection, bubble, insertion, and quick sort	Sorting algorithms	٤	٢٧
According to point ١٠ and according to need	According to point 10 and according to need	Searching algorithms: sequential & binary search	Searching algorithms: sequential search	٤	٢٨
According to point ١٠ and according to need	According to point 10 and according to need	Searching algorithms: sequential & binary search	Searching algorithms: binary search	٤	٢٩

According to point 10 and according to need	According to point 10 and according to need	Different examples & programs for all data structure	Examples	٤	٣٠

7. 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 **Oral evaluation by involving students in discussions, quizzes , computer lab tests, and also in writing monthly and quarterly exams.**	
	8. Learning and Teaching Resources
• Data Structures and Algorithms Learning C++	**Required textbooks (methodology if (available**
	Main References (Sources)
	Recommended books and references (scientific journals, reports...)
	Electronic References, Websites

Course Description Form

1. Course Name:
Object-Oriented Programming
2. Course Code:
CS201
3. Semester / Year:
Annual
4. Description Preparation Date:
02/02/2025
5. Available Attendance Forms:
Weekly in-person attendance / Theoretical and Practical
6. Number of Credit Hours (Total) / Number of Units (Total)
120 Hours (60 Theoretical + 60 Practical) / 6 Units
7. Course administrator's name (mention all, if more than one name)
Asst. Prof. Mohammed Alaa Aldeen Ahmed (Email: mkashmola@uohamdaniya.edu.iq) Asst .Lecturer Mohammed Abdulsattar Abdulghani(Email:mohmd.a.sattar@uohamdaniya.edu.iq)

8. Course Objectives	
Course Objectives	• Introduce students to the fundamental concepts of object-oriented programming, such as objects, classes, inheritance, and composition, and demonstrate how to apply them in writing code. • Develop students' ability to analyze programming problems and design effective solutions using object-oriented techniques, including creating objects and defining their relationships. • Enable students to read, understand, and maintain object-oriented code, with the ability to make modifications and fix errors as needed. • Enhance programming and design skills through practical projects and real-world applications that reinforce the theoretical concepts learned.

9. Teaching and Learning Strategies	
Strategy	This course relies on a combination of theoretical lectures and practical sessions to strengthen concept understanding. Presentations, programming

	examples, and class discussions are used to explain theories and fundamental concepts. Laboratory sessions are dedicated to exercises and project development, allowing students to apply what they have learned in practice. Students are encouraged to work in groups and solve problems to enhance critical thinking and teamwork skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical + 2 Practical	Understand programming paradigms	Programming Paradigms Non structured (unstructured) Programming , Procedural Oriented Programming Modular Programming	Lecture + Lab /	Assignments
2,3	2 Theoretical + 2 Practical	Identify and define OOP concepts	Introduction to OOP Class notation and definition (with graphical examples) A comparison among programming paradigms Class relation types (is a , type of)	Lecture + Lab	Assignments
4,5	2 Theoretical + 2 Practical	Understand abstraction and encapsulation	OOP concepts Abstraction concept and abstract data type Data hiding concept Encapsulation concept Reuse concept Class definition using Java Class body Methods (operations) within class Examples	Lecture + Lab	Quiz
6,7,8	2 Theoretical + 2 Practical	Create and use objects in Java	Creating objects Access attributes Access methods Examples Constructor and destructor methods Definition Access type Private, and public Examples	Lecture + Lab	Exercises
9,10	2 Theoretical + 2 Practical	Apply polymorphism	Polymorphism concepts first part Method Overloading Constructor Overloading Array of objects Examples	Lecture + Lab	Quiz
11,12	2 Theoretical + 2 Practical	Manipulate strings and use them in methods	Strings Declaration and Initialization Reading and printing Processing (sorting, searching,concatenating,.. etc) String as the method parameters and return values Examples	Lecture + Lab	Exercises
13	2 Theoretical	Understand inheritance	- Inheritance Inheritance types	Lecture + Lab	

	+ 2 Practical				
14,15,16	2 Theoretical + 2 Practical	Apply inheritance and abstract concepts	Constructor methods in subclass Two layers Inheritance Protected Access type Polymorphism concepts second part Method overloading (in subclass) Method overridden Abstract Method Abstract Class Definition Examples	Lecture + Lab	Midterm Exam
17,18	2 Theoretical + 2 Practical	Implement interfaces	Multiple Inheritance concepts Interface definition Examples	Lecture + Lab	Project Work
19,20	2 Theoretical + 2 Practical	Differentiate static and dynamic binding	Polymorphism concepts third part Static and dynamic binding Examples	Lecture + Lab	Exercises
21,22	2 Theoretical + 2 Practical	Use static members and methods	Static class and members Static attributes Static methods Static class Examples	Lecture + Lab	
23	2 Theoretical + 2 Practical	Understand special Java keywords	- - - - Special java keywords This keyword in java Super keyword in java Final keyword in java Examples	Lecture + Lab	Quiz
24,25	2 Theoretical + 2 Practical	Use Math and Number classes	Math class and Number types class - Math methods - Number (Integer, Float,…,etc) methods - Examples	Lecture + Lab	Exercises
26,27,28	2 Theoretical + 2 Practical	Implement nested classes and packages	Nested Classes, and Other Details Nested Classes Anonymous Inner Classes Mixing Static and Non-Static Import Enums as Classes Java Packages Examples	Lecture + Lab	Project
29,30	2 Theoretical + 2 Practical	Explore additional OOP features	Other Java properties for OOP	Lecture + Lab	Final Project Presentation

11. Course Evaluation

The final grade (out of 100) is distributed according to student tasks such as daily preparation, quizzes, oral exams, monthly exams, written exams, and submitted reports. This includes daily, midterm, and final examinations.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	• Java Software Solutions, 8th Edition, J Lewis & William Lo • Introduction to Java Programming, 8th Edit Y. Daniel Liang

Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name
Database
Course Code
CS204
Semester/Year
annual
Date of preparation of this description
1/9/2024
Available Forms of Attendance
Attendance is mandatory for students according to the university's rules. (Theoretical and practical)
2. Number of Hours (Total) / Number of Credits (Total)
120 Hours (60 Theoretical + 60 Practical) / 6 Units
3. Course administrator name (if more than one name mentioned)
Name: Dhafer Sabah Yassin Email: dhafer.sabah@uohamdaniya.edu.iq
4. Course Objectives

This course aims to introduce the basic concepts needed to understand the methods used in data analysis, then move on to database design, practice creating ERD component relationship diagrams, using database management systems, and SQL. Educational outcomes. ➢ Understand how data analysis works. ➢ Understand how to design RD schemas . ➢ Practice the use of relational algebra and normalization relationships.	Course Objectives

➢ Understand the mechanism of database design. ➢ Practice using SQL instructions. Understand and use the data processing language in terms of querying data, updating and managing a database. ➢ Linking databases with visual programmir . ➢ Analyzing systems and building a relationa database system according to key fields. ➢ The study of database design from a realis and logical point of view, database modeling using relational, hierarchical o network databases.	

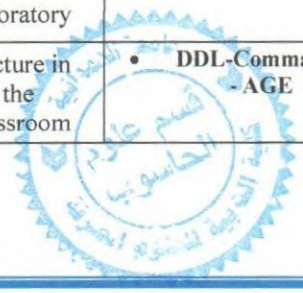
5. Teaching and Learning Strategies

➢ Upon completion of the course, the student will be able to... ➢ What is a database. ➢ What are database management systems, file system, relational model, relational entity model, simplification of single table and building tables according to relational model, what is the advanced data model and others... ➢ Analyze and identify problems in the file system and relational model, relational entity model . ➢ Able to design and implement, relational model, relational entity model, applicant data model . ➢ Ability to define the rules and conditions of work required in any system. ➢ The ability to design and implement any database for any system using different model methods. ➢ Ability to improve legacy database systems.	Strategy

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Exams and Discussion	Lecture in the classroom and the laboratory	**INTRODUCTION TO DATABASE**	• **Introduction to Databases** **- Definition** **- Importance of the database** **- Example of Databases systems:**	٤	١
Exams and Discussion	Lecture in the classroom and the laboratory	**File-Based Approach**	• **Understanding Traditional File-Based Systems** **- File-Based Approach** **- Example (Dream Home)** **- Limitations of the File-Based Approach**	٤	٢
Exams and Discussion	Lecture in the classroom and the laboratory	**Database Approach**	• **Why Databases?** • Database Approach - Database • Database Management System (DBMS) • Application Programs • Components of the DBMS Environment • Role and Advantages of the DBMS • Types of Databases	٤	٣
Exams and Discussion	Lecture in the classroom and the laboratory	**INTRODUCTION TO ORACLE DATABASE**	• **Why using oracle Databases?** • **What is Oracle?** • **Oracle Definition** • **RDBMS** • **Properties of RDBMS** • **Features of Oracle** • **Oracle Database Objects** • **Oracle versions**	٤	٤
Exams and Discussion	Lecture in the classroom and the laboratory	**How To Install Oracle**	• **Practical- How To Install Oracle**	٤	٥
Exams and Discussion	Lecture in the classroom and the laboratory	**How to Login to Oracle**	• **How to Login to Oracle**	٤	٦
Exams and Discussion	Lecture in the classroom and the laboratory	**Creating User**	• **DDL Command (CREATE USER)How to Create User** • **Syntax of creating user**	٤	٧
Exams and Discussion	Lecture in the classroom and the laboratory	**DCL commands with Privileges**	• **DCL commands** **- Grant** **- Revoke** **Types Of Privileges :1. System Privileges2. User Privileges3. Object Privileges4. Roles Privileges**	٤	٨
Exams and Discussion	Lecture in the classroom and the laboratory	**Data Types**	• **Understanding Data Types** • **ALPHANUMERIC DATA** • **NUMERIC DATA (all variable length)** • **DATE AND TIME**	٤	٩

			• LARGE OBJECT DATA TYPES		
Exams and Discussion	Lecture in the classroom	DDL- CREATE TABLE Statement	• DDL-Create Table Statement - Create Table (Prerequisites) - Create Table (Simple Syntax) - Heap Table	٤	١٠
Exams and Discussion	Lecture in the classroom and the laboratory	TABLE CONSTRAINT- Primary Key Constraint	• TABLE CONSTRAINT -Types of constraint - Primary Key Constraint.	٤	١١
Exams and Discussion	Lecture in the classroom and the laboratory	TABLE CONSTRAINT - Foreign Key constraint	• What is Foreign KEY CONSTRAINT? • How to add Foreign key constraints?-- Using a CREATE TABLE statement .- Using a ALTER TABLE statement.- What is ERD?- What is a foreign key with Cascade DELETE in Oracle?- What is a foreign key with "Set NULL on Delete" in Oracle?- How Enable and Disable a Foreign key constraints?- How Drop a Foreign key constraints?	٤	١٢
Exams and Discussion	Lecture in the classroom and the laboratory	TABLE CONSTRAINT - Unique constraint	• TABLE CONSTRAINT - Unique constraintWhat Unique CONSTRAINT? How to add Unique constraints?-- Using a CREATE TABLE statement .- Using a ALTER TABLE statement.- How Enable and Disable a Unique constraints?- How Drop a Unique constraints?	٤	١٣
Exams and Discussion	Lecture in the classroom and the laboratory	TABLE CONSTRAINT - Check constraint	• ABLE CONSTRAINT - Check constraint- What Check CONSTRAINT? How to add Check constraints?-- Using a CREATE TABLE statement .- Using a ALTER TABLE statement.- How Enable and Disable a Check constraints?- How Drop a Check constraints?	٤	١٤
Exams and Discussion	Lecture in the classroom and the laboratory	TABLE CONSTRAINT - NOT NULL Constraint	• TABLE CONSTRAINT - NOT NULL Constraint & Default ConstraintTABLE CONSTRAINT - NOT NULL constraint- What NOT NULL CONSTRAINT? How to add NOT NULL constraints?-- Using a CREATE TABLE statement .- Using a ALTER TABLE statement.- How Enable and Disable a Check constraints?	٤	١٥
Exams and Discussion	Lecture in the classroom and the laboratory	TABLE CONSTRAINT - Default Constraint	• TABLE CONSTRAINT - Default constraint- What Default CONSTRAINT? How to add Default constraints?-- Using a CREATE TABLE statement .- Using a ALTER TABLE statement.	٤	١٦
Exams and Discussion	Lecture in the classroom	• DDL-Commands - AGE	• DDL- ALTER Command:- Adding new columns.- Modify an existing column(changing datatype and	٤	١٧



	and the laboratory		size).- Drop a column.- Add ,Drop ,Enable ,Disable a constraint.		
Exams and Discussion	Lecture in the classroom and the laboratory	• DDL-Commands – RENAME - TRUNCATE - DROP	• DDL- RENAME Command.DDL- TRUNCATE Command.DDL- DROP Command.	٤	١٨
Exams and Discussion	Lecture in the classroom and the laboratory	DML-commands - INSERT Statment	• Data Manipulation LanguageDML commands - INSERT Statement	٤	١٩
Exams and Discussion	Lecture in the classroom and the laboratory	DML-commands - UPDATE -DELETE	• Data Manipulation LanguageDML commands - UPDATE Statement - DELETE Statement	٤	٢٠
Exams and Discussion	Lecture in the classroom and the laboratory	TCL-Transaction Control Language	• TCL-Transaction Control Language- TCL commands:- COMMIT- SAVEPOINT- ROLLBACK- Examples	٤	٢١
Exams and Discussion	Lecture in the classroom and the laboratory	Database Normalization	• Overview of Database Normalization- Database Constraints- DatabaseRelationships -Relationship Types	٤	٢٢
Exams and Discussion	Lecture in the classroom and the laboratory	Database Normalization	• -Database Normalization - Normalization Overview - First Normal form - Second Normal Form	٤	٢٣
Exams and Discussion	Lecture in the classroom	Data Retrieval Language - (SELECT Statement)	• Data Retrieval LanguageDRL commandSELECT Statement.- The Full syntax.- HR Schema.- Displaying all Columns- Formatting Columns in SQL-Plus.- Selecting Specific Columns of a Table.	٤	٢٤
Exams and Discussion	Lecture in the classroom and the laboratory	Data Retrieval Language - (SELECT Statement)	• Data Retrieval LanguageDRL commandSELECT Statement.- The Full syntax.- HR Schema.- Where Clause Operator. - Basic comparison operators - IN operator - BETWEEN operator - LIKE operator - IS NULL operator - AND & OR operators	٤	٢٥
Exams and Discussion	Lecture in the classroom and the laboratory	Data Retrieval Language - (SELECT Statement)	• Data Retrieval LanguageDRL commandSELECT Statement.- The Full syntax.- HR Schema.- ORDER BY Clause Operator. - expr|position| c_alias } - ASC|DESC - NULLS FIRST | NULLS LAST	٤	٢٦
Exams and Discussion	Lecture in the classroom	Data Retrieval Language - (SELECT Statement)	• Data Retrieval LanguageSELECT Statement.- The Full syntax.- HR Schema.- Group By clause- Using	٤	٢٧

	and the laboratory		Aggregate Functions -UsingAggregate Functions in Queries - List of some aggregate functions - Examples of (group by) Using Aggregate Functions		
Exams and Discussion	Lecture in the classroom and the laboratory	Data Retrieval Language - (SELECT Statement)	• Data Retrieval LanguageSELECT Statement.- The Full syntax.- HR Schema.- HAVING clause - Examples of HAVING clause	٤	٢٨
Exams and Discussion	Lecture in the classroom and the laboratory	How To Generate an ERD	• How To Generate an ERD for Selected Tables in SQL Developer	٤	٢٩
Exams and Discussion	Lecture in the classroom and the laboratory	Mini Project	• How to implement Mini Project	٤	٣٠

7. 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

1- **Homework and attendance 10%**
2- **Surprise exams and exams 10%**
3- **Laboratory, practical exams and small projects 10%**
4- **Half-course exam 20%**
5- **Final Exam 50 %**

8. Learning and Teaching Resources

Required textbooks (methodology if available)

1- Database Systems, Design, Implementation, And Management By Carlos Coronel , Steven Morris And Peter Rob.
2- Database Systems A Practical Approach to Design, Implementation, and Management Sixth edition, Thomas Connolly and Carolyn Begg.
3- Database system concept, fifth edition, Abraham Silberschatz and Merry E. Koth, 2006.

Main References (Sources)

4- Database Systems, Design, Implementation, And Management By Carlos

Coronel , Steven Morris And Peter Rob.	
Database Systems A Practical Approach to Design, Implementation, and Management Sixth edition, Thomas Connolly and Carolyn Begg	**Recommended books and references (scientific (...journals, reports**
Oracle Database SQL Language Reference	**Electronic References, Websites**

Course Description Form

1. Course Name	
Numerical analysis	
Course Code	
CS203	
Semester/Year	
annual	
Date of preparation of this description	
1/9/2024	
Available Forms of Attendance	
Attendance is mandatory. (Theoretical and practical)	
2. Number of Hours (Total) / Number of Credits (Total)	
120 Hours (60 Theoretical + 60 Practical) / 6 Units	
3. Course administrator name (if more than one name mentioned)	
Name: Rasha Raad Hadi Email: rasharaad@uohamdaniya.edu.iq	
4. Course Objectives	
The second stage student learns through the numerical analysis course how to calculate the errors that result from the use of iterative methods, as well as how to program algorithms that work on calculating the roots of nonlinear linear equations, as well as how to calculate integration and derivation based on the principles of numerical analysis.	Course Objectives
5. Teaching and Learning Strategies	
A1. Knowledge of numerical methods to find the solution of nonlinear equations. A2. Employing numerical analysis in specific integrations. A3. Use numerical methods to find specific integrals.	Strategy

A4- Knowledge of numerical methods to find the solution of linear equations. **A5- Concepts related to numerical programming in MATLAB** **A6- Employing MATLABS to reach numerical solutions. The student should be able to program the algorithms given in the theoretical aspect by applying them in the MATLAB language**	

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
quiz	Theoretical + Practical	Errors	The student understands the subject	2 Theoretical + 2practical	**1**
	Theoretical + Practical	Error Spread in Calculations (Multiplication and Division)		2 Theoretical + 2practical	**2**
	Theoretical + Practical	Numerical Solution of the System of Nonlinear Equations		2 Theoretical + 2practical	**3**
	Theoretical + Practical	Solid Point Method		2 Theoretical + 2practical	**4**
	Theoretical + Practical	How to accelerate the Standing Point		2 Theoretical + 2practical	**5**
	Theoretical + Practical	Method of halving the period		2 Theoretical + 2practical	**6**
	Theoretical + Practical	The Newton-Ravson method		2 Theoretical + 2practical	**7**

	Theoretical + Practical	Special cases of the Newton-Ravson method		2 Theoretical + 2practical	**8**
	Theoretical + Practical	False position method		2 Theoretical + 2practical	**9**
	Theoretical + Practical	Cutter Method		2 Theoretical + 2practical	**10**
	Theoretical + Practical	Numerical Solution of the System of Linear Equations		2 Theoretical + 2practical	**11**
	Theoretical + Practical	Systems of Linear Equations		2 Theoretical + 2practical	**12**
	Theoretical + Practical	Method of deletion for Kauss		2 Theoretical + 2practical	**13**
	Theoretical + Practical	The Kauss-Jordan Method		2 Theoretical + 2practical	**14**
	Theoretical + Practical	Kraut's trigonometric analysis method		2 Theoretical + 2practical	**15**
	Theoretical + Practical	Doult triangular analysis method		2 Theoretical + 2practical	**16**
	Theoretical + Practical	Jacoby Method		2 Theoretical + 2practical	**17**
	Theoretical + Practical	The Kauss-Seidl method		2 Theoretical	**18**

				+ 2practical	
	Theoretical + Practical	Relaxation method		2 Theoretical + 2practical	**19**
	Theoretical + Practical	Registration		2 Theoretical + 2practical	**20**
	Theoretical + Practical	Reverse Insertion Method		2 Theoretical + 2practical	**21**
	Theoretical + Practical	Progressive and regressive spreads		2 Theoretical + 2practical	**22**
	Theoretical + Practical	Relative Differences		2 Theoretical + 2practical	**23**
	Theoretical + Practical	Numerical Integration		2 Theoretical + 2practical	**24**
	Theoretical + Practical	The Simpsons Third Method and the Simpsons Eighths Third Method		2 Theoretical + 2practical	**25**
	Theoretical + Practical	Paul's Method and the Weddell Method		2 Theoretical + 2practical	**26**
	Theoretical + Practical	Rumbrick Method Algorithm		2 Theoretical + 2practical	**27**
	Theoretical + Practical	The Taylor Method and the Euler Method		2 Theoretical	**28**

				+ 2practical	
	Theoretical + Practical	Range-Cota Method		2 Theoretical + 2practical	**29**
	Theoretical + Practical	Adam-Moulten Method		2 Theoretical + 2practical	**30**

7. Course Evaluation

Distributing the grade out of ١٠٠ according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports... etc

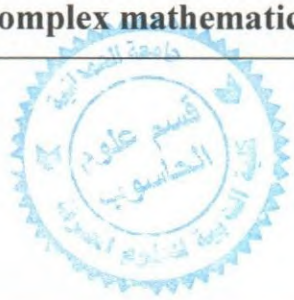
1- **Quiz.**
2- **Daily, quarterly and annual exams.**
3- **Seminars.**
4- **Duties.**

	8. Learning and Teaching Resources
	Required textbooks (methodology if available)
1- William Stalling," cryptography and network security principles and practice " , 6th ed. , 2015, Pearson.	**Main References (Sources)**
	Recommended books and references (scientific journals, reports...)
https://www.pluralsight.com/courses/learn-program-cplusplus	**Electronic References, Websites**

Course Description Form

1. Course Name
Computational Theory
Course Code
CS205
Semester/Year
annual
Date of preparation of this description
1/9/2024
Available Forms of Attendance
Weekly theoretical only
2. Number of Hours (Total) / Number of Credits (Total)
90 Hours/ 6 Units
3. Course administrator name (if more than one name mentioned)
Name: Dr.Nora Hashem Mohammed **Email: : (noora@uohamdaniya.edu.iq)**
4. Course Objectives

• **The main purpose of the course is to understand and design the foundation of a programming language compiler by achieving the objectives mentioned below:** • **Through the Computational Theory course, the student learns how to deal with the different devices that make up the computer.** • **And how to interpret and solve simple and complex mathematical problems.**	**Course Objectives**



• Familiarize yourself with machine algorithms in the process of generating different languages to solve related problems. • Computer Theory, Computational Theory, orComputational Theory in computer science studies the possibility of solving problems posed by a computer with high efficiency and examines what a computer can calculate now and can be developed in the future. • Dealing with mathematical models that help solve simple and complex problems within the context of the machine's operation. • Effective problem solving through a computational model using an algorithm. • The basic capabilities and limitations of computers in the theory of self-operation and languages, computer theory, and the theory of computational complexity. • Creating models of all kinds in the field of computer science in which mathematics and logic are used.	

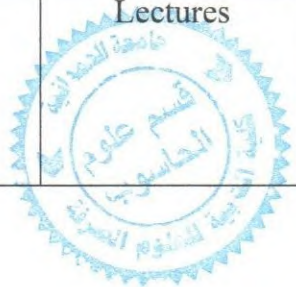
5. Teaching and Learning Strategies

○ Introduction to computational theory. ○ Introduce students to the importance of computational theory. ○ Distinguish between types of automation systems and the way standard languages are found. ○ Develop standard language concepts and generate standard grammar.	Strategy

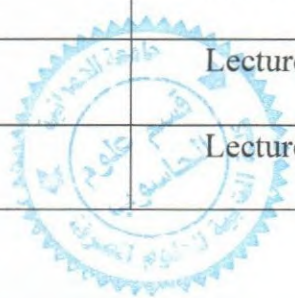
• **Fully prepare the student and prepare him for the translator's material.** • **Presenting the lecture in detail and sequentially and linking it to examples from reality to form a clear mental image in the student.** • **The ability to summarize the class.** • **The ability to read and understand the class.** • **Ability to discuss within the classroom.** • **The ability to solve the exercises of the class.**	

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
quiz	Lectures	Introduction Computability theory	Give an idea of the basics and mathematical concepts and define standard rules	3 Theoretical	1
	Lectures	Automata theory	Give an idea of the basics and mathematical concepts and define standard rules	3 Theoretical	2
	Lectures	Language theory	Give an idea of the basics and mathematical concepts and define standard rules	3 Theoretical	3
	Lectures	Grammar	Give an idea of the basics and mathematical concepts and	3 Theoretical	4



			define standard rules		
	Lectures	Derivation		3 Theoretical	**5**
	Lectures	Types of grammar -Phrase structure grammar (PSG)		3 Theoretical	**6**
	Lectures	Context sensitive grammar(CSG)		3 Theoretical	**7**
	Lectures	Context free grammar(CFG)		3 Theoretical	**8**
	Lectures	Regular grammar (RG)		3 Theoretical	**9**
	Lectures	Regular grammar (RG) examples		3 Theoretical	**10**
	Lectures	Ambiguity		3 Theoretical	**11**
	Lectures	Automata Finite automata		3 Theoretical	**12**
	Lectures	Deterministic FA (DFA)		3 Theoretical	**13**
	Lectures	Non-deterministic FA (NFA)		3 Theoretical	**14**
	Lectures	Non-deterministic FA (NFA)		3 Theoretical	**15**
	Lectures	Converting from (NDFA) to (DFA)		3 Theoretical	**16**
		Mid-year Break			١٧
	Lectures	Converting from (NDFA) to (DFA) examples		3 Theoretical	**18**
	Lectures	Finite automata with Transition		3 Theoretical	**19**
	Lectures	Finite automata with transition examples		3 Theoretical	**20**
	Lectures	Regular Expression		3 Theoretical	**21**
	Lectures	Chomsky normal form (CNF)		3 Theoretical	**22**
	Lectures	Chomsky normal form (CNF) examples		3 Theoretical	**23**



	Lectures	Turing Machines (TM)		3 Theoretical	**24**
	Lectures	Push down automata (PDA)		3 Theoretical	**25**
	Lectures	Stream Cipher		3 Theoretical	**26**
	Lectures	Push down automata (PDA) examples		3 Theoretical	**27**
	Lectures	- decidability & reducibility		3 Theoretical	**28**
	Lectures	decidability & reducibility examples		3 Theoretical	**29**
	Lectures	Pumping Lemma		3 Theoretical	**30**

7. 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

1- **Homework.**
2- **Surprise daily exams.**
3- **Monthly exams.**
4- **Final exams of the course.**
5- **Continuous physical presence.**

8. Learning and Teaching Resources

Required textbooks (methodology if (available

1. Daniel L. A. Cohen (1986), Introduction to Computer Theory, Gohn-Wiley.

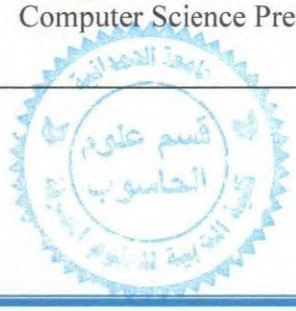
Main References (Sources)

1- Harry R. L.ewis (1981), Elemments of the Theory of Computation, Prentic-Hill.

2- M. Sipser (1996), Introduction to the Theory of Computation, Boston, PWS Pub

Recommended books and references (...scientific journals, reports)

1. R. W. Fioyed and R. Beigel (1994), The Language of Machine: An Introduction to Computability and Formal Language, Computer Science Press, Network.



https://ocw.mit.edu/courses/18-404j-theory-of-computation-fall-2020/ https://en.wikipedia.org/wiki/Theory_of_computation	**Electronic References, Websites**

Course Description Form

1. Course Name
Developmental Psychology
Course Code
CS207
Semester/Year
annual
Date of preparation of this description
2025-2024
Available Forms of Attendance
Face-to-face education
2. Number of Hours (Total) / Number of Credits (Total)
60 Hours/ 4 Units
3. Course administrator name (if more than one name mentioned)
Name: Eng. Ismail Abdel Hasso Email:
4. Course Objectives

Definition of Students:	Course Objectives
- Conceptual Psychology and General Concepts and Principles - Definition of Developmental Psychology for Maturity Development - General Principles of Growth - Factors Affecting Growth and Genetic Factors Chromosomes - What is Inherited	

5. Teaching and Learning Strategies	
1- Enable students to define the general terminology of developmental psychology 2- Students' ability to employ these terms in the field of education 3- The ability of students to keep pace with the educational process and in line with educational modernity based on what they have acquired	Strategy

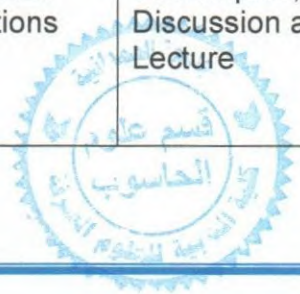
- Students' ability to prepare mini-reports on some of the concepts contained in the vocabulary of the subject - Students practice these concepts in a process of learning and teaching - Students' interaction during learning based on what they learned in the course	

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Feedback via direct questions	Lecture & Discussion	**General Concepts and Principles - Definition of Developmental Psychology - Evolution of Growth Pattern**	Theoretical Knowledge and Practical Educational Application	2	١
Feedback via direct questions	Lecture, Discussion	**General Principles of Growth - Factors Affecting Growth**	Theoretical Knowledge and Practical Educational Application	2	٢
Feedback via direct questions	Lecture & Discussion, Brainstorming Techniques	**Chromosome Genetic Factors - What is Inherited**	Theoretical Knowledge and Practical Educational Application	2	٣
Feedback via direct questions	Lecture & Discussion	**Biological Factors - Endocrine System - Nervous System**	Theoretical Knowledge and Practical Educational Application	2	٤
Feedback via direct questions	Lecture, Discussion and Brainstorming Techniques	**Maturity-Environmental Factors-Uterine Environment**	Theoretical Knowledge and Practical Educational Application	2	٥
Feedback via direct questions	Lecture and Discussion, Methods of Scientific Skepticism	**Family Environment-School Environment-Social Environment-Normalization Environment**	Theoretical Knowledge and Practical	2	٦

			Educational Application		
Feedback via direct questions	Lecture, Discussion and Brainstorming Techniques	**Research Methods in Developmental Psychology**	Theoretical Knowledge and Practical Educational Application	2	٧
Feedback via direct questions	Lecture, Discussion and Brainstorming Techniques	**Purpose of the Pediatric Study - Normalization Studies - Children's Behavior History Normalization Observation Case**	Theoretical Knowledge and Practical Educational Application	2	٨
Feedback via direct questions	Lecture and Discussion Brainstorming Methods	**Clinical Studies-Therapeutic Method-Interview, Non-Experimental Research Methods, Longitudinal Method, Cross-sectional Studies, Experimental Study Methods**	Theoretical Knowledge and Practical Educational Application	2	٩
Extra-curricular Activities	Discussion Sessions	**Developmental Theories (Psychoanalysis, Piaget, Erikson, Kolberg, Brunner)**	Theoretical Knowledge and Practical Educational Application	2	١٠
Feedback via direct questions	Lecture, Discussion and Dialogue	**Embryonic stages, stages of development, hereditыEnvironmental factors affecting the normal development of the fetus**	Theoretical Knowledge and Practical Educational Application	2	١١
Feedback via direct questions	Lecture and Discussion Brainstorming Methods	**Psychological factors, genetic factors**	Theoretical Knowledge and Practical Educational Application	2	١٢
Feedback via direct questions	Lecture & Discussion Collaborative Learning	**Birth, growth and motor development in the child**	Theoretical Knowledge and Practical Educational Application	2	١٣
Feedback via direct questions	Lecture & Discussion	**Manifestations of Mental Development, Nursing Care for Children of this Stage**	Theoretical Knowledge and Practical	2	١٤

			Educational Application		
Feedback via direct questions	Lecture & Discussion	**Early Childhood, Physical and Motor Development**	Theoretical Knowledge and Practical Educational Application	2	١٥
Feedback via direct questions	Lecture, Discussion and Dialogue	**Mental Development Theory of Mind Acquisition of Concepts, Emotional Development Emotional Characteristics Fear Anxiety Anger Jealousy and Gender (Gender)**	Theoretical Knowledge and Practical Educational Application	2	١٦
Feedback via direct questions	Lecture, Discussion and Dialogue	**Social and Moral Development Social Characteristics Moral Judgment Language Development Linguistic Characteristics Language Development in Children**	Theoretical Knowledge and Practical Educational Application	2	١٧
Feedback via direct questions	Lecture, Discussion and Dialogue	**Middle and late childhood, motor development of hand control, cognitive development, weight retention, size, height, number, and area Emotional development**	Theoretical Knowledge and Practical Educational Application	2	١٨
Feedback via direct questions	Lecture, Discussion and Dialogue	**Social Development Socialization Institutions Sexual Stereotyping Family and Social Problems of the Child Congenital Development Moral Sense of Factors Affecting it**	Theoretical Knowledge and Practical Educational Application	2	١٩
Feedback via direct questions	Lecture, Discussion and Dialogue	**Schooling (entering school) and adapting to the world of the classroom**	Theoretical Knowledge and Practical Educational Application	2	٢٠
Feedback via direct questions	Brainstorming Techniques, Discussion and Lecture	**Adolescence, the meaning of adolescence, adolescence and puberty and the factors affecting it, basic trends in the study of adolescence,**	Theoretical Knowledge and Practical Educational Application	2	٢١



		biological trends, psychological trends, social trends, development processes in adolescence, physical development, the impact of physiological variables on the adolescent psyche			
Feedback via direct questions	Monthly exam	**Cognitive mental development, the development of intelligence, the emergence of abstract thinking, emotional development, self-concept, shyness, violence and aggression, anxiety, fear.**	Theoretical Knowledge and Practical Educational Application	2	٢٢
Feedback via direct questions	Discussion and Dialogue	**Delinquency Relationship with parents Relationship with friends Adolescence crisis Adolescence Meaning of adulthood Requirements for advancement in adulthood Psychological states of adults by age and gender**	Theoretical Knowledge and Practical Educational Application	2	٢٣
Feedback via direct questions	Discussion and Dialogue	**Learning in Adulthood and Aging** **Adulthood in men and women** **Mental Characteristics and Intelligence in Adulthood** **Emotional Manifestations Emotional Intelligence Types of Intelligence** **Psychological Theories of Adulthood** **Crises and Changes**	Theoretical Knowledge and Practical Educational Application	2	٢٤

Feedback via direct questions	Discussion and Dialogue	**Aging :** **Ageing in developing countries** **Changes in the body and soul Diseases of the nervous system** **Emotional Change Psychological and Mental Problems Psychiatric Illness in Old Age The Psychology of Death**	Theoretical Knowledge and Practical Educational Application	2	٢٥
Feedback via direct questions	Discussion and Dialogue	**Cognitive Mental Change Memory Memory Function Factors Affecting Performance** **Aging Crises Requirements for Aging**	Theoretical Knowledge and Practical Educational Application	2	٢٦
Feedback via direct questions	Discussion and Dialogue	**Theories of Aging** **Biological model** **Social Model**	Theoretical Knowledge and Practical Educational Application	2	٢٧
Feedback via direct questions	Discussion and Dialogue	**Psychomodeling** **Psychoanalytic Model**	Theoretical Knowledge and Practical Educational Application	2	٢٨
Feedback via direct questions	Discussion and Dialogue	**Ericsson's theory and advanced age**	Theoretical Knowledge and Practical Educational Application	2	٢٩
By evaluating a practical session	Discussion and Dialogue	**Junk's theory of aging .**	Theoretical Knowledge and Practical Educational Application	2	٣٠

7. 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 **Written and oral tests, assessment questions**	
8. Learning and Teaching Resources	
Required textbooks (methodology if available)	1. Fundamentals of Educational Psychology, Touq Adas and Abdul Rahman Adas (1983). 2. Learning and Thinking Styles, Ismail Ibrahim Ali, and Wissam Tawfiq Al-Mashhadani (2014)
Main References (Sources)	
Recommended books and references (scientific journals, reports...)	Educational Psychology. Fadel Arzjawi, Hamed Zahran, Mental Health
Electronic References, Websites	Psychology Library - Important Books in Psychology and Special Education - **Telegram**

Course Description Form

1. Course Name
Secondary Education and Educational Administration
Course Code
CS208
Semester/Year
annual
Date of preparation of this description
2025-2024
Available Forms of Attendance
Face-to-face education
2. Number of Hours (Total) / Number of Credits (Total)
60 Hours/ 4 Units
3. Course administrator name (if more than one name mentioned)
Name: M.M. Shawqi Sabah Behnam Email: Shawqi.bahnam@uohamdaniya.edu.iq
4. Course Objectives

The student should learn and understand the concept of management and supervision	Course Objectives

5. Teaching and Learning Strategies	
	Strategy

6. Course Structure					
Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week

		Secondary education, objectives of secondary education			1
		Types of Secondary Education Schools, Experiences of Some Countries of the World in Secondary Education			2
		Management, Management Concept, Management Schools			3
		The Concept of Educational Administration, Centralization and Decentralization in Educational Administration			4
		Factors influencing educational administration in terms of centralization and decentralization, the concept of educational administration, and the fields of educational .administration			5
		The concept of school administration, the importance of school administration, and the goals of school .administration			6
		Components of School Management, Elements of School Management, Success Factors of School .Planning			7
		Organization, the most important principles of good organization, guidance, follow-up and evaluation, basic			8

		conditions for follow-up, areas of evaluation			
		Characteristics of successful school management, school ,management styles			9
		Chaotic Style, Style Drives, Difference Between the Three School Styles, Characteristics of .School Management			10
		Skills of the school principal, ethical rules of the school management profession, duties of the school principal. Administrative duties of ,the school principal			11
		Leadership and its importance in management, administrative leadership, the difference between management and .leadership			12
		An exam will be one of these days			13
		Chapter Three: Educational Supervision, the Importance of Educational Supervision			14
		The development of the concept of educational supervision, the criticisms directed at the inspection ,process			15
		Characteristics of Educational Supervision, Methods of Educational Supervision, Classroom .Visiting Procedures			16

		Supervisory deliberations, mutual visits between teachers, educational operators, supervisory ,bulletins			17
		Micro-education, Foundations of Educational Supervision, Types of Educational Supervision			18
		Corrective supervision, democratic supervision, advantages of educational supervision, functions of educational supervision			19
		Supervisor Selection Specifications, Selection Conditions for Educational Supervision Jobs			20
		Chapter Four: Total Quality			21
		Total Quality Goals, Total Quality Leadership			22
		Elements of the success of the implementation of total quality in the school, .total quality standards			23
		The Role of Educational Supervision in Achieving Quality			24
		Obstacles to the implementation of Total .Quality Management			25
		The semester exam will be on one of these mentioned .days			26
					٢٧

					٢٨
					٢٩
					30

ical

7. 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
Written and oral tests, assessment questions

	8. Learning and Teaching Resources
Secondary Education Textbook, Management and Supervision	**Required textbooks (methodology if available)**
	Main References (Sources)
	Recommended books and references (scientific journals, reports...)
	Electronic References, Websites

Course Description Form

1. Course Name:

Microprocessors

2. Course Code:

CS202

3. Semester / Year:

Yearly

4. Description Preparation Date:

٢٠٢٥/٢/٤

5. Available Attendance Forms:

Attend classrooms + laboratories

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

120 hours (60 theoretical + 60 practical) / 6 units

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

Name: **Firas Abdulrahman Yousif**
Email: **firasabdulrahman@uohamdaniya.edu.iq**

8. Course Objectives

Course Objectives	• **To familiarize students with the internal struc of the microprocessor and how it works, as wel executing programs using the 8086 emulator.**

9. Teaching and Learning Strategies

Strategy	• **The student acquires technical information about the inter structure of the processor and how it works.** • **He acquires the skill of executing programs using the 8086 emula program.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٤		Introduction Microprocessor		
٢	٤		Memory		
٣	٤		**Fetch and Execute instruction**		
٤	٤				

٥	٤		Programming model		
٦	٤		Flag register		
٧	٤		Segment memory		
٨	٤		Addressing model part1		
٩	٤		Addressing model part٢		
١٠	٤		Logic instructions		
١١	٤		Shift instructions		
١٢	٤		Rotate instructions		
١٣	٤		Arithmetic instructions & Addition instruction Subtraction instructions		
١٤	٤		Subtraction instructions		
١٥	٤		Multiplication instruction		
١٦	٤		Transfer of control instruction & jump unconditional instructions		
١٧	٤		Jump conditional instructions		
١٨	٤		Stack concept & application		
١٩	٤		Push instructions		
٢٠	٤		Pop instructions		
٢١	٤		String instructions		
٢٢	٤		The interrupts		
٢٣	٤		Instructions set		

٢٤	٤		(form, no. of addressing)		
٢٥	٤		Brief introduction to machine code		
٢٦	٤		Machine assembly		
٢٧	٤		Coding the program		
٢٨	٤		Decoding		
٢٩	٤		i/o port		
٣٠	٤		Instructions		
			Programmed i/o		

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)	**Microprocessor 8086**
Main references (sources)	**THE INTEL MICROPROCESSORS 8086/8 80186/80188, 80286, 80386, 80486, Pentium, Pen Pro Processor, Pentium II, Pentium III, Pentium 4, Core2 with 64-Bit Extensions Architec Programming, and Interfacing.**
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	**https://www.sathyabama.ac.in/sites/default/files/course-material/2020-10/MC4.pdf** **-٢** **https://userpages.umbc.edu/~squire/intel_book.pdf**


قسم علوم
الحاسوب

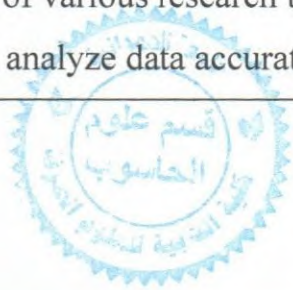
Course Description Form

1. Course Name
Research Methodology
Course Code
CS206
Semester/Year
annual
Date of preparation of this description
1/9/2024
Available Forms of Attendance
Weekly Theoretical
2. Number of Hours (Total) / Number of Credits (Total)
2 Hours/4 Units
3. Course administrator name (if more than one name mentioned)
Name: Eng. Dr. Zaidoun Abdullah Atiwi Email: ziadoonotaiwi@uohamdaniya.edu.iq
4. Course Objectives

The objectives of the scientific research method are varied and include several aspects, the most important of which are: Knowledge Discovery: Scientific research aims to explore new knowledge and understand phenomena and relationships in a particular field of science or arts. Developing Research Skills: The scientific research method is a means of developing researchers' skills, such as analytical skills, critical thinking, time management, and the use of appropriate research techniques.	**Course Objectives**

Problem Solving: Scientific research aims to seek solutions to complex problems facing societies in areas such as health, technology, the environment, and the economy. Technology development and innovation: Scientific research can contribute to the development of technology and improve innovations, leading to the development of new products and services that meet people's needs. Dissemination of results and knowledge: Scientific resea aims to disseminate the results and knowledge gai among researchers and the scientific community, whet through publication in scientific journals, presentations conferences, or participation in seminars and workshops. Providing Scientific Evidence: Scientific research is a ma source of scientific evidence that supports findings a conclusions, and contributes to building scienti knowledge and culture. These are some of the main objectives of the scientific resea methodology, and these goals can vary according to research fields and individual interests of the researchers	

5. Teaching and Learning Strategies	
Develop critical thinking skills: Encourage researchers to think critically and evaluate information independently and objectively. Enhancing Research and Analysis Skills: Training researchers in the use of various research tools and analysis techniques needed to collect and analyze data accurately.	**Strategy**



Developing Scientific Report Writing Skills: Teaching researchers how to formulate scientific reports logically and clearly according to the approved scientific standards. Stimulating creativity and innovation: Encouraging researchers to seek new solutions and add scientific or practical value through scientific research. Developing Scientific Communication Skills: Training researchers to communicate effectively with the target audience and present results and conclusions in a smooth and understandable manner. Enhance planning and time management capability: Helping researchers effectively organize the research and time management process to achieve set goals. Enhancing teamwork skills: Encouraging researchers to work in teams and share knowledge and experiences with colleagues to better achieve research objectives.	

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
examination	theoretical	The Concept of Science and Scientific Research	The student understands the subject	2	١
	theoretical	Sources of Choosing a Research Topic		2	٢
	theoretical	Preparation of the research plan		2	٣
	theoretical	Identifying a research problem		2	٤
	theoretical	Research Hypothesis		2	٥
	theoretical	Scientific Research Methods		2	٦
	theoretical	Scientific Research Methods		2	٧

	theoretical	Note		2	٨
	theoretical	Note		2	٩
	theoretical	Questionnaire		2	١٠
	theoretical	Steps to develop the questionnaire form		2	١١
	theoretical	Steps to develop the questionnaire form		2	١٢
	theoretical	Interview		2	١٣
	theoretical	Samples and Types		2	١٤
	theoretical	Steps to Sample Selection		2	١٥
Exam	theoretical	Exam		٢	١٦
	theoretical	Experimental Research		2	١٧
	theoretical	Historical Research		2	١٨
	theoretical	Variables/Independent and Dependent		2	١٩
	theoretical	Research Evaluation Criteria		2	٢٠
	theoretical	Research Components		2	٢١
	theoretical	References		2	٢٢
	theoretical	Practical Application		2	٢٣
	theoretical	Practical Application		2	٢٤
	theoretical	Practical Application		2	٢٥
	theoretical	Practical Application		2	٢٦
	theoretical	Practical Application		2	٢٧
	theoretical	Practical Application		2	٢٨

	theoretical	Practical Application		2	٢٩
	theoretical	Practical Application		2	٣٠

tical

7. Course Evaluation

Distributing the grade out of ١٠٠ according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports... etc

1- **Quiz.**
2- **Quarterly and yearly.**
3- **Reports.**

	8. Learning and Teaching Resources
Scientific Research Methods/Authorship Dr. Saad Ajil Mubarak Dr. Saad Ibrahim Al-Shhuwaisheen	**Required textbooks (methodology if available)**
All the prescribed books for the subject, especially the recent ones.	**Main References (Sources)**
All academic studies and scientific research published in academic scientific journals that are related to the vocabulary of the subject in a research methodology	**Recommended books and references (scientific journals, reports...)**
All studies published on websites that are related to vocabulary in a research methodology	**Electronic References, Websites**

Course Description Form

1. Course Name:
English
2. Course Code:
CS210
3. Semester / Year:
Full-year program (annual)
4. Description Preparation Date:
4\2\2025
5. Available Attendance Forms:
In-person attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 credit hours\ 2 unites
7. Course administrator's name (mention all, if more than one name)
Name: Asst. Lect. **Zahraa Moharam Salman** Email: **zahraamuharam@uohamdaniya.edu.iq**
8. Course Objectives

Course Objectives	1- Develop Core Language Skills: Enhance students' abilities in listening, speaking, reading, and writing in English. 2- Improve Grammatical Competence: Enable students to understand and apply key grammatical rules accurately in communication. 3- Expand Vocabulary: Build a functional and academic vocabulary that supports both general and field-specific communication. 4- Promote Effective Communication: Equip

	students with the skills needed to communicate clearly and appropriately in various real-life and academic situations. 5- Strengthen Comprehension Skills: Foster the ability to understand spoken and written English in different contexts and formats.

9. Teaching and Learning Strategies

Strategy	1. Understanding the basics of the English language: Students should understand English grammar rules and use them correctly in both written and spoken contexts. 2. Developing listening and speaking skills: Students should be able to understand spoken English and speak clearly. 3. Enhancing linguistic and communicative skills: Students should learn how to correctly use new vocabulary in different contexts. 4. Promote listening skill to understand conversations in English. 5. Improve learners' Speaking skill and the ability to express various ideas using the English language. 6. Enhance Writing skill and the ability to form sentences. 7. Improve Reading skill and comprehension of different texts.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Language Knowledge	Language learning basics\ Langua skills	Lecture and Discussion	Participation
2	1	Language Knowledge	Practicing conversation\oral self-introductions	Lecture and Discussion	Participation
3	1	Language Knowledge	Parts of speech\ Presenting person information	Lecture and Discussion	Participation
4	1	Language Knowledge	Forms of verb to be\ Talking abou family	Lecture and Discussion	Participation
5	1	Language Knowledge	Pronouns\ Possessive adjectives\ Spelling	Lecture and Discussion	Participation
6	1	Language Knowledge	Pronunciation\ Types of -s\ possessive Adjectives	Lecture and Discussion	Test
7	1	Language Knowledge	Opposite adjectives\ Family relations\ plurals	Lecture and Discussion	Participation
8	1	Language Knowledge	Everyday conversations\ Outdoor jobs	Lecture and Discussion	Participation
9	1	Language Knowledge	An engineer and a zoologist description\ Occupations	Lecture and Discussion	Participation
10	1	Language Knowledge	Declaratives and questions\ Negati with not	Lecture and Discussion	Participation
11	1	Language Knowledge	Types of Verbs\ Helping verbs\ Auxiliaries	Lecture and Discussion	Participation
12	1	Language Knowledge	Forms of verb to have\ expressing possessions	Lecture and Discussion	Participation
13	1	Language Knowledge	Practice reading\ Forms of verb to	Lecture and Discussion	Participation
14	1	Language Knowledge	Practicing listening\ Conjugation c verbs	Lecture and Discussion	Participation
15	1	Language Knowledge	Telling the time\ Advanced readin of analogue clocks	Lecture and Discussion	Participation

16	1	Language Knowledge	Getting to know others\ Simple present	Lecture and Discussion	Test
17	1	Language Knowledge	Wh-questions\ Talking about you	Lecture and Discussion	Participation
18	1	Language Knowledge	Getting information\ Vocabularies and usage	Lecture and Discussion	Participation
19	1	Language Knowledge	Social expressions\ Communicatio	Lecture and Discussion	Participation
20	1	Language Knowledge	Present continuous\ exercises\ Usi dictionaries	Lecture and Discussion	Participation
21	1	Language Knowledge	The way we live\ Have and have g	Lecture and Discussion	Participation
22	1	Language Knowledge	Present perfect\ Collocations	Lecture and Discussion	Participation
23	1	Language Knowledge	Present perfect continuous\ Readir and speaking	Lecture and Discussion	Participation
24	1	Language Knowledge	Describing one's life\ Talking abo yourself and others	Lecture and Discussion	Participation
25	1	Language Knowledge	Simple past\ Past continuous	Lecture and Discussion	Participation
26	1	Language Knowledge	Yes\No questions\ Making conversation	Lecture and Discussion	Participation
27	1	Language Knowledge	Time expressions\ Using quantity and frequency expressions	Lecture and Discussion	Participation
28	1	Language Knowledge	Past perfect\ Past perfect continuo	Lecture and Discussion	Participation
29	1	Language Knowledge	Verb patterns\ Future forms	Lecture and Discussion	Participation
30	1	Language Knowledge	Comparatives and superlatives\ synonyms\ Antonyms	Lecture and Discussion	Participation

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)	Soars, J. and Soars, L. (2006) New Headw Plus Pre-Intermediate: Student's Bo Oxford, Oxford University Press.
Main references (sources)	Soars, J. and Soars, L. (2006) N Headway Plus Pre-Intermedia Student's Book. Oxford, Oxf University Press.
Recommended books and references (scientific journals, reports...)	Headway Series
Electronic References, Websites	Headway website

Course description form

1.Name of the course
Arabic
Course code
CS209
Semester/year
Annual
The date this description was prepared
2025 /2/5
Available attendance forms
My attendance weekly
(Number of study hours (total)/number of units (total .
30hours/2 units
(Name of the course administrator (if more than one name is mentioned
Name: Lubna Ya'rab Abdul Razzaq Al-Healy **Email:** loubna.y.alhealy@uohamdaniya.edu.iq
1. Course objectives

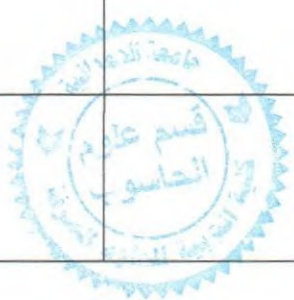
tadhkir altaalib biqawaeid allughat alearabiat aleama 'an yataealam altaalib qawaeid alsiyaghat bi'uslub wadihi. 'an yataealam altaalib kitabat nasin mdbwtaan bialshakl waealamat altarqimi. 'an yataearaf altaalib ealaa juz' basit 'aw nubdhat eamat min turathih alearabii al'adbi. 'an yabqaa altaalib ealaa silat balaghath al'umu (allughat alearabiatu) alati tubqih ealaa silat bihuiatih al'asilati.	**Objectives of the study subject**

Teaching and learning strategies	
.The student gets to know the parts of speech .For the student to recognize the call The student should differentiate between poetry and .prose For the student to become familiar with the most .important sources of literature The student should distinguish between severing and .connecting hamzas The student should enumerate the conjunctions and	**Strategy**

.their meanings .Proper reading of prose and poetic texts .Clear parsing of nominal and verbal sentences Memorizing the keys to the seven pendants, which .represent the finest works written in the literary heritage .Adjusting written texts in form and punctuation Formulating representative sentences that are precise in .form and meaning	

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Watches	Week
		Parts of speech, noun .signs			1
		The meaning of .literature and its eras			2
		Hamzat al-Qat` and Hamzat al-Wasl, their definition and where they are used in nouns, verbs, and .letters			3
		Verb signs, letter signs, types of sentences, their .elements, and syntax			4
		The concept of poetry, its sections, sources and purposes, and some representative poetic .verses			5
		Punctuation marks: their definition, where they are used, and an applied .example			6
		Dividing the verb according to its tense, and parsing the present tense verb: its			7



		subjunctive and subjunctive, tools, meaning, and .parsing			
		Caller: calling letters/del etion and its causes, calling letter, its grammati cal analysis, grammati cal .examples			8
		The meaning of prose, its sections, .and some of its types			9
		Minions The adjective, its purposes and parts, and the ruling on its parsing Emphasis and its types Conjunction and its letters Substitution, its types, meanings and .parsing			10

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.

.Quiz

.Daily, quarterly and annual exams

.Duties

.Participation and interaction during the lecture

	Learning and teaching resources
Alfiyyah Ibn Malik, Explanation of Ibn Aqeel/Al-Amali in Islamic Literature by Ibtisam Marhoon Al-Saffar.	**Learning and teaching resources**

The Clear Grammar by Ali Al-Jarim / The Wafi Grammar by Abbas Hassan / Poetry and the Days of the Arabs in the Pre-Islamic Era by Dr. Afif Abdel Rahman / The Pre-Islamic Era by Shawqi .Deif The clear dictation of Abdul Majeed Al .Nuaimi	**(Main references (sources**
The Seven Commentaries by Al-Zouzani / A History of Arabic Literature by Shawqi .Deif	**Recommended supporting books and (...references (scientific journals, reports**
	Electronic references, websites

Course Description Form

1. Course Name	
The crimes of the Baath regime in Iraq	
Course Code	
CS211	
Semester/Year	
annual	
Date of preparation of this description	
2025	
Available Forms of Attendance	
My Weekly Attendance	
2. Number of Hours (Total) / Number of Credits (Total)	
30 hours/two units	
3. Course administrator name (if more than one name mentioned)	
Name: Gharib Gorgan Sharif ghareb.1989@uohamdaniya.edu.iq	
4.	
Introduce students to the crimes of the Baath regime in Iraq, such as mass graves in Iraq before 2003. Provide an opportunity to understand the details of c of the most important dark periods in Iraq's mode history.	Course Objectives
5. Teaching and Learning Strategies	
1. Understand the nature of the ruling regime during the period of the Baath Party's rule in Iraq. 2. Introducing students to the enormity of the crimes of the Baath Party in Iraq. 3. Developing students' knowledge about the darkest period in Iraq's contemporary history.	Strategy

B. Skill Objectives of the Course

- The skill objectives of the Baath regime crimes course in Iraq in the second phase may include:
- Analysis Skill:
  - Analysis of important facts in Iraq's political history.
  - The ability of students to understand the differences between a dictatorial system and a democratic system.

Reading Skill:

- Understand the legal texts on human rights in dictatorial states.

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Direct Questions	Lecture, Discussion and Dialogue	The concept of crimes and their divisions, and the definition of crime in language and idiom	Theoretical Knowledge	1	١
Direct Questions	Lecture, Discussion and Dialogue	Crimes and Crimes Sections of the Baath Regime according to the Documentation of the Law of the Iraqi Supreme Criminal Court in 2005	Theoretical Knowledge	1	٢

Direct Questions	Lecture, Discussion and Dialogue	Types of International Crimes	Theoretical Knowledge	1	٣
Direct Questions	Lecture, Discussion and Dialogue	Decisions issued by the Supreme Criminal Court, and the most prominent cases heard by the court: the crime of the Dujail massacre and the crime of the bombing of Halabja	Theoretical Knowledge	1	٤
Direct Questions	Lecture, Discussion and Dialogue	The crime of Anfal operations and the crime of executing a number of Iraqi merchants	Theoretical Knowledge	1	٥
Direct Questions	Lecture, Discussion and Dialogue	The crime of suppressing the popular uprising, the crime of the Friday prayer events, the liquidation of religious and secular parties, and the crime of displacing the Feyli Kurds	Theoretical Knowledge	1	٦

Direct Questions	Lecture, Discussion and Dialogue	Levels of protection of the legal interests of the community	Theoretical Knowledge	1	٧
Direct Questions	Lecture, Discussion and Dialogue	Psychological Crimes and Their Mechanisms	Theoretical Knowledge	1	٨
Direct Questions	Lecture, Discussion and Dialogue	Effects of Psychological Crimes	Theoretical Knowledge	1	٩
Direct Questions	Lecture, Discussion and Dialogue	Social crimes and the militarization of society	Theoretical Knowledge	1	١٠
Direct Questions	Lecture, Discussion and Dialogue	The Baathist regime's position on religion	Theoretical Knowledge	1	١١
Direct Questions	Lecture, Discussion and Dialogue	Continuation of the discussion on the Baathist regime's position on religion and the results of the popular uprising	Theoretical Knowledge	1	١٢
Direct Questions	Lecture, Discussion and Dialogue	Violations of Iraqi laws and forms of human rights violations and crimes of the authority	Theoretical Knowledge	1	١٣
Direct Questions	Lecture, Discussion and Dialogue	A review of some of the crimes of the	Theoretical Knowledge	1	١٤

		Baath Party against the Iraqi people And talking about some of the decisions of the political and military violations of the Baath regime			
		Monthly exam	Theoretical Knowledge	1	١٥
Direct Questions	Lecture, Discussion and Dialogue	Places of Prisons and Detention of the Baath Regime	Theoretical Knowledge	1	١٦
Direct Questions	Lecture, Discussion and Dialogue	The Environmental Crimes of the Baath Regime in Iraq: War and Radioactive Pollution	Theoretical Knowledge	1	١٧
Direct Questions	Lecture, Discussion and Dialogue	Use of internationally prohibited weapons, such as chemical weapons, and their effects in some areas	Theoretical Knowledge	1	١٨
Direct Questions	Lecture, Discussion and Dialogue	Radioactive Material Contamination	Theoretical Knowledge	1	١٩
Direct Questions	Lecture, Discussion and Dialogue	Destruction of Cities and Villages	Theoretical Knowledge	1	٢٠

		(Scorched-Earth Policy)			
Direct Questions	Lecture, Discussion and Dialogue	Draining the marshes	Theoretical Knowledge	1	٢١
Direct Questions	Lecture, Discussion and Dialogue	Dredging palm groves, trees and crops	Theoretical Knowledge	1	٢٢
Direct Questions	Lecture, Discussion and Dialogue	Mass Grave Crimes	Theoretical Knowledge	1	٢٣
Direct Questions	Lecture, Discussion and Dialogue	Events of the genocide graves committed by the Baathist regime in Iraq	Theoretical Knowledge	1	٢٤
Direct Questions	Lecture, Discussion and Dialogue	Events from 1979 to 2003 and their relationship to mass graves	Theoretical Knowledge	1	٢٥
Direct Questions	Lecture, Discussion and Dialogue	Temporal Classification of Mass Grave Crimes in Iraq for the Period 1963-2003	Theoretical Knowledge	1	٢٦
Direct Questions	Lecture, Discussion and Dialogue	Genocide graves related to the Iran-Iraq War	Theoretical Knowledge	1	٢٧

Direct Questions	Lecture, Discussion and Dialogue	Kurdish Genocide Cemeteries and Genocide Cemeteries of Anfal Massacre Victims	Theoretical Knowledge	1	٢٨
Direct Questions	Lecture, Discussion and Dialogue	Genocide graves of victims of the 1991 popular uprising	Theoretical Knowledge	1	٢٩
		Monthly exam	Theoretical Knowledge	1	٣٠

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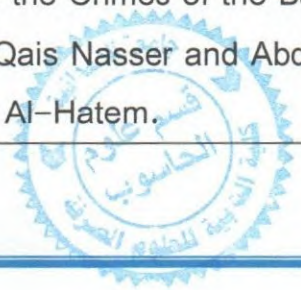
7. Course Evaluation

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

Oral Dialogue and Direct Question

Written and oral tests

	8. Learning and Teaching Resources
Ministerial Platform "Crimes of the Baath Regime in Iraq"	**Required textbooks (methodology if available)**
	Main References (Sources)
The coup d'état of July 17, 1968 – 2003, the suspicious beginning and the tragic end of Seif al-Din al-Douri. The Epistemological Foundation for the Study of the Crimes of the Baath Party in Iraq by Qais Nasser and Abdulhadi Ma'touq Al-Hatem.	**Recommended books and references (scientific journals, reports...)**



Supreme National Accountability and Justice Commission (SACRA) website	**Electronic References, Websites**

Course Description Form

١. Course Name
Artificial Intelligence
Course Code
CS300
Semester/Year
annual
Date of preparation of this description
2024 /9/1
Available Forms of Attendance
Weekly / Theoretical + Practical
٢. Number of Hours (Total) / Number of Credits (Total)
120 Hours/6 Units
٣. Course administrator name (if more than one name mentioned)
Name: Dr. Noora Hashim Mohammed Email: noora@uohamdaniya.edu.iq **Name: Mahmoud Mohamed Younis** **Email: mahmood.younis@uohamdaniya.edu.iq**
٤. Course Objectives

The main purpose of the course is to understand and design the foundation of a programming language compiler by achieving the objectives mentioned below. **Through the Artificial Intelligence course, the student learns how to deal with the theories of artificial intelligence technologies and artificial neuron networks through machine learning.** **Learn about machine learning algorithms**	**Course Objectives**

Enable the student to understand how data is collected and analyzed to extract information that is prepared for the training process. **Dealing with the practical aspect of applying algorithms** **Effective problem solving through a computational model using an algorithm.**	

٥. Teaching and Learning Strategies

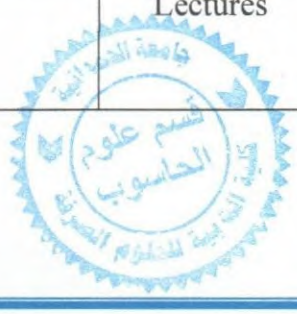
A. Cognitive Objectives 1- Introducing the concepts of artificial intelligence 2- Introducing students to the importance of artificial intelligence applications 3- Distinguishing between the types of technologies used in machine learning 4- Developing the concepts of the programming language used in the application of algorithms 5- Fully preparing the student and preparing him for the translator's material. B. Skill Objectives of the Course • Presenting the lecture in detail and sequentially and linking it to examples from reality to form a clear mental image in the student. • The ability to summarize the class. • The ability to read and understand the class. • Ability to discuss within the classroom. • The ability to solve the exercises of the class.	**Strategy**

٦. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
quiz	Lectures	Artificial intelligent Introduction Definition		4 Theoretical+ practical	1

	Lectures	Artificial intelligent Applications, Programming		4 Theoretical+ practical	2
	Lectures	Characteristic of A.I. Programming language and A.I., Problem Solving		4 Theoretical+ practical	3
	Lectures	Graph Theory ,travel sales man problem		4 Theoretical+ practical	4
	Lectures	Derivation		4 Theoretical+ practical	5
	Lectures	Types of grammar -Phrase structure grammar (PSG)		4 Theoretical+ practical	6
	Lectures	8-puzzel Game , Search method		4 Theoretical+ practical	7
	Lectures	Systematic Methods		4 Theoretical+ practical	8
	Lectures	Depth – First Search		4 Theoretical+ practical	9
	Lectures	Breadth – First Search		4 Theoretical+ practical	10
	Lectures	Heuristic Methods, Hill – Climbing Search		4 Theoretical+ practical	11
	Lectures	Best – First Search		4 Theoretical+ practical	12
	Lectures	A Star (A*) algorithm		4 Theoretical+ practical	13
	Lectures	Artificial Neural Network(ANN),Introduction		4 Theoretical+ practical	14
	Lectures	ANN component, How Are ANN used Common Activation functions, ANN Architecture		4 Theoretical+ practical	15

	Lectures	Application(logical Function)		4 Theoretical+ practical	16
		Mid-year Break			١٧
	Lectures	Hebb Net (Algorithm, Applications)		4 Theoretical+ practical	18
	Lectures	Perceptron Net (Algorithm, Applications)		4 Theoretical+ practical	19
	Lectures	Adaline Net (Algorithm, Applications)		4 Theoretical+ practical	20
	Lectures	Madaline Net (Algorithm, Applications)		4 Theoretical+ practical	21
	Lectures	Pattern Association ,Introduction, Hebb rule ,Outer Production		4 Theoretical+ practical	22
	Lectures	Hetro Associative Memory N.N, (Architecture, Algorithm)		4 Theoretical+ practical	23
	Lectures	Auto Associative Memory N.N, (Architecture, Algorithm, Applications		4 Theoretical+ practical	24
	Lectures	Discrete Hopfield Net		4 Theoretical+ practical	25
	Lectures	Expert System (Introduction, Architecture, Characteristic)		4 Theoretical+ practical	26
	Lectures	Knowledge representation		4 Theoretical+ practical	27
	Lectures	Fact and rule, Production system and rule base		4 Theoretical+ practical	28
	Lectures	Application of Expert System		4 Theoretical+ practical	29



	Lectures	The role of expert system in learning by computer		4 Theoretical+ practical	30

٧. 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

- **Freedom to express opposing views is correct.**
- **Participate in scientific discussions.**
- **Help with homework.**
- **Daily attendance and commitment within the lecture hall.**

٨. Learning and Teaching Resources	
Required textbooks (methodology if (available	١. Stephen Marche (2020), the Alignment Problem.
Main References (Sources)	Artificial Intelligence, by Melanie Mitchell (2019)
Recommended books and references (...scientific journals, reports)	١. Artificial Intelligence – A Modern Approach (3rd Edition) – By Stuart Russell & Peter Norvig
Electronic References, Websites	https://www.javatpoint.com/machine-learning/ https://www.coursera.org/learn

Course Description Form

1. Course Name:	
Compilers	
2. Course Code:	
CS301	
3. Semester / Year:	
Annual	
4. Description Preparation Date:	
10/2/2025	
5. Available Attendance Forms:	
Weekly / Theory + Practical	
6. Number of Credit Hours (Total) / Number of Units (Total)	
120 Hours (60 Theory + 60 Practical) / 6 Units	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst. Lecturer Noor Basim Abdullah Email: noorbasim@uohamdaniya.edu.iq	
8. Course Objectives	
Course Objectives	• Understand the fundamental principles and rules of translating high-level programming languages into machine language, and what happens during program execution inside the computer, from the source program to the machine-understandable program. • Identify the main tasks of a compiler and describe how it works. • Distinguish between compilers and interpreters. • Describe the

	architecture and phases of a compiler step by step.

9. Teaching and Learning Strategies

Strategy	Understand the basic properties of compilers. Familiarize with essential compiler-related terminology. Recognize the basic differences between compilers and interpreters. Develop general electronic and informatics knowledge. Build theoretical background through lectures, examples, and Q&A sessions. Encourage classroom discussion, allowing students to express their opinions and suggestions. Provide classroom exercises and motivate students to ask and answe questions. Assign homework exercises, with discussion of mistakes and weaknesses, leading to collective optimal solutions

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theory / 2 Lab	Identify compiler, assembler, and linker	Introduction Compilers	Lecture + Lab	Quizzes & Exams
٢	2 Theory / 2 Lab	Define compiler phase	Compilers Translation Programs	Lecture + Lab,	Quizzes & Exams
٣	2 Theory / 2 Lab	Understand error type	Errors and Debugging	Lecture + Lab,	Quizzes & Exams
٤	2 Theory / 2 Lab	Understand symbol ta	Types of Symbol Tables with Examples	Lecture + Lab	Quizzes & Exams
٥	2 Theory / 2 Lab	Understand lexical analysis	Lexical Analysis	Lecture + Lab	Quizzes & Exams
٦	2 Theory / 2 Lab	Design lexical analyze	Steps of Lexical Analyzer Design	Lecture + Lab	Quizzes & Exams
٧	2 Theory / 2 Lab	Identify grammar type with examples	Grammar Construction Tools	Lecture + Lab	Quizzes & Exams
٨	2 Theory / 2 Lab	Convert between grammar forms	Converting Grammar Representations	Lecture + Lab	Quizzes & Exams
٩	2 Theory / 2 Lab	Represent finite state automata	FSA, ε-closure, Types	Lecture + Lab	Quizzes & Exams
١٠	2 Theory / 2 Lab	Understand parsing derivation	Syntax Analyzer, Derivation (Left/Right-most)	Lecture + Lab	Quizzes & Exams
١١	2 Theory / 2 Lab	Apply Top-down pars	Top-down Parser	Lecture + Lab	Quizzes & Exams

١٢	2 Theory / 2 Lab	Solve Top-down issue	Backtracking, Recursion, Ambiguity	Lecture + Lab	Quizzes & Exams
١٣	2 Theory / 2 Lab	Eliminate recursion	Immediate and Indirect Recursion	Lecture + Lab	Quizzes & Exams
14	2 Theory / 2 Lab	Solve exercises	Top-down Parser Examples	Lecture + Lab	Quizzes & Exams
15	2 Theory / 2 Lab	Find First sets	Examples of First Sets	Lecture + Lab	Quizzes & Exams
16	2 Theory / 2 Lab	Find Follow sets	Examples of Follow Sets	Lecture + Lab	Quizzes & Exams
17	2 Theory / 2 Lab	Apply parsing	Top-down Parsing Practice	Lecture + Lab	Quizzes & Exams
18	2 Theory / 2 Lab	LL(1) Grammar	LL(1) Grammar	Lecture + Lab	Quizzes & Exams
19	2 Theory / 2 Lab	Error recovery	Error Recovery LL(1) Parsing	Lecture + Lab	Quizzes & Exams
20	2 Theory / 2 Lab	Understand bottom-up parsing	Shift-Reduce Parsing & Handle	Lecture + Lab	Quizzes & Exams
21	2 Theory / 2 Lab	Operator precedence parser	Operator Precedence Parsing	Lecture + Lab	Quizzes & Exams
22	2 Theory / 2 Lab	LR parsing	LR Parser	Lecture + Lab	Quizzes & Exams
23	2 Theory / 2 Lab	SLR parsing	SLR Parser	Lecture + Lab	Quizzes & Exams
24	2 Theory / 2 Lab	LALR parsing	LALR Parser	Lecture + Lab	Quizzes & Exams
25	2 Theory / 2 Lab	Syntax-directed translation	SDT (Syntax Directed Translation)	Lecture + Lab	Quizzes & Exams
26	2 Theory / 2 Lab	Semantic analysis	Static & Dynamic Semantic Checks, Polish Notation (infix, prefix, postfix)	Lecture + Lab	Quizzes & Exams
27	2 Theory / 2 Lab	Intermediate c generation	Three Address Code, Triples, Quadruples, Conversions	Lecture + Lab	Quizzes & Exams
28	2 Theory / 2 Lab	Code optimization	Principles Optimization, Peephole Optimization	Lecture + Lab	Quizzes & Exams
29	2 Theory / 2 Lab	Optimization	Block & Loop Optimization in Flow Graphs	Lecture + Lab	Quizzes & Exams
30	2 Theory / 2 Lab	Code generation	Target Machine, Storage Management, Flow Graph, Code Generator	Lecture + Lab	Quizzes & Exams

11. Course Evaluation

The course will be assessed through a combination of: • Written exams (mid-term and final) • Oral examinations • Daily participation and class discussions • Homework assignments and reports • Quizzes and short tests • Practical lab exercises

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Compiler Construction – Dhamdere (McMillan) • Principles of Compiler Design – Alfred V. Aho, Jeffrey D. Ullman • Basics of Compiler Design – Torben Mogensen (2000-2008)
Main references (sources)	Introduction to Compiler Design – Torben & Egidius Mogensen • Compiler Construction for Digital Computers – David Gries
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Compiler Construction – Dhamdere (McMillan) • Principles of Compiler Design – Alfred V. Aho, Jeffrey D. Ullman • Basics of Compiler Design – Torben Mogensen (2000-2008)

Course Description Form

1. Course Name:
Visual Programming
2. Course Code:
CS303
3. Semester / Year:
Annual
4. Description Preparation Date:
2/2/2025
5. Available Attendance Forms:
Weekly – Theoretical Lectures and Practical Sessions
6. Number of Credit Hours (Total) / Number of Units (Total)
120 hours (60 theoretical + 60 practical) **Credit Units: 6**
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Omar Farook Mohammad Email: ofmalobaidy@uohamdaniya.edu.iq Name: Asst. Lecturer Ahmed Abdulrahman Idris Email: ahmed-alkaddo@uohamdaniya.edu.iq
8. Course Objectives

Course Objectives	• **To understand the fundamentals of the C# programming language and the use of integrated development environments (IDEs) such as Visual Studio for application development.** • **To explore the use of visual programming techniques for designing user interfaces (UI), including creating windows, buttons, text boxes, and other UI components using tools such as Windows Forms or Windows Presentation Foundation (WPF).** • **To handle events and manage user–interface interactions, such as responding to mouse clicks or button presses.** • **To work with databases and integrate them into applications, including inserting, updating, and deleting data using C# and visual programming tools.** • **To develop web applications using C# for building and managing websites and web-based solutions.** • **To enhance students' skills in designing and implementing efficient software applications using C# and visual programming.**

9. Teaching and Learning Strategies	
Strategy	**A. Knowledge and Skills Development**

A1: Building visual applications using graphical user interfaces (GUI) and various visual components.

A2: Utilizing visual development tools such as the form designer and window designer in the Visual Studio environment.

A3: Understanding how visual applications handle events and respond to user interactions with the interface.

A4: Developing graphic design skills through the customization and formatting of visual elements in user interfaces.

A5: Managing and manipulating data within visual applications, including reading from and writing to databases and interacting with them effectively.

A6: Enhancing debugging skills and performance optimization in visual application development.

B. Advanced Competencies

B1: Applying advanced features of the C# language to develop sophisticated visual applications.

B2: Enabling students to master the use of graphical interface development tools in Visual Studio to design advanced and attractive user interfaces.

B3: Applying project management and scheduling skills in visual application development to ensure timely project delivery.

B4: Strengthening students' ability to analyze problems and provide innovative and effective software solutions.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 - 2	٤	Understanding the concept of visual programming,	Introduction to Visual Programming	- Theoretical lectures (PDF, power point). -Practical laboratory sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project

		its definition, features, and characteristics.		-Class discussions and Q&A sessions.	-Class Participation and Activities
3 - 4	٤	Understanding how interfaces work and how to utilize their properties.	Form	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
5 - 6	٤	Understanding how to use the tools and familiarizing with the properties of each component.	Check Box, Radio Buttons and Group Box	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
7 - 8	٤	Understanding how to use multiple interfaces, link them together, and the mechanism to access them	Multi Forms	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
9 - 10	٤	Understanding how to use the list box tool, including adding and removing items.	ListBox	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
11 - 12	٤	Understanding how to use the drop-down list tool, including adding and removing items, and exploring its properties.	ComboBox and NumericUpDown	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

13 - 14	٤	Understanding how to detect and resolve errors.	Errors handling and more Controls	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
15 - 16	٤	Understanding how to work with files, including reading from and writing to them using Stream Files.	Files	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
17 - 18	٤	Understanding how to use the most commonly used windows, including how to add them and access them.	Common Dialogs	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
19 – 20	٤	Understanding how menus work in interfaces, their properties, and how to access them.	MenuStrip Control	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
21 – 22	٤	Understanding how a tree view works, including adding and removing items.	TreeView Control	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
23 – 24	٤	Understanding how to use the web browser tool.	Web Browser	- Theoretical lectures (PDF, power point).	-Written Exams/ Quizzes. -Practical Assignments / Lab Work.

				-Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	- Project -Class Participation and Activities
25 – 26	٤	Understanding how to use the timer control tool and apply it in programs.	Timer Control	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
27 – 28	٤	Understanding how to create a database, access it, and modify it using SQL commands.	Database Programming	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
29 – 30	٤	Understanding how to create an image viewer application and edit images within it.	Image Viewer	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

11. Course Evaluation

The grade is distributed based on the tasks assigned to the student, including daily preparation, quizzes, oral and monthly tests, written assignments, lab reports, etc.

Active Class Participation

Homework Assignments

Attendance

Laboratory Tasks

Quizzes / Tests

Midterm and Final Exams (Theoretical and Practical)

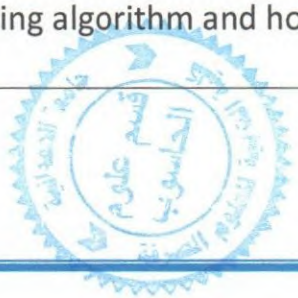
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Sharp J. Microsoft Visual C# 2013 Step by Step. Pearson Education; 2013 Nov 15.
Main references (sources)	-Lectures delivered by the course instructor -Books available in the college library
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Any other materials available on the w

Course Description Form

1. Course Name
Computer Graphics
Course Code
CS302
Semester/Year
annual
Date of preparation of this description
4/2/2025
Available Forms of Attendance
Weekly / Theoretical + Practical
2. Number of Hours (Total) / Number of Credits (Total)
120 Hours (60 Theoretical + 60 Practical) / 6 Units
3. Course administrator name (if more than one name mentioned)
Name: Ahmed A. Mustafa **Email: mostfa@uohamdaniya.edu.iq**
4. Course Objectives

Through the course, the student will be introduced to a set of algorithms used to draw geometric shapes from the perspective o an electronic calculator. These include the Brenham and DDA line drawing algorithms. Learn how to program drawing geometric shapes, lines, and curve in C using Codeblock	**Course Objectives**

5. Teaching and Learning Strategies	
Identify the working philosophy of the geometric shape drawing algorithm and how to apply it practically	**Strategy**



The student learns to gain enough experience to program drawing shapes through OpenGL Drawing Offices	

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
	Classrooms	History, uses, pipeline Primitives Graphic system and models		٤	١
	Classrooms	Raster Devices How a Monitor Works Physical Devices		٤	٢
	Classrooms	Line Equation and slopes		٤	٣
	Classrooms	DDA line drawing algorithm		٤	٤
	Classrooms	Brezenham Line Drawing algorithm		٤	٥
	Classrooms	Brezenham circle drawing algorithm		٤	٦
	Classrooms	Brezenham mid-point algorithm		٤	٧
	Classrooms	2D: Objects representation, Coordinates transformation		٤	٨
	Classrooms	3D: Objects representation, Coordinates transformation,		٤	٩
	Classrooms	Cohen-Surherland line clipping algorithm		٤	١٠
	Classrooms	Image overview and compression		٤	١١
	Classrooms	Histogram in Digital Image		٤	١٢
	Classrooms	Area filling algorithm		٤	١٣

	Classrooms	Bezier Curve		٤	١٤
	Classrooms	Boundary Filling Algorithm		٤	١٥
	Classrooms	Fractal Geometry		٤	١٦
	Classrooms	Shearing and Reflection in 2D		٤	١٧

7. 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 Written Tests, Oral Tests, Daily Posts, Completion of Assignments

	8. Learning and Teaching Resources
Computer Graphics Principles and Practice Third Edition John F. Hughes	**Required textbooks (methodology if (available**
Computer Graphics Principles and Practice Third Edition- Computer Graphics C_version Interactive Computer Graphics (a top down approach)	**Main References (Sources)**
Computer Graphics Principles and Practice Third Edition	**Recommended books and references (...scientific journals, reports)**
Ahmed A. Mostfa - YouTube	**Electronic References, Websites**

Course Description Form

1. Course Name:	
Software Engineering	
2. Course Code:	
CS305	
3. Semester / Year:	
Year	
4. Description Preparation Date:	
15/9/2024	
5. Available Attendance Forms:	
Weekly / Theoretical	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours/4 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Ziadoon Abdullah Otaiwi Email: **ziadoonotaiwi@uohamdaniya.edu.iq**	
8. Course Objectives	
Course Objectives	The objectives of a software engineering course vary depending on the course content and level of education, but in general, the objectives may include: Understanding software engineering principles: The course aims to introduce students to software engineering concepts and the foundations upon which they are based, such as software design, development, testing, and software project management. Developing programming skills: The course seeks to improve students' programming skills through practicing coding and understanding the basic concepts o programming languages and technologies used in software development. Learning software design techniques: Students learn the concepts and methods used in effective and organized software design, helping them develop high-quality and maintainable software. Analyzing and understanding requirements: Students learn how to interact with customers and understand their requirements to properly define and document software requirements. Applying project management concepts: Students learn how to effectively plan, organ and manage software development projects, including resource management, work schedules, and risk assessment. Acquiring skills in dealing with development teams: Students learn how to communic and collaborate with development team members and achieve coordination and comm understanding to achieve project objectives. Enhancing analytical and programming reasoning skills: Students develop the ability to analyze programming problems and use reasoning to find effective and innovative solutions.

	Enhancing awareness of security, privacy, and ethics issues: Students learn about security, privacy, and ethics issues related to software development and deployment, and learn how to apply security, privacy, and ethics practices to their software projects. These objectives aim to provide students with the knowledge and skills necessary to achieve success in the field of software engineering and develop high-quality, relia software.

9. Teaching and Learning Strategies

Strategy	A- Cognitive Objectives Software engineering objectives vary and are constantly evolving, but the main cognitive objectives include: Understanding computational processes: The software engineering program aims to understand software development and improvement processes, including the methods, tools, and concepts used. Software design: This objective includes understanding how to design software to meet user needs and functional and non-functional requirements. Software development: This objective includes understanding the software development process and using coding, testing, and project management techniques to efficiently implement the specified design. Quality management: Software engineering aims to ensure the quality of software produced through the use of quality standards, quality management, and quality assurance. Performance improvement: The software engineering program aims to improve software performance through the use of performance and continuous improvement techniques. Project management: This objective includes understanding how to effectively manage software development projects, including planning, organizing, controlling, evaluating. Continuous learning: The software engineering program encourages continuous learning keeping abreast of technological developments and new methods in the field of software development.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	2	Cognitive a scientific	Introduction, S/W definition	Theoretical	Quiz
2	2	Cognitive a scientific	S/W characteristics, S/W applications	Theoretical	Individualized Questions
3	2	Cognitive a scientific	S/W Crisis, S/E definition	Theoretical	Individualized Questions
4	2	Cognitive a scientific	Characteristics of engineering, goals of S/W	Theoretical	Individualized Questions
5	2	Cognitive a scientific	S/W life Cycle	Theoretical	Individualized Questions

6	2	Cognitive a scientific	Linear Sequential model	Theoretical	Individualized Questions
7	2	Cognitive a scientific	Prototyping model	Theoretical	Individualized Questions
8	2	Cognitive a scientific	Incremental model Spiral model	Theoretical	Individualized Questions
9	2	Cognitive a scientific	Requirements analysis & definition, Requirements Specification	Theoretical	Individualized Questions
10	2	Cognitive a scientific	Software Specification, Software Requirements document	Theoretical	Individualized Questions
11	2	Cognitive a scientific	Formal Requirements: structure analysis	Theoretical	Individualized Questions
12	2	Cognitive a scientific	Analysis model objectives	Theoretical	Individualized Questions
13	2	Cognitive a scientific	The elements of analysis model	Theoretical	Individualized Questions
14	2	Cognitive a scientific	Data modeling	Theoretical	Individualized Questions
15	2	Cognitive a scientific	Creation of ERD, DFD	Theoretical	Individualized Questions
16	2	Cognitive a scientific	Exam	Theoretical	Exam
17	2	Cognitive a scientific	Software design: Software design definition	Theoretical	Individualized Questions
18	2	Cognitive a scientific	Activities of S/W design: Data Design, Architectural design	Theoretical	Individualized Questions
19	2	Cognitive a scientific	Interface design, Procedural design	Theoretical	Individualized Questions
20	2	Cognitive a scientific	Effective modular design: Functional independence, Cohesion, Coupling	Theoretical	Individualized Questions
21	2	Cognitive a scientific	Introduction to object oriented design	Theoretical	Individualized Questions
22	2	Cognitive a scientific	Top – down & Bottom – up design methods	Theoretical	Individualized Questions
23	2	Cognitive a scientific	Real-time design concepts	Theoretical	Individualized Questions
24	2	Cognitive a scientific	Software testing: the primary objective of S/W testing, system testing goals	Theoretical	Individualized Questions
25	2	Cognitive a scientific	Unit-testing, integration testing, system testing	Theoretical	Individualized Questions
26	2	Cognitive a scientific	Categories of system testing techniques: Black& White- box testing	Theoretical	Individualized Questions

27	2	Cognitive a scientific	Alpha testing, Beta testing	Theoretical	Individualized Questions
28	2	Cognitive a scientific	Project planning	Theoretical	Individualized Questions
29	2	Cognitive a scientific	Team organization & management	Theoretical	Individualized Questions
30	2	Cognitive a scientific	Quality Assurance: Quality Concept	Theoretical	Exam

11.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.

- Exams
- Student feedback
- Oral assessment by involving students in discussions
- Quizzes

Professionally and individually configure technical reports

12.Learning and Teaching Resources

Required textbooks (curricular books any)	
Main references (sources)	Software Engineering: A Practitioner's Approach
Recommended books and references (scientific journals, reports...)	http://www.rspa.com/index.html
Electronic References, Websites	https://www.mheducation.com/highered/product/software-engineering-a-practitioners-approach-pressman.html

Curriculum Development Plan – Software Engineering

Unit / Topic	Learning Outcomes	Teaching & Learning Methods	Assessment Methods
1. Introduction to SE & Software Crisis	Define software, SE, and explain key characteristics	Lecture, discussion	Quiz / short assignment
2. Software Life Cycle Models (Waterfall, Prototyping, Incremental, Spiral)	Compare and evaluate different SDLC models	Lecture, case studies	Midterm exam questions
3. Requirements Engineering & Specification (SRS, ERD, DFD)	Document and model requirements using analysis techniques	Lab, group exercise	Assignment (SRS/ERD/DFD)
4. Software Design (data, architecture,	Apply design principles (cohesion,	Lecture + UML lab	Project design deliverable

modularity, OO design)	coupling, modularity)		
5. Software Testing (black-box, white-box, alpha, beta)	Apply testing strategies at different levels (unit, integration, system)	Lab (test cases, tools)	Lab report + exam
6. Project Planning & Quality Assurance	Plan a small project, manage tasks, apply QA concepts	Group project, seminar	Group project report & presentation
Capstone / Integration	Demonstrate complete SE cycle in practice	Team project	Final project evaluation

Assessment Distribution

- Quizzes & Assignments: 20%
- Midterm Exam: 20%
- Group Project: 20%
- Final Exam: 40%

Course Description Form

1. Course Name:

Computer architecture

2. Course Code:

CS304

3. Semester / Year:

Yearly

4. Description Preparation Date:

9/2/2025

5. Available Attendance Forms:

Attend classrooms

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

60 hours/4 units

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

Name: **Firas Abdulrahman Yousif**
Email: **firasabdulrahman@uohamdaniya.edu.iq**

8. Course Objectives

Course Objectives	**.To introduce students to the internal structure of the comput and how the memory and processor work with external and internal peripheral devices.**

9. Teaching and Learning Strategies

Strategy	**The student acquires technical information about the internal structure of the computer and how it works.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٢	Blackboard +data show	Introduction of computer architecture		Daily exams
٢	٢		Memory system architecture		
٣	٢				

٤	٢		Memory devices characteristics-RAM units components		
٥	٢		RAM organization -one dimensional memory **Segment memory**		
٦	٢		Two dimensional memory		
٧	٢		RAM design **Logic instructions**		
٨	٢		Cache memory		
٩	٢		Principles of locality of reference		
١٠	٢		Structure of cache memory-cache design		
١١	٢		Performance of cache memory		
١٢	٢		Cache mapping/ Direct cache mapping		
١٣	٢		Associative cache mapping **Stack concept & application**		
١٤	٢		Set associative cache mapping		
١٥	٢		Set cache mapping part2		
١٦	٢		Replacement algorithms -write policies		
١٧	٢		Virtual memory -Virtual memory principle		
١٨	٢		Paging technique		

١٩	٢		Translation look aside buffer		
٢٠	٢		Segmentation technique -segmentation with paging		
٢١	٢		Direct memory access(DMA) -DMA controller-Types of DMA		
٢٢	٢		Central processing unit(CPU) -single bus organization -multi bus organization		
٢٣	٢		CPU structure -register organization		
٢٤	٢		Control unit -hard ware control unit -micro programmed unit		
٢٥	٢		Branching		
٢٦	٢		Pipelining -cycle time of pipelining process -Pipeline Latency		
٢٧	٢		Types of microinstructions -horizontal microinstructions -vertical microinstructions		
٢٨	٢		Input and output system -i/o port		
٢٩	٢		Addressing i/o		
٣٠	٢		Instructions& programmed i/o		
			Execution of complete instructions		

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any	
Main references (sources)	Basic Computer Architecture
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	**https://www.cse.iitd.ac.in/~srsarangi/archbook/archbook.pdf**

Course Description Form

١. Course name:	
Counseling and mental health	
٢. Course code:	
HAEPSCS25F 306	
٣. Chapter/Year:	
2025-2024	
٤. Date of preparation of this description:	
15/9/2024	
٥. Available attendance forms:	
In-person education	
٦. Number of study hours (total) / Number of units (total)	
units4 / hour 60	
٧. Course Supervisor Name (if more than one name is mentioned)	
Ibrahim 1977 @uohamdaniya.edu.iq:Name: M.M. Ibrahim Mamiq Sultan Email	
٨. Course objectives	
Course objectives	١. With the concepts of guidance and mental health from (the goals of guidance and mental health, its terminology and the most important theories). (٢. The field of the teacher-guide and educational counselor and his role in helping the student achieve psychological, educational and social harmony. ٣. Means of collecting information, their importance, advantages and disadvantages of each. ٤. Parent-teacher councils and their role in educational guidance.
٩. Teaching and learning strategies	
Strategy	١. Understanding and comprehension. ٢. Methods of solving complex situations and distinguishing the correct cognitive aspects. ٣. Brainstorming techniques .

٩. Learning and self-discovery through extracurricular and curricular activities.	

١٠. 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 application	2	Fifth

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, ((autobiography	Theoretical knowledge and practical educational application	2	twelfth
Feedback via direct questions	Lecture, discussion and dialogue	Methods of collecting information (tests	Theoretical knowledge and practical	2	thirteenth

		and measures, observation, ((interview	educational application		
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 ١٦
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	2	Nineteenth week

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

	and dialogue	cancellation, compensation	practical educational application		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 ٣٠

١١. Course Evaluation

The grade is distributed out of ١٠٠ based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.

١٢. Learning and teaching resources

Required textbooks (methodology if available)	Principles of Guidance and Psychological Counseling, Sami Muhammad Malham, ٢٠١٠, Amman, Dar Al Masirah Publishing and Distribution. - Zahran, Hamed Abdel Salam, ١٩٨٠, Guidance and Psychological Counseling, Alam Books, Cairo.
Primary References (Sources)	Psychological Guidance and Educational Guidance, Mustafa Mahmoud Al-Imam (١٩٩١), University of Baghdad - Principles of psychological counseling for psychological counselors, Muhammad Ahmad Mashaqa (٢٠٠٨), Oman - Dar Al Manahj for Publishing and Distribution.

Guidance and Psychological Counseling, Hamed - Zahran (٢٠٠٥) Cairo The world of books	
Personality Psychology, Dawood Aziz Hanna, and - Nazim Hashim Al-Obaidi, ١٩٩٠, University of Baghdad	Recommended mainstream books and references (scientific journals, reports)
Al-Noor Library (an electronic library) is free on the - and contains various types of Google search engine . specialized sources	Electronic references, websites

Course Description Form

1. Course name:
Curricula and teaching methods
2. Course code:
CS306
3. Semester/Year: Annual System
2024-2025
4. Date of preparation of this description:
1/9/2024
5. Available attendance forms: Daily morning attendance
In-person education
6. Number of study hours / Number of units
60 hours / 4 units
7. Course Supervisor Name (if more than one name is mentioned)
Name: M.M. **Zainab Abdullah Mohammed** Email: **zainab.abdullah@uohamdaniya.edu.iq**
8. Course objectives

Course objectives	The curriculum and teaching methods course aims to enable the student to: 1. Recognize the teacher's message in society. 2. Deduce the responsibilities of the teacher in society. 3. Identify aspects of teacher preparation.

	4. Understand the concept of teaching competence. 5. Classifies the teaching competencies required for the teacher.
9. Teaching and learning strategies	
Strategy	1. Lectures of all kinds. 2. Dialogue, discussion and question and answer sessions. 3. Collaborative learning. 4. Project method. 5. Numbered heads strategy.

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

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

Feedback	discussion, lecture, debate	Types of calendar	Enable students to identify and apply types of educational assessment.	2	7
Feedback	discussion, lecture, debate	TypesObjectives	Students were able to identify the types ofEducational objectivesand its field applications	2	8
Feedback	discussion, lecture, debate	Sources of educational objectives	Students were able to identifySources of derivation of educational objectives	2	9
Feedback	discussion, lecture, debate	roleIn formulating the behavioral objective	Students were able toDefining the formulation of behavioral objectives	2	10
a test	discussion, lecture, debate	Teaching objectives	Students were able to identifyClassification of behavioral objectives	2	11

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

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

	lecture, debate		of the teacher during collaborative work		
Feedback	discussion, lecture, debate	Teaching methods	Enabling students toMaster one method in reality	2	23
Feedback	discussion, lecture, debate	Teaching methods	Enabling students toApplying the standard method in teaching	2	24
a test	discussion, lecture, debate	Teaching methods	Enabling students toModel teaching steps	2	25
Feedback	discussion, lecture, debate	Teaching methods	Enabling students to apply methodsIn teaching	2	26
Feedback	discussion,	Field visits	Enabling students to identifyOn field visits	2	27

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

11- Learning and teaching resources	
1- Required textbooks	-General teaching methods Its planning and educational applications,Walid Ahmed,Jaber,Dar Al Fikr for Publishing and Distribution 2013

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

Course Description Form

1. Course Name:
Operating System
2. Course Code:
CS400
3. Semester / Year:
Annual
4. Description Preparation Date:
1/9/2024
5. Available Attendance Forms:
Weekly – Theoretical Lectures and Practical Sessions
6. Number of Credit Hours (Total) / Number of Units (Total)
120 hours (60 theoretical + 60 practical) **Credit Units: 6**
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Noora Hashim Mohammed Email: noora@uohamdaniya.edu.iq
8. Course Objectives

Course Objectives	**-Fundamental Understanding** **To understand the basic concepts, structure, and functions of operating syste** **To study how operating systems act as an interface between hardware and users.** **Process & Thread Management** **To learn about processes, threads, and CPU -scheduling.** **To understand concepts of concurrency, synchronization, and deadlocks.** **-Memory Management** **To study various memory management techniques such as paging, segmentation, and -virtual memory.** **-File & Storage Management** **To understand file systems, directory structures, allocation methods, and storage management.** **-Input/Output Systems** **To learn about I/O management, device drivers, and interrupt handling.** **-Security & Protection** **To explore mechanisms for protecting processes, memory, and files.** **To introduce concepts of authentication, access control, and system security.** **-Distributed & Modern OS Concepts** **To gain knowledge of distributed systems, cloud operating systems, and mobil OS fundamentals.** **-Practical Skills** **To develop skills in system programming and -shell scripting.**

	• To provide hands-on experience in implementing and simulating operating system components.

9. Teaching and Learning Strategies

Strategy	**Understanding with hands-on practice through problem-solving, simulations, and case studies of real OS implementations.** **١. Conceptual Understanding First** **Start with the role of OS as a resource manager.** **Use real-life analogies (e.g., CPU scheduling like waiting in a queue, memory allocation like a hostel room assignment).** **Build from simple to complex: process → threads → scheduling → memory → file systems → security** **٢. Visualization & Simulation** **Use diagrams and animations for scheduling algorithms, memory allocation, and deadlocks.** **Simulate algorithms with tools (e.g., Gantt charts for scheduling).** **Try out OS simulators (like LittleMan Simulator, NachOS, or Minix).**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 - 2	٤	Management, Efficiency, Convenience, Security, Architecture	Introduction Definition, goals, influence On Computer architecture	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
3 - 4	٤	reduce idle time, improve throughput, make computers easier to use.	History of operating system Bare machines, advent of I/O devices, batch processing, off-line processing, spooling, buffering	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

5 - 6	٤	automate sequential job execution and reduce CPU idle time, resulting in improved system efficiency despite the lack of user interaction during processing	B-Process	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
7 - 8	٤	required to efficiently allocate CPU time among processes, maximizing utilization and minimizing waiting and turnaround times, enabling learners to understand, compare, and apply various scheduling algorithms and evaluate their performance.	C-CPU scheduling	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
9 - 10	٤	managing and preventing situations where processes are permanently waiting for each other's resources, enabling learners to identify, analyze, and apply strategies for prevention, avoidance,	D-Deadlocks	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

		detection, and recovery			
11 - 12	٤	allocate and manage a computer's memory among processes, enabling learners to understand techniques for allocation, tracking, protection, and optimization to maximize system performance and prevent conflicts	E-Memory Management	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
13 - 14	٤	manage and allocate memory by dividing it into fixed-size blocks, enabling learners to understand how logical memory is mapped to physical memory, reduce fragmentation, and support effective memory utilization	Paging	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
15 - 16	٤	organize, allocate, and access secondary storage, enabling learners to understand file systems, disk scheduling, and techniques to optimize storage	F-Storage Management	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

		utilization and data retrieval			
17 - 18	٤	safeguard system resources and data from unauthorized access or misuse, enabling learners to understand access control, security mechanisms, and strategies to ensure integrity, confidentiality, and safe operation of the system	Protection	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
19 – 20	٤	store, organize, and manage files on storage devices, enabling learners to understand file allocation methods, directory structures, access control, and techniques to optimize storage and retrieval performance	File system Implementation	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
21 – 22	٤	manage large volumes of data on secondary and tertiary storage devices, enabling learners to understand storage hierarchy, device characteristics,	G-Mass storage Structure	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

		data access methods, and techniques for efficient storage and retrieval			
23 – 24	٤	organize and manage data on disk storage, enabling learners to understand disk organization, tracks, sectors, cylinders, and techniques for effective data access, allocation, and retrieval	Disk structure	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
25 – 26	٤	manage the order of read/write requests to improve disk efficiency and reduce seek time, enabling learners to understand and apply algorithms such as FCFS, SSTF, SCAN, C-SCAN, LOOK, and C-LOOK to optimize disk performance and response time	Disk scheduling FCFS, SSTF, SCAN, C-SCAN, LOOK, C-LOOK	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities
27 – 28	٤	allocate, organize, and maintain disk storage, enabling learners to understand partitioning, file systems, disk	Disk management	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

		scheduling, and techniques to optimize storage utilization, access speed, and data reliability			
29 – 30	٤	efficiently use secondary storage as an extension of main memory, enabling learners to understand swapping techniques, memory allocation, and strategies to optimize system performance and handle process execution when physical memory is limited	Swap-space management	- Theoretical lectures (PDF, power point). -Practical laboratory sessions. -Group projects. -Class discussions and Q&A sessions.	-Written Exams/ Quizzes. -Practical Assignments / Lab Work. - Project -Class Participation and Activities

11. Course Evaluation

The grade is distributed based on the tasks assigned to the student, including daily preparation, quizzes, oral and monthly tests, written assignments, lab reports, etc.

Active Class Participation

Homework Assignments

Attendance

Laboratory Tasks

Quizzes / Tests

Midterm and Final Exams (Theoretical and Practical)

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Operating System Concepts Authors: Abraham Silberschatz, Peter Baer Galvin, Greg Gagne Publisher: Wiley Latest Edition: 10th Edition (2020)
Main references (sources)	-Lectures delivered by the course instruct -Books available in the college library
Recommended books and references (scientific journals, reports...)	Scientific Journals and Articles ACM Transactions on Computer Systems (TOCS) Topics: OS design, process scheduling, memory management, storage systems. Highly cited research papers on OS performance and architectures. IEEE Transactions on Computers / IEEE Transactions on Parallel and Distributed Systems Topics: CPU scheduling, deadlocks, multiprocessor OS, disk scheduling. Reports on experimental and theoretical C studies. Journal of Systems and Software Topics: File systems, OS implementation, memory management techniques. Practical implementations and system cas studies. Elsevier Computer Science Journals (e.g., Future Generation Computer Systems)

	Topics: Mass storage, protection, virtual memory, modern OS trends. Useful for recent developments in OS desi
Electronic References, Websites	• **Linux Kernel Documentation** – https://www.kernel.org/doc/html/latest/ • Official documentation for Linux OS internals, including process scheduling, memory, and file systems. • **Microsoft Docs – Windows OS** – https://learn.microsoft.com/en-us/windows/win32/sysinfo/ • Detailed reference on Windows OS architecture, memory, disk, and process management. • **GeeksforGeeks – Operating Systems** – https://www.geeksforgeeks.org/operating-systems/ • Tutorials on CPU scheduling, memory management, deadlocks, and disk scheduling. • **TutorialsPoint – Operating Systems** – https://www.tutorialspoint.com/operating_system/index.htm • Beginner-friendly explanations with diagrams and examples of OS concepts. • **IEEE Xplore Digital Library** – https://ieeexplore.ieee.org/ • Access to scientific papers and research articles on operating systems, scheduling, storage, and memory management.

Course Description Form

1. Course Name
Computer Networks
Course Code
CS401
Semester/Year
annual
Date of preparation of this description
2025 /2/2
Available Forms of Attendance
Attendance at the university weekly / theoretical and practical
2. Number of Hours (Total) / Number of Credits (Total)
120 Hours / 6 Units
3. Course administrator name (if more than one name mentioned)
Name: Prof. Dr. Nawras Younis Enad **Email**nawrasyounis@gmail.com **Alaa Salem Abdulrazaq alaasalimabd161194@uohamdaniya.edu.iq**
4. Course Objectives

Through the Computer Networks course, the student will learn about the protocols used in networks, the basics of the communication system, how to communicate through the network, identify the devices connected to it, exchange information, and send and receive the packet. Preparing and qualifying scientifically and practica qualified graduates to meet the requirements of the lab market in both the public and private sectors	**Course Objectives**

Achieving leadership and excellence in the field of IT computer networks Acquire the skills necessary to design, configure, a implement secure and efficient computer networks. Develop the student scientifically and culturally in t field of networks and practical application in connect networks and protocols.	

5. Teaching and Learning Strategies

A1. The student's knowledge in the field of computer networks, their types, and the methods of connecting them. A2. Knowledge of the methods of dealing with these networks A3. The student identifies the most important basic characteristics of any type of network. A4- The student knows the various ways to design any type of network through the experiments he performs. A5- Knows how to name the essential parts that make up any network A-6Layers of the Network Model Model A7. TCP/IP Practical Model Layers A8 - Devices and equipment for networks, applications andadvanced tools B1 – Network software tools such astracer packet B2 – Networking hardware and physical equipment such as router and switch B3– Connecting Network Devices and Ways to Deal with Them B4 – Knowledge Skills – Recall B5 – Skills of remembrance and analysis B6 - Skills of Evolution	**Strategy**

6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Individualized Targeted Questions	Theoretical + Practical	-Living In Network - What Is Network - Data Communication - The Fundamental Of a Communication System - Transmission Mode - Serial And Parallel	Cognitive	2 Theoretical + 2practical	1
Individualized Targeted Questions	Theoretical + Practical	-Communication Over The Network - The Element Of Communication - Communicating The Messages - Component Of The Network	Cognitive	2 Theoretical + 2practical	2
Individualized Targeted Questions	Theoretical + Practical	- Network Media - LAN, WAN, And Internet Network - Network Protocol	Cognitive	2 Theoretical + 2practical	3
Individualized Targeted Questions	Theoretical + Practical	- Network Devices - Network Interface Card - Repeater - Hub	Cognitive	2 Theoretical + 2practical	4
Individualized Targeted Questions	Theoretical + Practical	Switch - Router - Gateway	Cognitive	2 Theoretical + 2practical	5

Individualized Targeted Questions	Theoretical + Practical	- Layered Models - The Benefits Of Layered Model - Protocol And Reference Models - OSI Model	Cognitive	2 Theoretical + 2practical	**6**
Individualized Targeted Questions	Theoretical + Practical	- TCP/IP Model - Comparing OSI & TCP/IP Model	Cognitive	2 Theoretical + 2practical	**7**
Individualized Targeted Questions	Theoretical + Practical	- Application Layer Functionality And Protocol - User Application - Services - Application Protocol - Examples	Cognitive	2 Theoretical + 2practical	**8**
Individualized Targeted Questions	Theoretical + Practical	- Client / Server Model - Servers	Cognitive	2 Theoretical + 2practical	**9**
Individualized Targeted Questions	Theoretical + Practical	- Transport Layer - TCP & UDP - Port Address	Cognitive	2 Theoretical + 2practical	**10**
Individualized Targeted	Theoretical + Practical	- TCP: Communication With Reliability	Cognitive	2 Theoretical + 2practical	**11**

Questions					
Individualized Targeted Questions	Theoretical + Practical	- UDP: communication with low overhead	Cognitive	2 Theoretical + 2practical	**12**
Individualized Targeted Questions	Theoretical + Practical	-Network layer - IPv4 - Dividing Host Into Groups	Cognitive	2 Theoretical + 2practical	**13**
Individualized Targeted Questions	Theoretical + Practical	- Network layer - IPv4 - Dividing Host Into Groups - examples	Cognitive	2 Theoretical + 2practical	**14**
Individualized Targeted Questions	Theoretical + Practical	- Addressing The Network - IPv4 Address - IPv4 Address For Different Purposes	Cognitive	2 Theoretical + 2practical	**15**
Individualized Targeted Questions	Theoretical + Practical	- Special Addresses - Assigning Addresses - Class full and Classless	Cognitive	2 Theoretical + 2practical	**16**
	Theoretical + Practical	application	application	2 Theoretical +	**17**

				2practical	
	Theoretical + Practical	application	application	2 Theoretical + 2practical	**18**
	Theoretical + Practical	application	application	2 Theoretical + 2practical	**19**
	Theoretical + Practical	application	application	2 Theoretical + 2practical	**20**
	Theoretical + Practical	application	application	2 Theoretical + 2practical	**21**
	Theoretical + Practical	application	application	2 Theoretical + 2practical	**22**
Individualized Targeted Questions	Theoretical + Practical	- Calculate Addresses - Testing The Network Layer	Cognitive	2 Theoretical + 2practical	**23**
Individualized Targeted	Theoretical + Practical	- Data Link Layer - Accessing The Media	Cognitive	2 Theoretical + 2practical	**24**

Questions					
Individualized Targeted Questions	Theoretical + Practical	- MAC Techniques - Addressing And Framing Data	Cognitive	2 Theoretical + 2practical	**25**
Individualized Targeted Questions	Theoretical + Practical	- Physical Layer - Communication Signals - Transmitting Media	Cognitive	2 Theoretical + 2practical	**26**
Individualized Targeted Questions	Theoretical + Practical	- Representing Bits - Connecting Communication	Cognitive	2 Theoretical + 2practical	**27**
Individualized Targeted Questions	Theoretical + Practical	- Ethernet - Overview Of Ethernet - IEEE Standard	Cognitive	2 Theoretical + 2practical	**28**
Individualized Targeted Questions	Theoretical + Practical	- Communication Through The LAN - Ethernet Frame - Ethernet Mac	Cognitive	2 Theoretical + 2practical	**29**
test	Theoretical + Practical	Quiz	assessment	2 Theoretical +	**30**

				2practical	

7. 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 • **Exams of all kinds** • **Student feedback** • **Oral assessment by involving students in discussions** • **Quizzes** **Professionally and individually configure technical reports**

	8. Learning and Teaching Resources
	Required textbooks (methodology if available)
Behrouz A. Forouzan ," Data Communications and Networking ",Fourth Edition, 2007 ,(McGraw-Hill Forouzan networking series)	**Main References (Sources)**
	Recommended books and references (scientific journals, reports...)
	Electronic References, Websites

Course Description Form

1. Course Name
Data Security
Course Code
CS402
Semester/Year
annual
Date of preparation of this description
2025 /2/2
Available Forms of Attendance
Attendance at the university weekly / theoretical and practical
2. Number of Hours (Total) / Number of Credits (Total)
120 Hours / 6 Units
3. Course administrator name (if more than one name mentioned)
Name: Dr. Samah Fakhri Aziz Emailsamah.fakhri@uohamdaniya.edu.iq Hani Ghassan Abdel Karim hani.alsaigh@uohamdaniya.edu.iq
4. Course Objectives

Through the Data Security course, the student learns how to protect personal information from unauthorized access and learns about the algorithms used in the encryption and decryption process Protecting information from hackers and hacking, as well as identifying the most important security services and mechanisms used to implement these services against security attacks. Study some principles of encryption and cracking methods Study on types of security threats	**Course Objectives**

Study of some traditional and modern encryption systems	

5. Teaching and Learning Strategies

A1. Understand the principles and mechanics of security services. A2- Understanding the network security model. A3. Understand the algorithms of classical and modern encryption systems and their mathematical principles, and the ways in which they are designed and built. A4- Understanding the methods and methods of breaking codes. A5. Understand the methods and methods of carrying out attacks and how to exploit security vulnerabilities in computer systems and networks and methods of protecting against them (detect, repel, mitigate, and prevent). A6- Knowledge of programming and implementation of some encryption algorithms. • Mathematical understanding of the principles of number theory and alphabets used in coding algorithms. • Understand the principles of encryption and cracking methods. • Understand how to carry out attacks on computer systems and networks • Understand how to exploit vulnerabilities and how to protect against them. • Programming some encryption algorithms.	**Strategy**

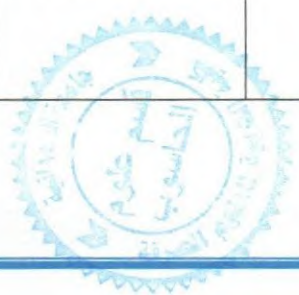
6. Course Structure

Evaluation Method	Learning method	Unit Name or Subject	Required Learning Outcomes	Hours	Week
Quiz	Theoretical + Practical	Basic Data Security Concepts	Cognitive	2 Theoretical	1

				+ 2practical	
Individualized Targeted Questions	Theoretical + Practical	Aspects of Information Security	Cognitive	2 Theoretical + 2practical	**2**
Individualized Targeted Questions	Theoretical + Practical	Computer Crimes	Cognitive	2 Theoretical + 2practical	**3**
Individualized Targeted Questions	Theoretical + Practical	Information System Security Classification	Cognitive	2 Theoretical + 2practical	**4**
Individualized Targeted Questions	Theoretical + Practical	Classification based on Function	Cognitive	2 Theoretical + 2practical	**5**
Individualized Targeted Questions	Theoretical + Practical	Type of Attacks	Cognitive	2 Theoretical + 2practical	**6**
Individualize	Theoretical + Practical	Networking Simple Principle	Cognitive	2 Theor	**7**

d Targeted Questions				etical + 2practical	
Individualized Targeted Questions	Theoretical + Practical	Steps to Better Security	Cognitive	2 Theoretical + 2practical	**8**
Individualized Targeted Questions	Theoretical + Practical	Steps to Better Security	Cognitive	2 Theoretical + 2practical	**9**
Individualized Targeted Questions	Theoretical + Practical	Networked Storage Security Guidelines	Cognitive	2 Theoretical + 2practical	**10**
Individualized Targeted Questions	Theoretical + Practical	Encryption	Cognitive	2 Theoretical + 2practical	**11**
Individualized Targeted Questions	Theoretical + Practical	Symmetric and Public Key Systems	Cognitive	2 Theoretical + 2practical	**12**

Individualized Targeted Questions	Theoretical + Practical	The Security Challenge	Cognitive	2 Theoretical + 2practical	**13**
Individualized Targeted Questions	Theoretical + Practical	The Future of Security	Cognitive	2 Theoretical + 2practical	**14**
Individualized Targeted Questions	Theoretical + Practical	Steganography	Cognitive	2 Theoretical + 2practical	**15**
Individualized Targeted Questions	Theoretical + Practical	Historical secret key cryptography	Cognitive	2 Theoretical + 2practical	**16**
	Theoretical + Practical	Conventional systems	Cognitive	2 Theoretical + 2practical	**17**
	Theoretical + Practical	Column and Double Transpostion	Cognitive	2 Theoretical + 2practical	**18**



	Theoretical + Practical	Caesar Cipher	Cognitive	2 Theoretical + 2practical	**19**
	Theoretical + Practical	Multiplicative Cipher	Cognitive	2 Theoretical + 2practical	**20**
	Theoretical + Practical	Affine Cipher	Cognitive	2 Theoretical + 2practical	**21**
	Theoretical + Practical	Keyword Mixed	Cognitive	2 Theoretical + 2practical	**22**
Individualized Targeted Questions	Theoretical + Practical	Playfair Cipher	Cognitive	2 Theoretical + 2practical	**23**
Individualized Targeted Questions	Theoretical + Practical	One-time pads	Cognitive	2 Theoretical + 2practical	**24**
Individualized	Theoretical + Practical	Stream Cipher	Cognitive	2 Theoretical	**25**

Targeted Questions				+ 2practical	
Individualized Targeted Questions	Theoretical + Practical	Linear Feedback Shift Register	Cognitive	2 Theoretical + 2practical	**26**
Individualized Targeted Questions	Theoretical + Practical	Feedback Function & Random Sequence	Cognitive	2 Theoretical + 2practical	**27**
Individualized Targeted Questions	Theoretical + Practical	Non-Linear Feedback Shift Register	Cognitive	2 Theoretical + 2practical	**28**
Individualized Targeted Questions	Theoretical + Practical	Block Cipher	Cognitive	2 Theoretical + 2practical	**29**
test	Theoretical + Practical	Data Encryption Standard	Cognitive	2 Theoretical + 2practical	**30**
7. 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 • **Exams of all kinds** • **Student feedback** • **Oral assessment by involving students in discussions** • **Quizzes** **Professionally and individually configure technical reports**

	8. Learning and Teaching Resources
	Required textbooks (methodology if available)
1- William Stalling," cryptography and network security principles and practice " , 6th ed. , 2015, Pearson.	**Main References (Sources)**
	Recommended books and references (scientific journals, reports...)
https://www.pluralsight.com/courses/learn-program-cplusplus	**Electronic References, Websites**

Course Description Form

1. Course Name:
Digital Image Processing
2. Course Code:
CS404
3. Semester / Year:
Year
4. Description Preparation Date:
1 – 9 – 2024
5. Available Attendance Forms:
Theoretical + Practical (In-Person)
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours theory + 60 hours practical / 6 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Omar Farook Mohammad Email: ofmalobaidy@uohamdaniya.edu.iq Name: Asst. Lecturer Ahmed Abdulrahman Idris Email: ahmed-alkaddo@uohamdaniya.edu.iq

8. Course Objectives	
Course Objectives	a. Learn the digital image processing techniques and their uses. b. Learn the basics of digital images and analyze them through the use of different techniques c. Dealing with images, whether images are in the space or life field d. Learn the transformations and techniques for enhancing digital images. e. Restore images and how to segment it. f. Using a set of transformations, such as Fourier Transform, specialized in analyzing th characteristics and properties of images. g. Develop the student's ability to write software in digital image processing.
9. Teaching and Learning Strategies	
Strategy	a. Introducing image processing, imaging systems, image representation, and the basics of digital images b. Improving images, whether in the spatial or frequency domain c. Converting images from one domain to another

	d. Image retrieval, image segmentation, and object recognition e. Image compression f. Color image processing

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 - 2	4	Introduction to Image Processing	Introduction to Image Processing	PDF power point Video	Daily and monthly exams
3 - 4	4	The basics of displaying digital images and what processes can be applied to digital images	Digital Image Fundamental	PDF power point Video	Daily and monthly exams
5 - 7	6	Determining important areas in images, zooming, and performing certain processes on it	Image Analysis	PDF power point Video	Daily and monthly exams
8 - 9	6	Learning ways to enhance the digital images in all medical, space, and other fields	Image Enhancement in the Spatial Domain	PDF power point Video	Daily and monthly exams
10 - 12	6	Learning ways to enhance the digital images in the frequency domain	Image Enhancement in the Frequency Domain	PDF power point Video	Daily and monthly exams
13 - 15	6	Learn to reduce image size by using Lossy or lossless image compression	Image Compression	PDF power point Video	Daily and monthly exams
16 - 18	6	Learn to apply the Wavelet method to digital images and what its uses	Wavelet Transform	PDF power point Video	Daily and monthly exams
19 - 21	6	Learn to restore distorted images	Image Restoration	PDF power point Video	Daily and monthly exams
22 - 24	10	Learn the process of partition digital images based on point, line, or edge	Image Segmentation	PDF power point Video	Daily and monthly exams
25 - 30	6	Learn the basis for extracting features of interest in an image.	Color Image Space	PDF power point Video	Daily and monthly exams

11. Course Evaluation

- Quiz
- Homework
- Middle and final exams (theoretical and practical)
- Interaction during the lecture
- Reports

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• R. C. Gonzalez and R. E. Woods., "Digital Image Processing", third edition. ISBN: 0-13-168728-x, 978-0-13-168728-8, Pearson-Prentice-Hall, 2008. www.imageprocessingplace.com : (website) • R. C. Gonzalez, R. E. Woods, S. L. Eddins, "Digital Image Processing using Matlab", 2nd edition, ISBN: 0-13-008519-7, Pearson-Prentice-Hall, 2004
Main references (sources)	• Lectures given by the subject teacher • Books available in the college library
Recommended books and references (scientific journals, reports...)	• IEEE Transactions on Image Processing (TIP). • Pattern Recognition (Elsevier). • Computer Vision and Image Understanding (CVIU).
Electronic References, Websites	• ScienceDirect (Elsevier). • SpringerLink (Lecture Notes in Computer Science). • ResearchGate for accessing articles and collaboration.

Course Description Form

1. Course Name

Web Design

Course Code

CS403

Semester/Year

Annual

Date of preparation of this description

2024 /9/ 1

Available Forms of Attendance

Attendance at the university weekly / theoretical and practical

2. Number of Hours (Total) / Number of Credits (Total)

120 Hours / 6 Units

3. Course administrator name (if more than one name mentioned)

Name: Eng. Dr. Mohamed Abbas Kazim Email: mak@uohamdaniya.edu.iq
Eng. Mohamed Abdul Sattar Abdul Ghani mohmd.a.sattar@uohamdaniya.edu.iq

4. Course Objectives

Course Objectives	**The curriculum of the web design course aims to introduce the student to the skills of web design electronic and the basics of programming languages used in web design and ways to improve and develop t**

5. Teaching and Learning Strategies

Strategy	A1- During the academic year, the student learns the basics of digital web design. A2- Understanding the website design material and the languages used. A3- Learn how to think logically and creatively to design websites in different languages. A4- The student learns HTML , Java Scripting, and CSS languages . B1 Learn how to deal with different programming languages for web design. B2- Learn about websites. B3- Familiarity with the basic concepts of website design and how Add colors, adjust the font, insert tables and images, as well as links. B4- Familiarity with how to raise the website to search engines

6. Course Structure

Week	Hours	Required Learning Outcomes	Unit Name or Subject		
First-Second-Third	12 Theoretical + Practical	The student learns the introduction of the Internet and websites and their types	1.1 History of Internet and WWW 1.2 Web Architecture: Client (browser) and Server Web Documents 2.1. Types of Web Documents 2.2. Client-Side Scripting vs. Server-Side Scripting	Lectures PDF power point Video	Daily exams + monthly exams
IV - VII	16 Theoretical + Practical	The student learns the types of programmin g languages used in web design	HTML 3.1 HTML scripting language 3.2 HTML Tags 3.3 Java Scripting	Lectures PDF power point Video	Daily exams + monthly exams
VIII.XIII		Learn the details of designing a full-fledged	Internet System 4.1 DNS	Lectures PDF power point Video	Daily exams + monthly exams

	24 Theoretical + Practical	website and using PHP	4.2 Mail Server 4.3 FTP 4.4 Remote Login 5. PHP Dynamic Language		
Fourteenth and fifteenth	8 Theoretical + Practical	Learn Databases and Their Applications	MySQL Database Server	Lectures PDF power point Video	Daily exams + monthly exams
Sixteenth.	28 Theoretical + Practical	Learn about CSS , its basics, and how to use and apply it in web design	1. Overview and foundations of CSS. 2. What are the benefits of employing CSS in design, and how does it improve the process of creating a page more convenient? 3. Make use of CSS to design a page.	Lectures PDF power point Video	Daily exams + monthly exams
Twenty-third – Week Thirtieth	16 Theoretical + Practical	The student learns the basics of one of the most important web design languages and how to use and apply them	Introduction of JS which consider a programming language and core technology of the Web, alongside HTML and CSS. 99% of websites use JavaScript on the client side for webpage behavior. Web browsers have a dedicated JavaScript engine that executes the client code.	Lectures PDF power point Video	Daily exams + monthly exams

7. 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

- **Freedom to express opposing views is correct.**
- **Participate in scientific discussions.**
- **Help with homework.**
- **Daily attendance and commitment within the lecture hall.**

8. Learning and Teaching Resources

Required textbooks (methodology if available)	Harvey M. Deitel, Tem Nieto, Complete Internet and World Wide Web Programming Training Course, The 2nd Edition.
Main References (Sources)	• **Lectures Delivered by the Subject Teacher** • **Books available in the college library**
Recommended books and references (scientific journals, reports...)	1. All reputable scientific journals that are related to the principles of computers or website programming and design . 2. Porter Scobe, Web Programming And Internet Technologies: An E-Commerce Approach 1 Pap, Cdr Edition 3. Dane Camero , A Software Engineer Learns HTML5, JavaScript and jQuery, Paperback, November 25, 2013 4. Elizabeth Castro, Bruce Hyslop, HTML5 & CSS3 Visual QuickStart Guide, 7th Edition, Online Version 5. Tom Negrino, Dori Smith, Dreamweaver CC: Visual QuickStart Guide
Electronic References, Websites	• Any other materials available on the web

Course Description Form

(Measurement and Evaluation)

١. Course name:	
Measurement and Evaluation	
٢. Course code:	
CS405	
٣. Chapter/Year:	
2025-2026	
٤. Date of preparation of this description:	
1/9/2024	
٥. Available attendance forms:	
In-person education	
٦. Number of study hours (total) / Number of units (total)	
60 hours / 4 units	
٧. Course Supervisor Name (if more than one name is mentioned)	
Asmaa Abdullah Aziz Email: **asmaaabdullahazeez@uohamdaniya.edu.iq**	
٨. Course objectives	
١- The importance of evaluation and measurement and its role in improving the educational process. ٢- Basic concepts in educational measurement and evaluation ٣- Types of achievement tests, advantages and disadvantages of each, and methods of preparing them ٤- Testing methods and the advantages and disadvantages of each ٥- Educational objectives, their types and formulation	**Course objectives**
٩. Teaching and learning strategies	
Self-learning strategy-brainstorming-Problem solving-Cooperative Learning - Active Learning	Strategy

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

Feedback	discussion, lecture, debate	Types of calendar	Enable students to identify and apply types of educational assessment.	2	7
Feedback	discussion, lecture, debate	Types of measurement	Students are able to identify types of measurement and their applications.HField	2	8
Feedback	discussion, lecture, debate	Evaluation and measurement in educational fields	Students are able to identify types of assessment.	2	9
Feedback	discussion, lecture, debate	The role of evaluation in improving education	Enable students to use educational applications for assessment.	2	10
a test	discussion, lecture, debate	Teaching objectives	Enable students to identify the primary objectives of teaching.	2	11
Feedback	discussion, lecture, debate	Measurement and evaluation and their relationship to goals	Enabling students to link measurement and evaluation to educational goals	2	12
Feedback	discussion, lecture, debate	Steps for constructing educational tests	Enable students to identify the main steps for constructing tests.	2	13
Feedback	discussion, lecture, debate	Specifications table	Enabling students to take steps to prepare a specification table in the educational field	2	14
Semi-annual news	discussion, lecture, debate	Statistical concept of tests	Enabling students to understand the main concepts of statistical analysis of different types of tests.	2	15

Feedback	discussion, lecture, debate	Types of tests	Enabling students to identify types of tests	2	16
Feedback	discussion, lecture, debate	Essay tests	Enabling students to identify the types of essay tests and their features	2	17
Feedback	discussion, lecture, debate	Objective tests	Enabling students to identify the types of objective tests and their features	2	18
Feedback	discussion, lecture, debate	Classification of tests by method	Enabling students to identify different testing methods	2	19
Feedback	discussion, lecture, debate	Correction keys	Enabling students to define correction instructions and keys for tests	2	20
Monthly exam	-	Knowing the students' level and the information they have acquired	Monthly exam	2	21
Feedback	discussion, lecture, debate	Good test specifications	Enabling students to define new test specifications	2	22
Feedback	discussion, lecture, debate	Honesty and its types	Enabling students to define the concept of validity for tests	2	23
Feedback	discussion, lecture, debate	Persistence and its methods	Enabling students to define the concept of reliability of educational tests	2	24
a test	discussion, lecture, debate	Objectivity in educational testing	Enabling students to define the concept of objectivity in educational testing	2	25

Feedback	discussion, lecture, debate	Evaluation without tests	Enabling students to apply assessment methods other than exams	2	26
Feedback	discussion, lecture, debate	Cumulative records	Enabling students to identify types of honesty	2	27
Feedback	discussion, lecture, debate	Educational and learning observation	Enabling students to define the concept of educational observation	2	28
Feedback	discussion, lecture, debate	Educational checklists	Enabling students to make the connection between concurrent validity and predictive validity	2	29
Feedback	discussion, lecture, debate	The interview	Enabling students to identify the role of the interview in the educational aspect	2	30

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

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