Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate Quality Assurance and Academic Accreditation International Accreditation Department

Academic Program and Course Description Guide

2026

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: .....Mosul.....

Faculty/Institute: . Education for Pure Sciences.....

Scientific Department: .... Computer Science.....

Academic or Professional Program Name: ..... Bachelor's.....

Final Certificate Name: ..... Bachelor of Education in Computer Science.....

Academic System: ... Annual .....

Description Preparation Date: 1/9/2025

File Completion Date: 1/9/2025

Signature:

Head of Department Name:

AP. Dr. Mohammed Hazim Ameen

Date: 1/9/2025

Signature:

Scientific Associate Name:

Asst.prof. Azzaq S.Y. Alaloul

Date: 9/3/2026

The file is checked by: Mohammed Zeglool Saeed

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 9/3/26

Signature:

الأستاذ الدكتور
جاسم فتحي علي
عميد كلية التربية للعلوم الصرفة
٢٠٢٦/٣/١١

Approval of the Dean

1. Program Vision

The department's vision is to strive to achieve a distinguished position among relevant departments by keeping pace with the rapid development in information technology and its applications, and developing students' scientific and practical capabilities to provide society with graduates capable of teaching effectively in a way that qualifies them to advance and improve the educational process by using the latest computer technologies to support traditional, electronic and blended education.

2. Program Mission

The department adopts its mission, which seeks to reach a leadership position in the educational, pedagogical, academic and research fields to be able to:

1. Providing educational institutions with highly qualified graduates to work as educational teachers and programmers, enabling them to contribute to building educational institutions and the rest of the various state institutions, as well as the private sector.
2. Cooperation with the colleges of the University of Mosul, other universities, the Ministry of Education, and other relevant ministries to contribute to serving society.

3. Program Objectives

In light of the department's vision and mission, the objectives are divided into:

- ❖ General objectives:

1. Preparing qualified teachers in accordance with modern educational trends to work in Iraqi schools (middle, preparatory, and secondary).
2. Preparing qualified specialists to work in various applied fields for various state institutions.

3. Spreading educational, scientific and humanitarian awareness among society by holding seminars and giving lectures through continuing education and community service.

4. Contributing to solving problems in the public and private sectors through joint research and studies, providing consultations, and coordination with other various institutions and ministries.

5. Strengthening scientific and research cooperation mechanisms with universities, ministries and other institutions.

❖ Special objectives:

1. Work on consistency and integration with the directives of the vision, mission, and goals of the University of Mosul.

2. Work to complete and implement files related to quality assurance and academic accreditation in order to achieve global progress for the college and university.

3. Striving to obtain institutional or programmatic academic accreditation for the college globally or regionally.

4. **Program Accreditation**
Does the program have program accreditation? From which side? No

5. **Other external influences**
Is there a sponsor for the program? Ministry of Higher Education and Scientific Research

6.Program Structure

Program Structure	Number of Courses	Study Unit	Percentage	Notes
Enterprise requirements	**6**	**12**	**7.5%**	primary
College requirements	**9**	**30**	**18.5%**	primary
Department requirements	**23**	**120**	**74%**	primary
summer training				Training in Schools
Other				

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

7. Program Description

Year / Level	Course or course name	Course or course code	Credit hours	
			Theory	Practical
First	Logic Design	EDCO26F101	2	2
	Structural Programming	EDCO26F102	2	2
	Mathmatics	EDCO26F103	2	---
	Computer Organization	EDCO26F104	2	2
	Discrete Structure	EDCO26F105	2	---
	Fundamental of Education	EDCO26F106	2	---
	Developmental and Educational Psychology	EDCO26F107	1	---
	Arabic Language	EDCO26F108	1	---
	English Language	EDCO26F109	1	---
	Democracy and Human Rights	EDCO26F110	1	---
Second	Data Structure and ALgorithms	EDCO26F201	2	2
	Object Oriented Programming	EDCO26F202	2	2
	Microprocessors	EDCO26F203	2	2

	Numerical Analysis	EDCO26F204	2	---
	Database	EDCO26F205	2	2
	Computational Theory	EDCO26F206	2	---
	Leadership and Educational Administration	EDCO26F207	2	---
	Curriculums and School Books	EDCO26F208	1	2
	Teaching Thinking	EDCO26F209	1	---
	Arabic Language	EDCO26F210	1	---
	English Language	EDCO26F211	1	---
	Baath Regime Crimes in Iraq	EDCO26F212	1	---
Third	**Artificial Intelligence**	EDCO26F301	2	2
	Compilers	EDCO26F302	2	2
	Computer Graphics	EDCO26F303	2	2
	Visual Programming	EDCO26F304	2	2
	Computer Architecture	EDCO26F305	2	---
	Software Engineering	EDCO26F306	2	---
	Counseling and Psychological Health	EDCO26F307	1	2
	Teaching Methods	EDCO26F308	1	2
Fourth	**Operating Systems**	EDCO26F401	2	2
	Computer Networks	EDCO26F402	2	2
	Website page Design (Elective Subject1)	EDCO26F403	2	2
	Internet of Things (Elective Subject2)	EDCO26F404	2	---
	Data Security	EDCO26F405	2	2
	Research Project	EDCO26F406	0	2
	Measurement and evaluation	EDCO26F407	2	---
	Practical Education	EDCO26F408	1	2

8. Expected learning outcomes for the program	
Knowledge	
Preparing a teaching staff	Preparing teachers to teach computer subjects in educational institutions at a high-quality level
Prepared by a scientific researcher	Creating a generation that is proficient in computer use and applications in order to have the ability to invest the use of computers in the development of society
Promoting scientific cooperation	By holding courses, workshops or seminars within continuing education
Providing the opportunity to complete postgraduate studies	Through mastering scientific material and scientific research methods
Skills	
Teaching profession skills	The student must master basic and advanced programming skills, acquiring basic skills for the teaching profession in the fields of computer science
Scientific research skills	Developing scientific research skills in the field of computer science, to master the skills required to manage information systems and databases with high efficiency
Sustainable development skills	By preserving the state's resources and sources from depletion in all fields, especially with regard to the use of computers in the education process
Practical skills	Developing students' practical skills inside the laboratory and mastering the correct educational and psychological method of dealing within the laboratory
Values	
Developing beneficial values and trends	In harmony with the principles of tolerant divine religions, customs and traditions, and respect for the institution in which he studies and the institution in which he will work in the future.
Developing the attitude towards the teaching profession	To face current challenges and develop the educational system as a whole
Establishing teaching principles	To reduce the misuse of their responsibilities in the scientific and educational field and to promote basic scientific and ethical principles
Explaining the importance of science in serving society	The great role played by applications and uses of computer science in serving society

9. Teaching and Learning Strategies

Theoretical lectures –

– Laboratory education to acquire practical skills

e–learning

Graduation project and field practice for teaching in schools

10. Evaluation methods

In the classroom

– Practical exams and reports

– Quarterly exams

– Daily oral and written exams

– Projects and field practice for teaching in schools

11. Teaching Staff

Faculty Members

Academic rank	specialization		special requirements/skills (if any)		Numbers of teaching staff	
	General	Private			Lecturer	Staff
Professor	**Computer Science**	Digital Image Processing				Staff
Assistance Professor	**Computer Science** **Computer Science** **Computer Science**	Computer Networks (4) Digital Image Processing Operating System and Distribution programming				Staff

	Computer Science	Multimedia (2)				
Lecturer	**Computer Science** **Computer Science** **Computer Science** **Computer Science** **Computer Science** **Mathematics** **Mathematics** **Computer Science** **Computer Science** **Computer Science** **Computer Science**	Computer Science Computer vision (2) Signal processing (2) Artificial Intelligence (4) Digital Image Processing (3) Mathematical statistics Computational mathematics Teaching Methods Information security Information Technology Natural Language processing Database				Staff

Assistance Lecture	Computer Science Computer Science Computer Science Computer Science Computer Engineering Teaching Methods Teaching Methods	Digital Image Processing Software Engineering Computer Networks Security Computer Engineering Teaching Methods Computer Teaching Methods Bio				Staff

Professional development
Teaching new staff member
• Using modern scientific sources, educational films, courses and workshops • Training on the use of advanced and modern technologies and devices in the field of computer science or e-learning
Professional development for faculty members
• Providing the library with modern scientific resources and participating in specialized training courses • Enriching specialized laboratories with advanced computers and advanced equipment that support e-learning

13. Acceptance criterion
Central admission to the Ministry of Higher Education and Scientific Research

14. The most important sources of information for the program
Central admission guide, the department's website and the World Wide Web

15. Program development plan
The content has been updated based on modern sources from reputable universities

Program Skills Chart

				Learning outcomes required from the program											
Year / Level	Course code	Course name	Core / elective	Knowledge				Skills				Values			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First	EDCO26F101	Logic Design	Core	*	*			*	*	*	*	*	*	*	*
	EDCO26F102	Structural Programming	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F103	Mathmatics	Core			*	*			*	*	*	*	*	*
	EDCO26F104	Computer Organization	Core	*	*	*		*	*	*	*	*	*	*	*
	EDCO26F105	Discrete Structure	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F106	Fundamental of Education	Core	*	*			*	*		*	*	*	*	*
	EDCO26F107	Developmental and Educational Psychology	Core	*	*			*	*		*	*	*	*	*
	EDCO26F108	Arabic Language	Core	*	*			*	*			*	*	*	*

	EDCO26F109	English Language	Core	*	*			*	*			*	*	*	*
	EDCO26F110	Democracy and Human Rights	Core	*	*			*					*		*
Second	EDCO26F201	Data Structure and ALgorithms	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F202	Object Oriented Programming	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F203	Microprocessors	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F204	Numerical Analysis	Core	*	*		*	*		*	*	*	*	*	*
	EDCO26F205	Database	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F206	Computational Theory	Core	*	*	*	*	*	*	*		*	*	*	*
	EDCO26F207	Leadership and Educational Administration	Core	*	*	*		*	*			*	*	*	*
	EDCO26F208	Curriculums and School Books	Core	*	*	*		*	*			*	*	*	*

	EDCO26F209	Teaching Thinking	Core	*	*	*		*	*			*	*	*	*
	EDCO26F210	Arabic Language	Core	*	*			*					*		*
	EDCO26F211	English Language	Core	*	*			*					*		*
	EDCO26F212	Baath Regime Crimes in Iraq	Core	*	*			*					*		*
Third	EDCO26F301	Artificial Intelligence	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F302	Compilers	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F303	Computer Graphics	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F304	Visual Programming	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F305	Computer Architecture	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F306	Software Engineering	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F307	Counseling and Psychological Health	Core	*	*	*		*	*			*	*	*	*
	EDCO26F308	Teaching Methods	Core	*	*	*		*	*	*	*	*	*	*	*

Fourth	EDCO26F401	Operating Systems	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F402	Computer Networks	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F403	Website page Design (Elective Subject1)	Elective	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F404	Internet of Things (Elective Subject2)	Elective	*	*	*	*	*	*	*	*		*	*	*
	EDCO26F405	Data Security	Core	*	*	*	*	*	*	*	*	*	*	*	*
	EDCO26F406	Research Project	Core	*		*	*	*	*	*		*	*		*
	EDCO26F407	Measurement and evaluation	Core	*	*				*	*	*	*	*		*
	EDCO26F408	Practical Education	Core	*	*			*	*	*	*	*	*	*	*

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course description form

1. Course name:	
Logic Design	
2. Course code	
EDCO26F101	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
Theory and Practical lectures + electronic	
6. Number of hours (total)/number of credits (total)	
2 theoretical hours + 2 practical hours	
7. Name of the course tutors	
Name: Dr. Marwan Salim Mahmood Al-Dabbagh Eman Fathi Ahmed E-mail: marwan.aldabbagh@uomosul.edu.iq	
8. Course objectives	
1- Enabling the student to know the foundations of digital systems design. 2- Knowledge of counting systems, codes, and conversion between different systems 3- Knowledge of the foundations and laws of Boolean algebra. 4- Reducing rational functions using Karnoff's map. 5- Understanding Flip-flops, Encoder, and Decorder 6- Understanding Demuliplexer and Multiplexer 7- Knowledge and understanding of displacement recorders	Objectives of the study subject
9. Teaching and learning strategies	
Definition of the course: It is a science that helps to know and understand the foundations of digital systems design: counting systems, ciphers, conversion between different systems, foundations and laws of Boolean algebra, abbreviation of logical functions using the Karnoff map. Understanding Flip-flops, Encoder, and Decorder, Demuliplexer and Multiplexer	The strategy
10. Course structure	

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
Questions	Discussions in the lecture	Numbers SYSTEMS decimal Number Binary Number Octal Number Hexadecimal Number		4	1
Daily test	use of resources	Conversions between system decimal to Binary Conversion		4	2

		Binary to decimal Conversion decimal to Octal Conversion Octal to decimal Conversion			
Reports	Training them on electronic research	decimal to Hexadecimal Conversion Hexadecimal to decimal Conversion Binary to Octal Conversion Octal d to Binary Conversion		4	3
Questions	Discussions in the lecture	Binary to Hexadecimal Conversion Hexadecimal to Binary Conversion Octal d to Hexadecimal Conversion Hexadecimal to Octal Conversion		4	4
Daily test	use of resources	Arithmetic Operations Addition Addition in Binary		4	5
Reports	Training them on electronic research	Addition in Octal Addition in Hexadecimal		4	6
Questions	Discussions in the lecture	Complements 1's Complements In Binary 2's Complements In Binary 1's and 2's Complements in decimal		4	7
Daily test	use of resources	1's and 2's Complements in Octal 1's and 2's Complements in Hexadecimal		4	8
Reports	Training them on electronic research	Subtraction in Binary Multiplication in Binary Division in Binary		4	9
Questions	Discussions in the lecture	Signed Number Binary coded decimal(BCD)		4	10
Daily test	use of resources	Excess 3 The Gray code		4	11

Reports	Training them on electronic research	parity binary number odd-parity even-parity		4	12
Questions	Discussions in the lecture	Boolean Algebra		4	13
Daily test	use of resources	Boolean Operations Rules and laws of Boolean algebra		4	14
Reports	Training them on electronic research	Standard Representation for Logical The SOP and The POS		4	15
Questions	Discussions in the lecture	The Karnaugh Map Two –variable The Karnaugh Map		4	16
Daily test	use of resources	Three –variable The Karnaugh Map four –variable The Karnaugh Map		4	17
Reports	Training them on electronic research	simplification Karnaugh Map don't care condition		4	18
Questions	Discussions in the lecture	Design Examples Half-adder Full adder		4	19
Daily test	use of resources	Half subtractor Full Subtractor		4	20
Reports	Training them on electronic research	BCD TO 7_ SEGMENT		4	21
Questions	Discussions in the lecture	DECODER Convert cray to binary		4	22
Daily test	use of resources	DECODER Convert binary to cray Parallel adder circuit		4	23
Reports	Training them on electronic research	Flip-Flops asynchronous R-S Flip-Flops synchronous R-S Flip-Flops		4	24

Questions	Discussions in the lecture	D flip-flop J-k Flip Flop TOGGLE FF(T-FF) Flip Flop		4	25
Daily test	use of resources	Encoder		4	26
Reports	Training them on electronic research	Decoder		4	27
Questions	Discussions in the lecture	Multiplexers and their use in combinational logic design		4	28
Daily test	use of resources	Read only memory (ROM)		4	29
Reports	Training them on electronic research	Shift Registers Introduction Serial Shift Registers Parallel Shift Registers		4	30

11. Course assessment

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.

•Semi-weekly short tests (quiz) asking sudden and overlapping questions with an explanation of Article 10

•Laboratory tests on the computer and in written form to enable the student to solve them without a computer 10

•Monthly tests 10

•Termly and annual tests 70

12. References

1-Digital Design, Third Edition, by M. Morris Mano. Prentice-H Inc. 2002. 2-Logic Design ,Digital Principles and Application", Malvino, 2000 3-"Introduction to Logic Design" (2nd) edition), Sajjan G. Shiva, 2007	BOOKS
	Main resources
	Recommended resources
	Electronics and website resource

Marwan Al-Dabbagh

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course Name and Stage:	
Structured Programming	
2. Course Code:	
EDCO26F102	
3. Semester / Year: 2025-2026	
First year / First semester	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Physical attendance is required even for downloading. There is no distance learning, accordance with applicable laws.	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90 hours (30 theoretical + 60 practical)	
7. Course administrator's name (mention all, if more than one name) and Scientific title	
Name: Email: Karam muayad abdullah karamalnuaymi@uomosul.edu.iq Raghad hazim raghad1986@uomosul.edu.iq Zina natiq zenatiq2@uomosul.edu.iq Zohair qais qizohair@uomosul.edu.iq	
8. Course Objectives	
Subject Objectives	• Introducing students to basic programming principles • How to use the C++ programming language • Preparing students to become programmers • Designing and implementing programs for various requirements
9. Teaching and Learning Strategies	
Strategy	• Education: Providing printed lectures from modern, diverse sources, rich with examples. • Education: Using the smart board to educate students, clarify the step for solving problems, and extract results. • Education: Solving some questions, deliberately including errors, and having students identify the errors. • Learning: Pose questions and inquiries, and have the student act like t instructor by explaining and solving them on the board. • Learning: Direct questions to all students, one at a time, to gauge thei level of engagement and encourage the rest to pay attention. • Learning: Each specific group presents its report, and students inter through questions and answers. This provides an environment that enab the student to lead the lecture or discussion.

10. Course Structure

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

1	4	The parts of C++ Variables and constants	Study the environment of C++ Simple program	According point 10 ab and as need	According point 10 ab and as neede
2	4	Characters	Program on characters	According point 10 ab and as need	According point 10 ab and as need
3	4	String	Program on strings	According point 10 ab and as need	According point 10 ab and as need
4	4	Expression and	Program on expressions	According point 10 ab and as need	According point 10 ab and as need
5	4	statement	Program on if St.	According point 10 ab and as need	According point 10 ab and as need
6	4	If statement	Program on if St.	According point 10 ab and as need	According point 10 ab and as need
7	4	If statement	Program on nested if St.	According point 10 ab and as need	According point 10 ab and as need
8	4	Nested if St.	Program on loops	According point 10 ab and as need	According point 10 ab and as need
9	4	Loops	Program on loops	According point 10 ab and as need	According point 10 ab and as need
10	4	Loops	Program on continue and break	According point 10 ab and as need	According point 10 ab and as need
11	4	Loops	Program on FOR loop	According point 10 ab and as need	According point 10 ab and as need
12	4	Continue and bre	Program on nested FOR lo	According point 10 ab and as need	According point 10 ab and as need
13	4	For loop	Program on switch St.	According point 10 ab and as need	According point 10 ab and as need
14	4	Nested for loop	Program on arrays	According point 10 ab and as need	According point 10 ab and as need
15	4	Switch St.	Program on arrays	According point 10 ab and as need	According point 10 ab and as need
16	4	Array	Program on arrays	According point 10 ab and as need	According point 10 ab and as need
17	4	Array	Program on function	According point 10 ab and as need	According point 10 ab and as need
18	4	Array	Program on function	According point 10 ab and as need	According point 10 ab and as need
19	4	Functions	Program on recursive function	According point 10 ab and as need	According point 10 ab and as need
20	4	Functions	Program on Friend and virtual functions	According point 10 ab and as need	According point 10 ab and as need
21	4	Recursive functic	Program on Pointers	According point 10 ab and as need	According point 10 ab and as need
22	4	Friend and virtua	Program on Dynamic memory	According point 10 ab and as need	According point 10 ab and as need
23	4	functions	Program on Structures	According point 10 ab and as need	According point 10 ab and as need
24	4	Pointers	Program on Complex structures	According point 10 ab and as need	According point 10 ab and as need
25	4	Dynamic memor	Program on Arrays of structures	According point 10 ab and as need	According point 10 ab and as need
26	4	Structures	Program on Unions	According point 10 ab and as need	According point 10 ab and as need
27	4	Complex structur	Program on Files	According point 10 ab and as need	According point 10 ab and as need
28	4	Arrays of structu	Program on Files	According point 10 ab and as need	According point 10 ab and as need
29	4	Unions			
30	4	Files Files			

				According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need	According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need According point 10 ab and as need

11. Course Evaluation and Marks	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books any)	▪ C++ for programmers/ John wily and Sonsltd. (1999) Learning C++ PROFESSIONAL C++ Sixth Edition Marc Gregoire 2024
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	
Percentage of Curriculum update	

KARAM MUAYAD ABDULLAH

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name:	
Mathematics	
2. Course Code:	
EDCO25F103	
3. Semester / Year:	
Annual / 2025-2026	
4. Description Preparation Date:	
September 1, 2025	
5. Available Attendance Forms:	
Weekly theoretical lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 Theoretical hours / 4 Units	
7. Course administrator's name (mention all, if more than one name)	
Name: Agssan Mahmood Ibrahim Email: agssan.mood@uomosul.edu.iq Name: Alaa Saad Ahmed Email: allasaad@uomosul.edu.iq	
8. Course Objectives	
Course Goals:	• The course aims to present the fundamental laws, concepts, and axioms of mathematics to develop mathematical and logical thinking and to understand the theoretical foundations of programming and algorithms. • Enhance the handling of data and dynamic systems as an introduction to more complex subjects such as data analysis, signal processing, and mathematical modeling. All of this is geared towards understanding and analyzing programming and mathematical problems that students may encounter in their practical studies.
9. Teaching and Learning Strategies	
Strategy	Lecture and Discussion Method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-3	6	Identifying mathematical basics, inequalities, and understanding relations and functions.	Preliminaries: Sets of Real Numbers, Inequalities, Intervals, Relation.	Lecture & Discussion	Quizzes + Interactive Questions
Week	Hours	Required Learning Outcomes	Unit / Subject Name	Learning Method	Evaluation Method
4-5	4	Understanding trigonometric functions and their applications.	Trigonometric Functions & Identities	Lecture & Discussion	Preparation of Reports
6-11	12	Understanding limits, sequences,	Limits, Sequences, Exponential &	Lecture & Discussion	Quizzes

		exponential/logarithmic functions, and continuity.	Logarithmic Functions, Continuity		
12-20	18	Function differentiation, higher derivatives, and derivatives of trigonometric, exponential, and logarithmic functions.	Differentiation of Functions, Tangents, Higher Derivatives, Indeterminate Forms	Lecture, Discussion, Reports & Assignments	Quizzes with diverse questions
21-24	8	Definite and indefinite integrals.	Integral Calculus, Indefinite Integral	Lecture, Discussion, Reports & Assignments	Monthly Exams
25-30	12	Basics of descriptive statistics, data types, probability fundamentals, probability distributions, regression, and correlation.	Descriptive Statistics, Introduction to Data, Probability Fundamentals, Probability Distributions, Regression & Correlation	Lecture, Discussion, Reports & Assignments	Preparation of Reports & Exercises

11. Course Evaluation and Grade Distribution	
The total grade is 100, distributed as follows: • 60% Final Examination. • 25% Mid-term Examination. • 15% Daily Quizzes and Reports.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	• *Calculus and Analytical Geometry*, 2nd Edition, University of Mosul Press (1981). • *Al-Nadir in Calculus*, 1st Edition, Nader Abu Maghli, Dar Al-Shorouk, Amman – Jordan (1999).
Main references (sources)	Anton, H., Bivens, I. C., & Davis, S. (2021). *Calculus*. John Wiley & Sons.
Recommended books and references (scientific journals, reports...)	• https://calcworkshop.com/ • https://www.khanacademy.org
Electronic References, Websites	• MIT OpenCourseWare - Calculus • Integral Calculator
13. Curriculum Update Percentage	

Aghsan Mahmood Ibrahim

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name and stage:	
Computer Organization/ First stage	
2. Course code	
EDCO26F104	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
Theory and Practical lectures + electronic	
6. Number of hours (total)/number of credits (total)	
10 hrs. per week 2 theoretical hours + 8 practical hours	
7. Name of the course tutors	
Name: Younis abbas younis E-mail: younis.bayati@uomosul.edu.iq Alaa Saad Ahmed Ehab Yassin	
8. Course objectives	
• Providing distinguished education based on keeping pace with development to achieve a solid scientific level at the level of preliminary studies and preparation for postgraduate studies • Preparing and qualifying graduates who are scientifically and practically qualified to meet the requirements of the labor market in the public and private sectors in computer science through diversity in learning and teaching methods. • Preparing specialized programs in the field of computing according to the standards followed regionally and globally • Providing distinguished teaching staff and qualifying them for scientific research to train students to apply acquired knowledge and skills to solve realistic problems • Providing quality services and consultations to the community and the labor market in the field of computing and information technology	Objectives of the study subject
9. Teaching and learning strategies	
Lecture and discussion method.	The strategy

10. Course structure

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
Questions	Discussions in the lecture	Identify the computer and main components		4	1

Daily test	use of resources	Identify the computer and main components		4	2
Reports	Training them on electronic research	Input and output unit		4	3
Questions	Discussions in the lecture	History of Computers		4	4
Daily test	use of resources	History of Computers		4	5
Reports	Training them on electronic research	Integrated Circuits		4	6
Questions	Discussions in the lecture	Microprocessors		4	7
Daily test	use of resources	Microprocessors		4	8
Reports	Training them on electronic research	The Evolution of the Intel x86 Architecture		4	9
Questions	Discussions in the lecture	The Evolution of the Intel x86 Architecture		4	10
Daily test	use of resources	Microcontroller		4	11
Reports	Training them on electronic research	Microcontroller		4	12
Questions	Discussions in the lecture	A Top-Level View of Computer Function		4	13
Daily test	use of resources	A Top-Level View of Computer Interconnection		4	14
Questions	Discussions in the lecture	Interrupt		4	15
Questions	use of resources	Computer Modules		4	16

Questions	Discussions in the lecture	Computer Modules		4	17
Questions	use of resources	types of cables Sata, Pcie,nvme		4	18
Questions	Discussions in the lecture	Cache Memory		4	19
Questions	use of resources	Method of Accessing Units of Data		4	20
Reports	Discussions in the lecture	Method of Accessing Units of Data		4	21
Questions	use of resources	Cache Addresses		4	22
Questions	Discussions in the lecture	Replacement Algorithms		4	23
Questions	use of resources	Replacement Algorithms		4	24
Reports	Discussions in the lecture	Internal Memory		4	25
Questions	use of resources	Internal Memory		4	26
Reports	Discussions in the lecture	External Memory		4	27
Questions	use of resources	External Memory		4	28
Reports	Discussions in the lecture	Error Correction		4	29
Questions	use of resources	Introduction to operating system		4	30

11. Course assessment

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.
30% lecturer marks, 20% mid exam , 50% final

12. References	
1. William Stallings Computer Organization and Architectu 10th Edition 2. assembly language programming	BOOKS
	Main resources
	Recommended resources
	Electronics and website resources
Percentage of Curriculum update	3% Yearly

Dr. Younis Abbas Younis

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name and Stage:	
Discrete Structure	
2. Course Code:	
EDCO26F105	
3. Semester / Year:	
2025-2026	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Theory lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 theoretical hours, total 60 hours	
7. Course administrator's name (mention all, if more than one name) and Scientific title	
Name: Aghsan Mahmmod	Email: agssan.mood@uomosul.edu.iq
8. Course Objectives	
Subject Objectives The course aims to present the basic laws, concepts, and axioms in the subject of discrete structures Mathematical induction, logical expressions, and matrices. Identify the simplest ways to solve them in the course. Providing distinguished teaching staff and qualifying them for scientific research to train students to apply knowledge And the skills acquired to solve real-life proble	Objectives of the study subject
9. Teaching and Learning Strategies	
Strategy	Lecture and discussion method

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2		Induction Mathematica	Discussions in lecture	Questions
2	2		Induction mathematica	use of resources	Daily test
3	2		LogicalPropositionsLogical Equivalence	Training them electronic researc	Questions
4	2		TautologyStatement & Contradict Statement	Discussions in lecture	Reports

5	2		-LogicalImplicationAlgebraOf Propositionsonditional Statements Variatio	Use of res	Daily test
6	2		Quantifiers ogical Reasoning	Training them electronic researc	Questions
7	2		introduction Vectors and Matrices	Discussions in lecture	Reports
8	2		- Vectors	use of resources	Daily test
9	2		Matricse	Use of resors	Questions
10			Matrices - Models of Square	Training them electronic researc	Questions
11	2		Matrices - Algebra in the Matrices	Discussions in lecture	Report
12	2		- Minors & Cofactors	Use of resors	Questions
13	2		- Find Inverse Square Not Singular Matrix	Training them electronic researc	Daily test
14	2		- Solving System of liner equations using the Non_homogeneous	Discussions in lecture	Reports
15	2		Rule Grammar	use of resources	Questions
Mid-Year Examinations					
16	2		Introduction Sets Theory	Training them electronic researc	Daily test
17	2		Principle Concepts of Sets Ven Diagrams	Use of resors	Reports
18	2		Sets of Numbers - Algebra of Sets	Training them electronic researc	Questions
19	2		Family of Sets & index Family of Se	Discussions in lecture	Daily test
20	2		Ordered Pairs & Product Set s Boolean Algebra	Use of resors	Questions
21	2		Introduction - Binary Relation - Graph of - Relations Graph of the Relation - Photographer representation of the relation	Training them electronic researc	Reports
22	2		The Domain & the Range of a Relation	Training them electronic researc	Reports
23	2		Identity Relation & Inverse Relation - Composition Relation	Discussions in lecture	Question
24	2		Diagrams Basic Concept	Use of resors	Daily test
25	2		Diagram Example	Training them electronic researc	Reports
26	2		Diagram and Relasitionships	Use of resors	Daily test
27	2		Diagram and Matrix	Training them electronic researc	Reports

28	2		Pruning Algorithm forMinimal Path	Use of resors	Daily test
29	2		Formal Language and Machines - Introduction - Principle Concepts - Languages - Crammers - Type of Crammer Machines - Finite States Machine - Finite Automata	Discussions in lecture	Question
30	2		Types of Roules in Fi StateMachines	Use of resors	Daily test

11. Course Evaluation and Marks

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.

- Mid year exam 25%
- 15% includes (theoretical tests 10%, assignments and reports 5% during the year)

60% Final test

12. Learning and Teaching Resources

Required textbooks (curricular books, if any	Discrete Mathematics and Its Applications, *Kenneth H. Rosen*:
Main references (sources)	
Recommended books and references (scientific journals, reports...)	.Graph Theory by Reinhard Diestel Third Edition Spring Verlag,Heidelberg Graduate Texts in Mathematics, Volu 173 ,431 pages(2010) 2.First Course in Discrete Mathematics by Ian Anderson Publisher: Springer- Verlag New York, LLC Pub. Da January 2001 212pp First Course in Discrete Mathematics by Ian Anderson Publisher: Springer- Verlag New York, LLC Pub. Date: January 2001 212pp
Electronic References, Websites	MIT OpenCourseWare (Mathematics for Computer Science)
Percentage of Curriculum update	

Aghsan Mahmood Ibrahim

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1- The curriculum and the grade:	
Fundamental of Education / First Stage	
2- Curriculum code	
EDCO26M106	
3- Semester / Academic year	
2025-2026 annual	
4- Date of description preparation	
21/9/2025	
5- Attendance	
In the study classroom + online through Classroom package	
6- Study hours (total) / Number of units (total)	
Two hours a week / 4 units	
7- Name of the person in charge of the curriculum (to be mentioned if more than one name) and the scientific title	
Name: Qusay Abdul Aziz / e-mail: qusay.abdulaziz@uomosul.edu.iq	
Objectives of the curriculum:	
Objectives of the curriculum	Increasing the understanding of the students to the educational and social reality during the ages and making them comprehend the educational process in its utmost necessities in addition to understanding the educational theory for various peoples in the past and the present.
9- Teaching and learning strategies	
Strategy	- paper lectures, the most important device available is the whiteboard, color markers, dialogue, discussion and some class activities. - using the teaching discussion (teaching dialogue) that depends on exchanging the ideas to reach the facts.
10- Structure of the curriculum	

Week	Hours	Required learning outcomes	Name of unit or subject	Learning method	Evaluation method
First	2	Meanings of education	Meanings of education	Dialogue and discussion	Written test
Second	2	Education necessity	Education necessity	Dialogue and discussion	Written test
Third	2	Purposes of education	Purposes of education	Dialogue and discussion	Written test
Fourth	2	Education and teaching	Education and teaching	Dialogue and discussion	Written test
Fifth	2	Teaching and learning	Teaching and learning	Dialogue and discussion	Written test
Sixth	2	Contemporary education	Contemporary education	Dialogue and discussion	Written test
Seventh	2	Future education	Future education	Dialogue and discussion	Written test
Eighth	2	Education in the primitive society	Education in the primitive society	Dialogue and discussion	Written test
Ninth	2	Education in the Babylonian society	Education in the Babylonian society	Dialogue and discussion	Written test
Tenth	2	Education in the Egyptian civilization	Education in the Egyptian civilization	Dialogue and discussion	Written test
Eleventh	2	Education in the pre-Islamic age for Arabs	Education in the pre-Islamic age for Arabs	Dialogue and discussion	Written test

Twelfth	2	Education in the Islamic age for Arabs	Education in the Islamic age for Arabs	Dialogue and discussion	Written test
Thirteenth	2	Teaching institutes in Islam	Teaching institutes in Islam	Dialogue and discussion	Written test
Fourteenth	2	Methods of education and teaching in Islam	Methods of education and teaching in Islam	Dialogue and discussion	Written test
Fifteenth	2	Characteristics of Arab-Islamic Education	Characteristics of Arab-Islamic Education	Dialogue and discussion	Written test
Mid-year					
Sixteenth	2	Social basics of education	Social basics of education	Dialogue and discussion	Written test
Seventeenth	2	Education and society culture	Education and society culture	Dialogue and discussion	Written test
Eighteenth	2	Education and social discipline	Education and social discipline	Dialogue and discussion	Written test
Nineteenth	2	Education and its role in the economic development	Education and its role in the economic development	Dialogue and discussion	Written test
Twentieth	2	Cultural basics of education	Cultural basics of education	Dialogue and discussion	Written test
Twenty-first	2	Social education	Social education	Dialogue and discussion	Written test
Twenty seconds	2	Islamic education	Islamic education	Dialogue and discussion	Written test

Twenty third	2	Media education	Media education	Dialogue and discussion	Written test
Twenty fourth	2	National education	National education	Dialogue and discussion	Written test
Twenty fifth	2	Special education	Special education	Dialogue and discussion	Written test
Twenty sixth	2	Teaching technology	Teaching technology	Dialogue and discussion	Written test
Twenty seventh	2	Educational research	Educational research	Dialogue and discussion	Written test
Twenty eighth	2	Styles of Teaching and learning	Styles of Teaching and learning	Dialogue and discussion	Written test
Twenty ninth	2	Teaching planning	Teaching planning	Dialogue and discussion	Written test
Thirtieth	2	Education in the scientific context	Education in the scientific context	Dialogue and discussion	Written test

11- Division of the curriculum and the mark	
The mark is (100) and it is distributed per the tasks assigned to the student like the daily preparation, daily, monthly and written exams as well as reports … etc. The division of the mark (100) is as follows: 60 marks for the final exam, 25 marks for the mid year exam and 15 marks for the daily exams and reports.	
12- Sources of learning and teaching	
Textbooks required (curricula, if any)	The basics of education by Dr. Ateyyah Khaleel Ateyyah

Main books (references)	• Ibrahim Nasir, Bases of Education, Ammar House for Publishing, 2016. • Ekhleif Yousif AlTarawnah, Basics in Education, AlShurooq House for Publishing, Beirut, 2004.
Books and references recommended (scientific journals, reports.)	• Muhsin ali Ateyyah, Bases of Modern Education and systems of teaching, AlManahij House for Publishing, Amman, Jordan, 2010. • Reyadh AlJawadi, Modern Educational Concepts for Effective Teaching, Kunooz Eshpelia House for Publishing, Riyadh, Saudi Arabia, 2016. • Ali Hasan AlDoori, Fundamentals of Education in its Modern Concept, Ethraa House for Publishing, Amman, Jordan, 2019.
Internet references, websites.	
Percentage of curriculum update	

Qusay Abdulaziz Abdulaziz

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name:	
Developmental and Educational Psychology	
2. Course code	
EDCO26F107	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
Theory lectures	
6. Number of hours (total)/number of credits (total)	
2 theoretical hours	
7. Name of the course tutors	
Name: Rahma Talal E-mail: rahma.sultan@uomosul.edu.iq	
8. Course objectives	
• Identify the basic concepts of educational psychology • Identify the principles of educational psychology • Identify the importance of educational psychology in the educational process • Identify the goals of educational psychology	Objectives of the study subject
9. Teaching and learning strategies	
Theoretical and practical lectures, dialogue and discussions, brainstorming, problem solving, conducting practical experiments, Daily reports and homework	The strategy
10. Course structure	

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
Questions	Discussions in the lecture	The student should mention the concept of educational psychology and the history of the emergence of psychology	The concept of psychology and educational psychology in educational thought and Islamic thought	2	1
Daily test	use of resources	The student should explain the schools of psychology	Schools and branches of psychology	2	2
Reports	Training them on electronic research	And branches of psychology.	Behavior and factors	2	3
Questions	Discussions in the lecture	The student knows the concept of behavior and factors	Influencing behavior	2	4

Daily test	use of resources	Influencing behavior	Research methods in psychology and educational psychology	2	5
Reports	Training them on electronic research	The student identifies the most important research methods in psychology and educational psychology	Learning and teaching and their characteristics.	2	6
Questions	Discussions in the lecture	The student should distinguish between the concepts of learning and teaching	Attention and factors	2	7
Daily test	use of resources	For the student to understand the subject of attention and the factors affecting attention with insulin	Influencing attention.	2	8
Reports	Training them on electronic research	For the student to understand the subject of sensation, the types of sensation, and the factors affecting human sensation.	Sensation, types of sensation, and factors affecting the sensation process	2	9
Questions	Discussions in the lecture	For the student to understand the subject of perception and the factors affecting human sensory perception.	Sensation, types of sensation, and factors affecting the sensation process	2	10
Daily test	use of resources	The student should explain the importance of studying motivation towards learning.	Sensory perception and influencing factors	2	11
Reports	Training them on electronic research	The student should distinguish between types of motivation (internal and external).	On sensory perception.	2	12
Questions	Discussions in the lecture	For the student to understand the process of remembering in humans.	Motivation to learn and its importance	2	13
Daily test	use of resources	The student should understand the process of forgetting and its causes.	Study of motivation to learn.	2	14

Reports	Training them on electronic research	The student explains ways to process information and how to explain forgetting	Types of motivation (internal - external)	2	15
Questions	Discussions in the lecture	The student understands the concept of emotions and the factors influencing emotions	The process of remembering, types of remembering, and factors influencing the remembering process.	2	16
Daily test	use of resources	The student explains the process of transferring the learning effect	The process of forgetting, its causes, and the factors affecting the forgetting process.	2	17
Reports	Training them on electronic research	The student determines how to benefit from the process of transferring the learning effect.	Ways of processing information, and theories that explain the process of forgetting	2	18
Questions	Discussions in the lecture	The student should explain the importance of studying feedback and its types	Emotions and factors influencing emotions	2	19
Daily test	use of resources	To show the student the most important educational applications of feedback in the educational process and his daily life	Transfer of the learning effect and the importance of studying the process of transfer of the learning effect	2	20
Reports	Training them on electronic research	The student explains the concept of thinking and the types of thinking in humans	How to benefit from the process of transmission of teaching and learning in the educational process.	2	21
Questions	Discussions in the lecture	The student determines the levels of thinking and ways to stimulate and develop thinking.	The concept and importance of studying feedback and its types in the educational process	2	22
Daily test	use of resources	The student summarizes the topic of learning concepts, its importance, nature, and	Educational applications of the feedback process.	2	23

		generalization of concepts.			
Reports	Training them on electronic research	The student defines the concept of individual differences in teaching.	The meaning of thinking and types of thinking	2	24
Questions	Discussions in the lecture	For the student to distinguish individual differences in thinking styles and brain control.	Levels of thinking and ways to stimulate thinking and develop thinking.	2	25
Daily test	use of resources	The student understands learning theories and their educational applications	The topic of learning concepts, its importance, nature, and generalization of concepts.	2	26
Reports	Training them on electronic research	The student understands learning theories and their educational applications	Individual differences, and how to take them into account in teaching.	2	27
Questions	Discussions in the lecture	The student understands learning theories and their educational applications	Individual differences in thinking styles and brain control	2	28
Daily test	use of resources	The student summarizes the topic of learning concepts, its importance, nature, and generalization of concepts.	Learning theories (Pafof-Skinner)	2	29
Reports	Training them on electronic research	That the student understands learning theories and Its educational applications	Learning theories (foresight theory)	8	30

11. Course assessment

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.

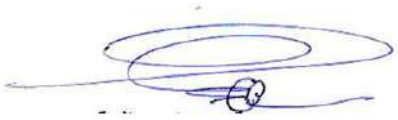
- Mid year exam 25%
- 15% includes (theoretical tests 10%, assignments and reports 5% during the year)
- 60% Final test

12. References

-Basics of educational psychology. Mohieddin and Abdul Rahman Adas 1983 - Learning and Thinking Methods, Ismai Ibrahim Ali, and Wissam Tawfiq Al-Mashhadani 2014, Qanc

BOOKS

House for Printing, Publishing and Distribution, Amman - Jordan. - Learning Theories, Imad Abdul Rahim Al-Zaghloul 2003, Dar Al-Shorouk Publishing and Distribution, Amman - Jordan.	
-Basics of educational psychology. Mohieddin and Abdel Rahman Adas. 1983	Main resources
Educational psychology books.	Recommended resources
	Electronics and website resources



Rahma Talal

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name:	
Arabic Language	
2. Course code	
EDCO26F108	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
Theory lectures	
6. Number of hours (total)/number of credits (total)	
2 theoretical hours	
7. Name of the course tutors	
Name: Ruqayah hamed ali E-mail: ruqayah.h.a@uomsul.edu.iq	
8. Course objectives	
Helping the student to protect his tongue and writing from making mistakes in grammar and spelling, and to be proficient in correct writing, which is necessary for him in the matters of his life.	Objectives of the study subject
9. Teaching and learning strategies	
Encouraging cooperation between the teacher and the learner through continuous communication and interaction between them; This is done through speaking, questioning and discussions with students, writing on the board to implement all of this, and respecting the talents of the students. Education is the organized design that helps the learner achieve the desired change in performance. To achieve the goals and outcomes of targeted learning by relying on sources and tools to deliver scientific content to the learner and choosing the appropriate method of teaching with various circumstances and variables.	The strategy
10. Course structure	

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
Questions	Discussions in the lecture	The reason for developing the science of grammar and the first to develop it	The student's knowledge of Arabic scholars, especially the scholars who developed the science of grammar and those who advocated its development	2	1

Daily test	use of resources	Helping the student to know these sections, how to know them, and the evidence for them using grades	Sections of speech and types of knowledge	2	2
Reports	Training them on electronic research	Protecting the student from making the mistake of knowing the subject of the predicate and protecting his tongue from incorrect parsing of them	The subject, the predicate, and their types	2	3
Questions	Discussions in the lecture	Helping the student to recognize the parsing, the structure, and the parts of the verb so that he does not fall into the parsing error	Parsing, construction, and verb sections	2	4
Daily test	use of resources	Helping the student to differentiate between original grades and grades and subsidiary grades	Original and subsidiary inflectional signs	2	5
Reports	Training them on electronic research	Helping the student to know the grammatical signs of each of them and to differentiate between them and their affixes	The dual and the masculine plural, salem, and their attachments and grammatical signs	2	6
Questions	Discussions in the lecture	To familiarize the student with the grammatical signs and which word each appendix comes from	The sound feminine plural, its attachments and signs Their parsing	2	7
Daily test	use of resources	Helping the student to know it and know its grammatical signs and why it is called the Tamam language	The five names And its parsing signs	2	8
Reports	Training them on electronic research	Protecting the student from making a parsing error, and differentiating between it and the five nouns	The five verbs	2	9
Questions	Discussions in the lecture	Helping the student how to pronounce and write	The hamza of pieces, the hamza of alu,	2	10

		each of them and differentiate between them through the places in which they are located	and the middle and extreme hamza		
Daily test	use of resources	To help the student know the signs of parsing its subjects	Imperfect verbs, the reason for giving them this name, why they are called abrogated, and knowing the meaning of each of them	2	11
Reports	Training them on electronic research	To help the student know the signs of parsing its subjects	Letters similar to the verb, their grammatical signs, and the meaning of each of them	2	12
Questions	Discussions in the lecture	To protect the student's tongue from falling into failure to differentiate between each of them	The rules of the marbuta and basat ta's, where each of them occurs, the lunar and solar lams, and the distinction between the dha and the dha.	2	13
Daily test	use of resources	the student has skilled in examining poetry and distinguishing between them	Vertical poetry and free verse	2	14
Reports	Training them on electronic research	To know to the recipient what the speaker means by his words without clarification	punctuation marks	2	15
Questions	Discussions in the lecture		Mid-year exam		16
Daily test	use of resources	the student has to know that it works like modal verbs, but its predicate is a verbal sentence whose verb is present	Verbs of approach, hope, and initiation	2	17
Reports	Training them on electronic research	the student will be aware and aware of when these numbers are mentioned and feminine with the countable type	Number (masculine and feminine)	2	18

Questions	Discussions in the lecture	the student has to control his syntactic movements when he is in a sentence	Parsing the number, and defining it with (the) definition	2	19
Daily test	use of resources	the student knows when the present tense verb is in the nominative and accusative, with visible vowels and estimated vowels	Parsing of the present tense verb (nominative of the correct and irregular present verbs and their accusative case)	2	20
Reports	Training them on electronic research	To let the student know the cases of their assertion	The correct and irregular present tense verb and its tools	2	21
Questions	Discussions in the lecture	To adjust their grammatical signs	Parsing the defective nouns (the shortened and the deficient)	2	22
Daily test	use of resources	the student can distinguish between them and know when the verb with them is active and active For the unknown	The subject and the deputy subject, the types of each and their parsing	2	23
Reports	Training them on electronic research	To distinguish between them and know their types	The direct object, the direct object, their types, and their expressions	2	24
Questions	Discussions in the lecture	For the student to differentiate between each of them and their types	The absolute object, the direct object, and their types	2	25
Daily test	use of resources	To differentiate between it and other effects	The object for which it is intended (conditions and situations)	2	26
Reports	Training them on electronic research	the student will be able to know the movements of his parsing	What is prohibited from being morphed, and signs of its parsing	2	27
Questions	Discussions in the lecture	the student is well versed in it and the locations of its opening and breaking	The opening of the hamza (Inna), its kasra, and its three cases (obligation, the opening, the obligation of the kasra, and the	2	28

			permissibility of both sides)		
Daily test	use of resources	the student can to distinguish between its sections and names	Thought and its sisters (its definition, its divisions, when the actions of the hearts cease to function, when they are suspended from action, and when their action is cancelled)	2	29
Reports	Training them on electronic research	the student can to be skilled and proficient in knowing the reasons for the sophistication of Arabic poetry	Modern Arabic prose (its renaissance, factors, manifestations, and signs of weakness)		30

11. Course assessment

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.

- Mid year exam 25%
- 15% includes (theoretical tests 10%, assignments and reports 5% during the year)
- 60% Final test

12. References

Grammar by Ibn Aqeel	BOOKS
Adequate grammar Clear grammar and parsing	Main resources
	Recommended resources
General Arabic language lectures for non-specialists	Electronics and website resources

Ruq ayah Hamed Ali

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name:	
English Language	
2. Course Code:	
EDCO26M109	
3. Semester / Year:	
Annual System 2025-2026	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Actual, theoretical and electronic to display required tasks and duties	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours theory	
7. Course administrator's name (mention all, if more than one name)	
Name: Nagham Mohuyaldeen AL-Oubaidy Email: nagham.mohuyaldeen@oumosul.edu.iq	
8. Course Objectives	
Course Objectives	Communicating students with the English language an developing their linguistic ability with regard to terminology. Introducing students to correct reading and writing in English. Introducing students to the correct pronunciation English words • Knowing and understanding the basics of the English language • Explaining the basic processes of the subject. • Identifying the most important terms in the computer subject in the English language
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-4	4	English for special purpose Sports Body parts Soccer	Chapter 1	According t point 9 abov and as neede	Daily Exams Assignments Interaction / Reports
5-9	5		Chapter 2		

		Boxing Daily routine Weight lifting Family		According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
10-14	5		Chapter 3		
		Athletics Feelings Swimming Weather Basketball		According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
15-19	5		Chapter 4		
		Daily problem Fencing College Volleyball		According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
20-25	6	Travelling Gymnastics Food Wrestling Home Handball	Chapter 5	According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
26-30	5	Animal Tennis Jobs 2 .28 Physical fitness Health Travelling	Chapter 6		Daily Exams / Assignments / Interaction / Reports

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 • Mid-year 25% • Endeavor 15% includes (theoretical tests 5%, homework 5%, attendance 5% • Final 60%

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	"New Headway, Beginner Student's Book "Johan and Liz Soars
Main references (sources)	Practical English Usage

Recommended books and references (scientific journals, reports...)	Al-MAWRID – MODREN ARABIC/ENGLISH DICTIONARY
Electronic References, Websites	https://arabic.britannicaenglish.com/
Curriculum update rate	

Name and signature

of the course owner

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name:	
Democracy and Human Rights	
2. Course code	
EDCO26F110	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
Theory lectures	
6. Number of hours (total)/number of credits (total)	
2 theoretical hours	
7. Name of the course tutors	
Name: Shahla kamak abduljwad E-mail: shahla111111@uomsul.edu.iq	
8. Course objectives	
• Study the principles of law • Study international human rights law • Study the characteristics of human rights • Study human rights classifications • Study international organizations and their role in monitoring the implementation of human rights	Objectives of the study subject
9. Teaching and learning strategies	
• Education: Preparing theoretical lectures digitally and electronically • Education: Using examples that link scientific material to applied reality • Learning: Asking direct questions to all students to find out how much they have benefited from the scientific material and increasing their interaction with each other to support the learning process. • Learning: Creating interaction between students through questions and answers and providing an environment that enables the student to manage the lecture or discussion.	The strategy

10. Course structure

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
Questions	Discussions in the lecture	- Defining the law and social rules that regulate society.		1	1
Daily test	use of resources	- Types of laws		1	2
Reports	Training them on electronic research	- Definition of human rights		1	3

		- Characteristics - Importance			
Questions	Discussions in the lecture	Types of human rights in the 2005 Constitution of the Republic of Iraq		1	4
Daily test	use of resources	Types of human rights in the 2005 Constitution of the Republic of Iraq		1	5
Reports	Training them on electronic research	Types of human rights in the 2005 Constitution of the Republic of Iraq		1	6
Questions	Discussions in the lecture	- National and procedural mechanisms for its implementation		1	7
Daily test	use of resources	- National and procedural mechanisms for its implementation		1	8
Reports	Training them on electronic research	- Definition of the International Bill of Human Rights and its elements		1	9
Questions	Discussions in the lecture	- Definition of the International Bill of Human Rights and its elements		1	10
Daily test	use of resources	National and procedural mechanisms for implementing human rights in Iraq		1	11
Reports	Training them on electronic research	- The rights of women, children, minorities and persons with disabilities in international conventions		1	12
Questions	Discussions in the lecture	- The rights of women, children, minorities and persons with disabilities in international conventions		1	13
Daily test	use of resources	- The rights of women, children, minorities and persons with disabilities in international conventions		1	14

Reports	Training them on electronic research	- The rights of women, children, minorities and persons with disabilities in international conventions		1	15
Questions	Discussions in the lecture	National mechanisms and procedures for implementing specific or group rights		1	16
Daily test	use of resources	National mechanisms and procedures for implementing specific or group rights		1	17
Reports	Training them on electronic research	Combating gross human rights violations		1	18
Questions	Discussions in the lecture	Combating gross human rights violations		1	19
Daily test	use of resources	•International humanitarian law and the protection of human rights in conflicts		1	20
Reports	Training them on electronic research	•International humanitarian law and the protection of human rights in conflicts		1	21
Questions	Discussions in the lecture	International humanitarian law and the protection of human rights in conflicts		1	22
Daily test	use of resources	•International humanitarian law and the protection of human rights in conflicts		1	23
Reports	Training them on electronic research	Gross human rights violations in Iraq		1	24
Questions	Discussions in the lecture	Gross human rights violations in Iraq		1	25
Daily test	use of resources	• The Human Rights Council and the Universal Periodic Review Mechanism		1	26

Reports	Training them on electronic research	The Human Rights Council and the Universal Periodic Review Mechanism		1	27 - 30

11. Course assessment	
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. • Mid year exam 25% • 15% includes (theoretical tests 10%, assignments and reports 5% during the year) • 60% Final test	
12. References	
	BOOKS
- United Nations website - International Red Cross - Binding (Introduction to the Study of Human Rights and Freedoms) by Dr. Firas Jarjis Al-Khatuni, University of Mosul, College of Basic Education - Abdul Razzaq Al-Bakri and Zuhair Al-Bashir, Introduction to the Study of Law, Dar Al-Sanhouri	Main resources
	Recommended resources
	Electronics and website resources

اسم وتوقيع صاحب المقرر

Shahla Kamak Abduljwad

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name:	
Data Structure and algorithms	
2. Course code	
EDCO26F201	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
Theory and Practical lectures + electronic	
6. Number of hours (total)/number of credits (total)	
2 theoretical hours + 2 practical hours	
7. Name of the course tutors	
Name: Abdulnaser younis Ahmed E-mail: abdulnasir.younus @uomosul.edu.iq Name: Yahya Qasim Ibraheem E-mail: yahyaki@uomosul.edu.iq Name: Asmaa M.Mohammed E-mail: asmaa_omw@uomosul.edu.iq	
8. Course objectives	
Learn about ways to organize and store data using different graphic structures. Identify the set of operations that are used to manage each graphic structure Learn how to represent and implement each data structure using the computer Identify the types of applications for each graphic structure Using efficient algorithms to process data and reach results in quick and efficient ways, such as search and ranking algorithms	**Objectives of the study subject**
9. Teaching and learning strategies	
• Education: Preparing theoretical lectures digitally and electronically, relying on modern sources belonging to reputable publishing houses. • Preparing and implementing practical aspect lectures digitally and on paper. • Education: Providing clear video and recorded lectures • Education: Using examples that link scientific material to applied reality. Data display devices are also used to support the education process • Education: Training students on various questions and examples, writing programming paragraphs or tracking programs, in addition to analyzing, interpreting, modifying and maintaining programs based on object-oriented programming specifications. • Learning: Asking direct questions to all students to find out the extent to which they have benefited from the scientific material and increasing their interaction with each other to support the learning process. • Learning: Each specific group explains the duties assigned to them, interacts among the students with questions and answers, and provides an environment that enables the student to manage the lecture or discussion.	**The strategy**
10. Course structure	

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
Questions	Discussions in the lecture	Introduction into Data structures	Importance of DS	4	1
Daily test	use of resources	Types of arrays and Operations on them	Types of arrays and how to do operations on them	4	2
Reports	Training them on electronic research	Classifications of DS and Calculating memory address of one dimensional array	Types of DS and How to find out memory location for arrays	4	3
Questions	Discussions in the lecture	Calculating memory address of two dimensional array	How to find out memory location for 2-D arrays	4	4
Daily test	use of resources	Calculating memory address of structures	How to find out memory location for structures	4	5
Reports	Training them on electronic research	Calculating memory address of nested structures	How to find out memory location for nested struc.	4	6
Questions	Discussions in the lecture	Introduction into Stacks and related applications	Stacks	4	7
Daily test	use of resources	Stack Push and Pop algorithms	Push and Pop algorithm	4	8
Reports	Training them on electronic research	Stack examples	Tutorials on stacks	4	9
Questions	Discussions in the lecture	Introduction into Queue and related app.	Queue	4	10
Daily test	use of resources	Queue Enqueue and Dequeue algorithm	Enqueue and Dequeue algorithm	4	11
Reports	Training them on electronic research	Circular Queue, Enqueue and Dequeue in Circular Queue	Introduction on CQ, Enqueue an dequeue	4	12
Questions	Discussions in the lecture	Introduction into pointers	Pointers	4	13

Daily test	use of resources	Using pointer in passing parameters	Passing arguments by pointers	4	14
Reports	Training them on electronic research	Linked lists	Linked lists	4	15
Questions	Discussions in the lecture	Doubly linked list	Doubly Linked Lists	4	16
Daily test	use of resources	Circular singly linked list	Tutorials	4	17
Reports	Training them on electronic research	Circular doubly linked list, stack LL, and queue LL implementations	Circular singly linked list, stack LL, and queue LL implementations	4	18
Questions	Discussions in the lecture	Introduction to Tree data structure	Tree data structure	4	19
Daily test	use of resources	Binary search tree	Binary search tree	4	20
Reports	Training them on electronic research	Traversing tree data structure	Inorder, Preorder and postorder	4	21
Questions	Discussions in the lecture	Operations on Binary Search tree	How to insert, search and delete values	4	22
Daily test	use of resources	Graph and its representation	What is Graph and how it is represented	4	23
Reports	Training them on electronic research	Introduction to Sorting and Insertion sort	How to do insertion sort	4	24
Questions	Discussions in the lecture	Selection and Bubble sort	Selection and Bubble sort	4	25
Daily test	use of resources	Introduction to searching	Searching	4	26
Reports	Training them on electronic research	Linear search	Linear search	4	27
Questions	Discussions in the lecture	Binary search	Binary search	4	28

Daily test	use of resources	Complexities	Time and space complexities	4	29
Reports	Training them on electronic research	Complexity of different data structures , and using DS in sustainable development	How to find the complexity of a DSs, and how to make use of them in sustainable development	4	30

11. Course assessment

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.

•Semi-weekly short tests (quiz) asking sudden and overlapping questions with an explanation of Article 10

•Laboratory tests on the computer and in written form to enable the student to solve them without a computer 10

•Monthly tests 10

•Termly and annual tests 70

12. References

	BOOKS
Data Structures and Algorithm Analysis in C++ by MARK ALLEM WEISS, Fourth Edition 2014, Pearson	Main resources
	Recommended resources
https://www.geeksforgeeks.org/data-structures/ https://www.tutorialspoint.com/data_structures_algorithms/index.htm https://opendatastructures.org/	Electronics and website resources

Assist. Prof. Dr. Abdulnasir Younis Ahmad

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name and Stage:
Object Oriented Programming -Second Stage
2. Course Code:
EDCO26F202
3. Semester / Year:
First and Second / 2025-2026
4. Description Preparation Date:
1-9-2025
5. Available Attendance Forms:
Forms of attendance include the following methods: • In-person attendance in the classroom or laboratories within the department. • Attendance in the virtual classroom via the Google Classroom platform (enrichment component).
6. Number of Credit Hours (Total) / Number of Units (Total)
• 4 hours per week, consisting of (2 hours theoretical and 2 hours practical). • 120 hours throughout the academic year, consisting of (60 hours theoretical and 60 hours practical).
7. Course administrator's name (mention all, if more than one name) and Scientific title
Name: Ass.Prof. Alaa Y. Taqa Email: alaa.taqa@uomosul.edu.iq Name: Ass. Prof. Yahya Ismail Ibraheem Email: yahyaismail@uomosul.edu.iq Name: Ass. Lect. Ammar Adel Ahmed Email: ammaraladel@uomosul.edu.iq
8. Course Objectives

Subject Objectives	• This course aims to enable students to comprehend the principles of object-oriented programming using the Java language. • To help students develop simple applications • based on the object-oriented programming paradigm using Java and Python. • To prepare students for future roles in • teaching programming subjects. • To highlight the role of programming in achieving the objectives of sustainable

	development.

9. Teaching and Learning Strategies

Strategy	• Teaching: Preparing theoretical lectures in digital and electronic formats based on recent and reputable academic sources. • Teaching: Preparing and delivering practical sessions in both digital and printed formats. • Teaching: Providing clear recorded and video-based lectures to support student learning. • Teaching: Using practical examples that connect course content to real-world applications, along with presentation tools to enhance the learning process. • Teaching: Training students through a variety of exercises, including writing program segments, tracing program execution, analyzing and interpreting code, as well as modifying and maintaining programs based on object-oriented programming principles. • Learning: Asking direct questions to all students to assess their understanding and encourage active participation. • Learning: Assigning groups of students to present their tasks and engage in discussions through questions and answers, creating an environment that supports student-led learning and dialogue.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Programming Paradigms	• Programming Paradigms - Non structured &structured Programming, - Procedural Oriented Programming & OOP	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
2	4	• Introduction to OOP 1	• Introduction to OOP 1 Class notation and definition (with graphical examples)	use of resources	"In accordance with point 11 and as needed."

3	4	• Introduction to OOP 2	• Introduction to OOP 2 – Class relation types – Abstraction concept and abstract data type – Examples	Training them on electronic research	"In accordance with point 11 and as needed."
4	4	OOP Concept	• OOP concepts - Encapsulation concept - Data hiding concept - Reuse concept - Examples	Discussions in the lecture	"In accordance with point 11 and as needed."
5	4	Defining functi (Methods)in Java	• Functions (Methods) def. - Types of functions - Arguments of function Examples	Use of resources	"In accordance with point 11 and as needed."
6	4	• Class definition using Java	• Class definition using Java - Class body - Methods Examples	use of resources	"In accordance with point 11 and as needed."
7	4	• Creating objects	• Creating objects - Access attributes - Access methods - Examples - private, and public - Examples	Training them on electronic research	"In accordance with point 11 and as needed."
8	4	▪ Polymorphism concepts first part 1	• Polymorphism concepts first part 1 - Method Overloading - Examples	Discussions in the lecture	"In accordance with point 11 and as needed."
9	4	Array Object	• Array of objects 1 - Concepts - Declaration - Initialization - Allocate in memory Applications	use of resources	"In accordance with point 11 and as needed."
10	4	Constructor Methods	• Constructor Methods - Definition - Examples	Discussions in the lecture	"In accordance with point 11 and as needed."

11	4	• Polymorphism concepts first part 2	• Polymorphism concepts first part 2 - Constructor Overloading - Examples	use of resources	"In accordance with point 11 and as needed."
12	4	String 1	• Strings 1 - Declaration and Initialization - Reading and printing - Example	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
13	4	Strings 2	• Strings 2 - Processing (sorting, searching, concatenating, etc) - String as the method parameters and return values - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
14	4	• Math class and classes of Number types	• Math class and classes of Number types - Math methods - Number (Integer, Float,…,etc) methods - Example	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
15	4	• Inheritance 1	• Inheritance 1 - Inheritance types - Inheritance structures - Protected Access type - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
Mid Term Exam					
16	4	Inheritance 2	• Inheritance 2 - Inheritance Methods in subclass - Constructor method in subclass - Example	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
17	4	• Special java keywords 1	• Special java keywords 1 - this keyword in java	"In accordance with the	"In accordance

			- Super keyword in java • Special java keywords2 - Method overridden introduction - Shadow variables - Examples	points outlined above and as required.”	with point 11 and as needed.”
18	4	• Special java keywords 2	• Special java keywords2 - Method overridden introduction - Shadow variables - Examples	“In accordance with the points outlined above and as required.”	“In accordance with point 11 and as needed.”
19	4	Final keyword java	• Final keyword in java - Definition - Examples	“In accordance with the points outlined above and as required.”	“In accordance with point 11 and as needed.”
20	4	• Abstract Class	• Abstract Class - Definition - Abstract Method definition - Examples	“In accordance with the points outlined above and as required.”	“In accordance with point 11 and as needed.”
21	4	Polymorphism concepts sec part	• Polymorphism concepts second part - Method overloading (in subclass) - Method overridden	“In accordance with the points outlined above and as required.”	“In accordance with point 11 and as needed.”
22	4	Polymorphism concepts third pa	• Polymorphism concepts third part - Static and dynamic binding - -Examples	“In accordance with the points outlined above and as required.”	“In accordance with point 11 and as needed.”
23	4	Multiple Inheritance concepts	• Multiple Inheritance concepts - Interface definition - -Examples	“In accordance with the points outlined above and as required.”	“In accordance with point 11 and as needed.”
24	4	Static class members	• Static class and members - Static attributes - Static methods - Static class - Examples	“In accordance with the points outlined above and as required.”	“In accordance with point 11 and as needed.”

25	4	• File Class	• File Class - Definition - Creating file for reading - Creating file for writing - Appending to file - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
26	4	• Java Package • Nested Classes	• Java Packages - Creating packages - Import packages - Access types (access modifier) with packages - Examples • Nested Classes - Nested Classes (Inner class) Definition - Anonymous Inner Classes Definition - Mixing Static and Non- Static Import - Enums as Classes - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
27	4	• Introduction to the Python language • Python language and its support for object-oriented programming Definition of cl and object w examples,	• Introduction - installation - Using • Python for OOP - Class definition - Object creation - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
28	4	• Python language and its support for object-oriented programming • Genetics • Polymorphism	• Python for OOP - Inheritance - Polymorphism - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
29	4	Sustainable development1	• Sustainable development1 - Sustainable development def. - Sustainable development goals - Energy Efficiency - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."

30	4	Sustainable development2	• Sustainable development2 - Resource Optimization - Hardware Recycling - Sustainable Programming - Examples	"In accordance with the points outlined above and as required."	"In accordance with point 11 and as needed."
Final Exam					

11. Course Evaluation and Marks

Grade Distribution (Out of 100) Based on Assigned Student Tasks:

- 30 marks – Instructor's assessment, distributed as follows:
  - 5 marks for home works and assignments
  - 5 marks for reports
  - 5 marks for practical application projects
  - 5 marks for quizzes and short tests
  - 10 marks for the practical examination
- 20 marks – Midterm examination
- 50 marks – Final examination

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	-
Main references (sources)	1- Interactive Object-Oriented Programming in Java Learn and Test Your Programming Skills Second Edition Vaskaran Sarcar Foreword by Avirup Mullic,Press,2016 2- Concise Guide to Object-Oriented Programming An Accessible Approach Using Java,Kingsley Sage School of Engineering and Informatics, University of Sussex, Falmer, East Sussex, UK Springer,2019 3- Java How to program", Deitel and Deitel,Prentice Hall,2015 4- Java How to Program, 11/e, Early Objects , ", Deitel and Deitel,Prentice,2020
Recommended books and references (scientific journals, reports...)	1- Python Object Oriented Programming Exercises Volume 2 by Edcorner Learning,2021 2- Learning Python: Powerful Object-Oriented Programming, by Mark Lutz,Oreill 2013"
Electronic References, Websites	https://www.youtube.com/@oop_grade2262

Assist. Prof. Dr. Alaa Yaseen Taqa

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name					
Microprocessors					
2. Course code					
EDCO26F203					
3. semester /year					
Second					
4. Date this description was prepared					
1/9/2025					
5. Available attendance forms					
presence					
6. Number of study hours (total) / Number of units (total)					
2/2					
7. Course instructor name (if applicable) More than one name is mentioned(					
Name: Assistant Professor Ali Abdul Razzaq Khader Ms. Israa Abdel Salam . Raghad Hazem Ms. aliabd@uomosul.edu.iq					
8. Course objectives					
Teaching the student the internal parts of processor and how it works Enabling the student to program in assembl language, which is used in many computer fiel Enabling the student to use this information writing various programs The student should be able to use his informat in teaching.		Course objectives			
9. Teaching and learning strategies					
Providing printed lectures from modern sources, examples, solved and unsol questions. The student solves it and extracts errors if it depends on error detection, in additio turning the lesson into a discussion forum by allowing students to ask questions inquiries and discuss solutions with the rest of the students.				**Strategy**	
10. Course structure					
Evaluation method	**Learning method**	**Name of the unit or topic**	**Required learning outcomes**	**hours**	**week**

According to point 10 above	According to point 10 above	Cpu architecture	Teaching the student the processor architecture	2n+2a	1
According to point 10 above	According to point 10 above	Core i5 architecture	Design concept of the internal architecture of the Core i5 processor	2n+2a	2
According to point 10 above	According to point 10 above	Cache memory in Core i5	cache memory in core i5 processor	2n+2a	3
According to point 10 above	According to point 10 above	Fetch and execute cycle	Student education Processor work	2n+2a	4
According to point 10 above	According to point 10 above	Explain the bus system	Teaching the student how to work with vectors in the calculator	2n+2a	5
According to point 10 above	According to point 10 above	memory	Introducing the student to the types of memory and their characteristics	2n+2a	6
According to point 10 above	According to point 10 above	8086 mp architecture	Introduction to the 8086 processor architecture	2n+2a	7
According to point 10 above	According to point 10 above	Execution unit	Introducing the student to the components of the processor, including the execution unit.	2n+2a	8
According to point 10 above	According to point 10 above	Flags register	Introducing the student to the science recorder	2n+2a	9
According to point 10 above	According to point 10 above	Bus interface unit	Definition of the transport unit in the processor architecture	2n+2a	10

According to point 10 above	According to point 10 above	Addressing modes	Explanation of the types of addressing	2n+2a	11
According to point 10 above	According to point 10 above	Addressing modes	=	2n+2a	12
According to point 10 above	According to point 10 above	Machine code and instruction format	Explanation of computer language and structure of the system	2n+2a	13
According to point 10 above	According to point 10 above	Arithmetic instruction	Definition of sports instructions	2n+2a	14
According to point 10 above	According to point 10 above	=	=	2n+2a	15
According to point 10 above	According to point 10 above	Logic instruction	Definition of logical injunctions	2n+2a	16
According to point 10 above	According to point 10 above	Shift and rotate instruction	Definition of instructions Crawling and rotating	2n+2a	
According to point 10 above	According to point 10 above	=	=	2n+2a	17
					18
According to point 10 above	According to point 10 above	Transfer control instruction	Definition of transport and control instructions	2n+2a	19
According to point 10 above	According to point 10 above	=	=	2n+2a	20
According to point 10 above	According to point 10 above	deals Block mem.	Explain the definition of dealing with a sequence in memory	2n+2a	21

According to point 10 above	According to point 10 above	string instruction	Teaching students programming with serial instructions	2n+2a	22
According to point 10 above	According to point 10 above	=	=	2n+2a	23
According to point 10 above	According to point 10 above	stack	Stack Explanation	2n+2a	24
According to point 10 above	According to point 10 above	interrupt	Definition of cutting	2n+2a	25
According to point 10 above	According to point 10 above	Interrupt type	Teaching the student the types of pieces	2n+2a	26
According to point 10 above	According to point 10 above	i /o port	Explanation of addressing input and output devices	2n+2a	27
According to point 10 above	According to point 10 above	array	Teaching the student how to define and manipulate arrays and store data in them	2n+2a	28
According to point 10 above	According to point 10 above	procedure	Teaching the student how to write subroutines	2n+2a	29
According to point 10 above	According to point 10 above	Review of Pentium	Solve additional examples	2n+2a	30

11. Course Evaluation	
Short tests) quiz ,(homework , classwork , monthly and semester exams .	
12. Learning and teaching resources	
The textbook in Arabic x86 processors programming and assembly Textbook in English: • Richard Blum , professional assembly language, Wi Publishing, Inc , 2005 Walter a. triebel ," the 8086 . microprocessor architecture, software and interfac techniques. " Prentice Hall, 1985	Required textbooks (methodology available(

THE INTEL MICROPROCESSORS Pentium, Penti Pro Processor Pentium II, Pentium III, Pentium 4, a Core2 with 64-Bit Extensions Architectu Programming, and Interfacing Eighth Edition BARRY BREY 2009 Internet	
INTEL MICROPROCESSORS Pentium, Pentium Processor Pentium II, Pentium III, Pentium 4, and Co with 64-Bit Extensions Architecture, Programming, a Interfacing Eighth Edition BARRY B. BREY 2009	Main references (sources)
	Recommended supporting books and references) scientific journals, reports, etc(.
	Electronic references , websites

Assist. Prof. Ali Abdul Razzaq Khader

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name and stage:	
Numerical Analysis / second stage	
2. Course code	
EDCO26F204	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
Theory and Practical lectures + electronic	
6. Number of hours (total)/number of credits (total)	
3 hrs. per week 1 theoretical hours + 2 practical hours	
7. Name of the course tutors	
Name: Prof. Dr. Qais Ismail Ibrahim suhaib.altamer@uomosul.edu.iq Ass. prof dr. Suhayb Abduljabbar Abdulbaqi	
8. Course objectives	
• Providing distinguished education based on keeping pace with development to achieve a solid scientific level at the level of preliminary studies and preparation for postgraduate studies • Preparing and qualifying graduates who are scientifically and practically qualified to meet the requirements of the labor market in the public and private sectors in computer science through diversity in learning and teaching methods. • Preparing specialized programs in the field of computing according to the standards followed regionally and globally • Providing distinguished teaching staff and qualifying them for scientific research to train students to apply acquired knowledge and skills to solve realistic problems • Providing quality services and consultations to the community and the labor market in the field of computing and information technology	**Objectives of the study subject**
9. Teaching and learning strategies	
Lecture and discussion method.	**The strategy**

10. Course structure

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week

Questions	Discussions in the lecture	Introduction to numerical analysis		4	1
Daily test	use of resources	Introduction to numerical solution and counting erro		4	2
Reports	Training them on electronic research	Practical examples thereof		4	3
Questions	Discussions in the lecture	Introduction to solving nonlinear equations		4	4
Daily test	use of resources	Drawing method		4	5
Reports	Training them on electronic research	Method of analysis		4	6
Questions	Discussions in the lecture	An introduction to numeri methods for solving a nonlinear equation		4	7
Daily test	use of resources	Bisection Method + false position method		4	8
Reports	Training them on electronic research	Secant method + Fixed-po		4	9
Questions	Discussions in the lecture	Newton Raphson Method		4	10
Daily test	use of resources	The numerical solution to system of linear equations		4	11
Reports	Training them on electronic research	Direct methods Kaos method		4	12
Questions	Discussions in the lecture	Kaus - Jordan method		4	13
Daily test	use of resources	Jacoby method		4	14
Questions	Discussions in the lecture	gauss-seidel method		4	15

Midterm Exam					
Questions	use of resources	INTERPOLATION & EXTRAPOLATION		4	16
Questions	Discussions in the lecture	Lagrange Interpolation Method		4	17
Questions	use of resources	Calculus of Finite Differences		4	18
Questions	Discussions in the lecture	Forward differences		4	19
Questions	use of resources	Backward differences		4	20
Reports	Discussions in the lecture	Divided differences		4	21
Questions	use of resources	Central differences		4	22
Questions	Discussions in the lecture	Numerical Integration		4	23
Questions	use of resources	Trapezium method		4	24
Reports	Discussions in the lecture	Simpson’s method		4	25
Questions	use of resources	Simpson’s method 3/8		4	26
Reports	Discussions in the lecture	Introduction to methods fo solving differential equatio by numerical methods		4	27
Questions	use of resources	Taylor Method		4	28
Reports	Discussions in the lecture	Euler Method		4	29
Questions	use of resources	Runge – Kutta Method		4	30

	11. Course assessment	
	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. 30% lecturer marks, 20% mid exam , 50% final	
	12. References	
	3. A. D. Anderson, Introduction to numerical analysis, 2004 Schoum, numerical analysis and its applications, 1999 Burden, Numerical analysis using matlab, 2006 Any book for numerical methods is suitable to study the subjects	BOOKS
		Main resources
		Recommended resources
		Electronics and website resources
	Percentage of Curriculum update	3% Yearly

Name and signature
Ass. prof dr. Suhayb Abduljabbar Abdulbaqi

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name:	
DataBase	
2. Course code	
EDCO26F205	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
2/9/2025	
5. Available forms of attendance	
Theory and Practical lectures + electronic	
6. Number of hours (total)/number of credits (total)	
30 theoretical hours + 30 practical hours	
7. Name of the course tutors	
Name: Mohammed khaldoon altalib mohammadaltalib79@uomosul.edu.iq Asmaa Muafaq: asmaa_mow@uomosul.edu.iq Zaid Fawaz : zaidfawaz82@uomosul.edu.iq	
8. Course objectives	
The student will acquire skills in analyzing systems and collecting data by starting with the system life cycle step by step in general, and then entering into database systems from a theoretical and practical perspective for the purpose of designing and building efficient and well-designed systems. This is in addition to the skills necessary to teach this subject to middle and middle school students.	Objectives of the study subject
9. Teaching and learning strategies	
• Education: Providing printed lectures from modern and diverse sources rich in examples • Education: Using the smart board to teach students, clarify the solution steps, and extract results • Education: Solving some questions while deliberately containing errors and making students extract the error • Learning: Asking questions and inquiries and making the student turn to teaching by explaining and solving on the blackboard at that stage. • Learning: Direct questions for all students to find out the extent of their interaction and to get the rest to pay attention • Learning: Each specific group explains its report, interacts among students with questions and answers, and provides • An environment that enables the student to lead the lecture or discussion. • Make groups of students, each group has a specific project.	The strategy

10. Course structure

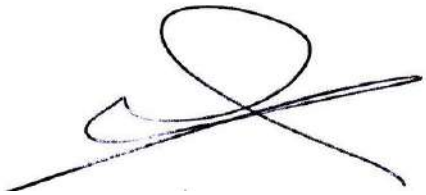
Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
According to point 11	According to point 9 above	Introduction to Database system (why DB) and		4	1

		database management system (DBMS)			
According to point 11	According to point 9 above	Fundamentals of Databases.		4	2
According to point 11	According to point 9 above	Database System Concepts and Architecture		4	3
According to point 11	According to point 9 above	Data model, Schemas, Instances		4	4
According to point 11	According to point 9 above	Data Modeling Using the Entity Relationship Model		4	5
According to point 11	According to point 9 above	How to represent entities and attributes in the ER model		4	6
According to point 11	According to point 9 above	Participation Constraints and Existence Dependencies		4	7
According to point 11	According to point 9 above	The Enhanced Entity Relationship (EER) model (Subclass / superclass)		4	8
According to point 11	According to point 9 above	Specialization and Generalization		4	9
According to point 11	According to point 9 above	Exercise		4	10
According to point 11	According to point 9 above	The Relational Data Model and Relational Database Constraints		4	11
According to point 11	According to point 9 above	Types of DB Keys		4	12
According to point 11	According to point 9 above	Mapping ER and EER models to Relational models		4	13
According to point 11	According to point 9 above	Relational Integrity constraints		4	14
According to point 11	According to point 9 above	An Overview to Normalization and The		4	15

		Problems of Redundancy s			
According to point 11	According to point 9 above	Functional Dependencies and Rules of conclusion		4	16
According to point 11	According to point 9 above	The Three Normalization Forms ,1NF.22NF, 3NF		4	17
According to point 11	According to point 9 above	Introduction to Transaction Processing Concepts		4	18
According to point 11	According to point 9 above	Why Recovery is needed and the types of failures the system		4	19
According to point 11	According to point 9 above	The Log file and ACID properties		4	20
According to point 11	According to point 9 above	SQL Server Definition and installation.		4	21
According to point 11	According to point 9 above	SQL commands for Data definition language (DDL)		4	22
According to point 11	According to point 9 above	Data manipulation language (DML) SQL commands and Data Control Language (DCL)		4	23
According to point 11	According to point 9 above	SQL commands for Data query language (DQL) and Transaction Control Language DCL		4	24
According to point 11	Discussions in the lecture	Nested Query and Join between tables		4	25
According to point 11	According to point 9 above	Understanding the terms (system, Information system, Information Technology , Systems Analyst)		4	26
According to point 11	According to point 9 above	Introduction to Analysis of Database systems and Design of Information Systems		4	27

According to point 11	According to point 9 above	Structure Analysis The life cycle of the system: SDLC		4	28
According to point 11	According to point 9 above	Planning, Analysis Phase Design, implementation and maintain and support phases		4	29
According to point 11	According to point 9 above	-Introduction Harnessing systems analysis to achieve the Sustainable Development Goals -Analyzing health data systems to support healthcare systems. -Supporting quality education. -Improving the sustainability of natural resources. -Supporting innovation in industry and infrastructure -Supporting the transition to clean energy. -Supporting sustainable cities and communities. -Improving food security. - Supporting justice and equality		4	30
11. Course assessment					
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. •Semi-weekly short tests (quiz) asking sudden and overlapping questions with an explanation of Article 10 •Laboratory tests on the computer and in written form to enable the student to solve them without a computer 10 •Monthly tests 10 •Termly and annual tests 70					
12. References					
			BOOKS		

• "FUNDAMENTALS OF Database Systems" Ramez Elmasri, Shamkant B. Navathe SIXTH EDITION, 2010. • 'Database Systems", Thomas Connolly • Carolyn Begg, SIXTH EDITION. • "Developing Information Systems: concepts, Issues, And Practice C. Avgerou And T. Cornford, 2nd Ed., Macmillan Press, 1998.	Main resources
	Recommended resources
www.Tutorialspoints.com https://www.sqlservertutorial.net	Electronics and website resources
% 06	Percentage of Curriculum update



Dr. Mohammed Khaldoon

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name and Stage:	
Computational Theory\ Second Stage	
2. Course code	
EDCO26F206	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
9/2025	
5. Available forms of attendance	
Theory lectures	
6. Number of hours (total)/number of credits (total)	
2 theoretical hours	
7. Name of the course tutors	
Name: Kanar Mohammed Sami E-mail: lamarsafwan111@uomosul.edu.iq Nagham Tharwat nagham.th@uomosul.edu.iq	
8. Course objectives	
1. Confirm theoretical models of calculation and analyze them 2. Define and prove the capabilities and limitations of certain models of computation 3. Explaining the problems that are impossible to solve and cannot be answered by any mathematical model 4. Prove that there are limits on the account within the context of source limits 5. The possibility of finding solutions to some of the problems facing related to computational theory	Objectives of the study subject
9. Teaching and learning strategies	
Lecture and discussion method.	The strategy
10. Course structure	

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
Questions	Discussions in the lecture	Define computational Theory		3	1
Questions	Sets	Sets		3	2
Questions	Graphics	Graphics		3	3
Questions	Language theory	Language theory		3	4
Daily test	use of resources	Grammar		3	5
Reports	Training them on electronic research	Derivation		3	6
Questions	Discussions in the lecture	grammar types		3	7

Daily test	use of resources	Context sensitive grammar(CSG)		3	8
Reports	Training them on electronic research	Context free grammar(CFG)		3	9
Questions	Discussions in the lecture	Regular grammar (RG)		3	10
Daily test	use of resources	Ambiguity		3	11
Reports	Training them on electronic research	Chomsky normal form (CNF)		3	12
Questions	Discussions in the lecture	Parse Tree		3	13
Questions	Discussions in the lecture	(CNF) Theorem 1		3	14
Questions	Discussions in the lecture	(CNF) Theorem 2		3	15
Mid-Year Examinations					
Questions	Discussions in the lecture	(CNF) Theorem 3		3	16
Questions	Discussions in the lecture	DFA NDFA		3	17
		Finite automata		3	18
Daily test	use of resources	Finite automata Deterministic FA		3	19
Questions	use of resources	Non Deterministic FA (DFA)		3	20
Daily test	Discussions in the lecture	Non Deterministic FA (DFA)		3	21
Questions	Discussions in the lecture	Convert from NDFA to DFA		3	22
Daily test and discussion	Discussions in the lecture	Convert from NDFA to DFA		3	23
Questions	use of resources	transition-Finite automata with ε transition		3	24
Questions	use of resources	transition-Finite automata with ε transition then NDFA to DFA		3	25
Questions	use of resources	Introduction to Regular Expression		3	26

Daily test	use of resources	Exercises on RE		3	27
Questions	use of resources	RE→FA FA→RE transformation		3	28
Reports	Training them on electronic research	Introduction in Push down automata (PDA)		3	29
Questions	use of resources	(PDA) discussion and exercises		3	30

11. Course assessment

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.

- Mid year exam 25%
- 15% includes (theoretical tests 10%, assignments and reports 5% during the year)
- 60% Final test

12. References

1-Digital Design, Third Edition, by M. Morris Mano. Prentice-Hal Inc. 2002. 2-Logic Design ,Digital Principles and Application", Malvino, 2000 3-"Introduction to Logic Design" (2nd) edition), Sajjan G. Shiva, 2007	BOOKS
	Main resources
	Recommended resources
	Electronics and website resour
Percentage of Curriculum update	30%

Asst.Prof.Dr. Mohammed Hazim Alkawaz

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
أ.م.د. محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course Description

1. Course Title and Academic Level	
Leadership and Educational Administration (Second Year)	
2. Course Code	
EDCO26F207	
3. Semester / Academic Year	
2026-2025	
4. Date of Course Description Preparation	
1/9/2025	
5. Available Attendance Formats	
In-person (on-campus) and online learning.	
6. Total Credit Hours / Units	
(60 theoretical hours) equivalent to (4 units)	
7. Course Coordinator(s) and Academic Title	
Name: Lubna Mohammed Ahmed Email: lubna.mohammed@uomosul.edu.iq	
8. Course Objectives	
The course aims to	• To familiarize students with the school and institutional systems and highlight the importance of secondary education. • To provide students with knowledge of educational supervision, its objectives, and its traditional and contemporary methods. • To equip students with theoretical knowledge of secondary education systems through examining selected international experiences at this educational stage. • To develop students' skills in lesson planning and organization and in applying scientific procedures for managing educational work within educational institutions. • To enable students to understand that educational practice is structured around patterns of educational administration (authoritarian, democratic, and laissez-faire).

	• To help students identify the elements, components, and objectives of educational administration. • To help students identify recent educational developments and innovations in Iraq. • To introduce students to secondary education, its objectives, admission requirements, and examination types. • To identify the skills required of school principals and the duties they are responsible for performing. • To introduce centralized and decentralized educational administration and explain their advantages and disadvantages.
9. Teaching and Learning Strategies	
Strategies	□ Lectures, guided discussions, use of the Google Classroom platform, and problem-based learning. □ Interactive lectures, reciprocal teaching, brainstorming, and questioning techniques.

10. Course Structure

Week	Hours	Learning Outcomes	Unit/Topic	Teaching Method	Assessment Method
1-4	2*4 = 8	• Students will be able to recognize the concept of educational administration. • Students will be able to explain the relationship among the levels of educational administration. • Students will be able to identify the elements of educational administration. • Students will be able to define the concepts and characteristics of educational administration.	• Administration, educational, instructional, and school administration • Concepts and characteristics of educational administration • Relationship among levels of educational administration • Elements of educational administration (objectives, planning, organization, communication, follow-up, evaluation, decision-making) • Administration: science or art?	Theoretical	Oral and Written

5-8	2*4 = 8	• Students will be able to compare centralized and decentralized administrative patterns. • Students will be able to define centralized and decentralized administration. • Students will be able to explain the advantages of centralized and decentralized administration. • Students will be able to explain the disadvantages of centralized and decentralized administration.	• Centralized and decentralized administration • Advantages and disadvantages of centralized administration • Advantages and disadvantages of decentralized administration	Theoretical	Oral and Written
9-12	2*4 = 8	• Students will be able to understand the philosophy of educational administration. • Students will be able to apply the operational fields of educational administration. • Students will be able to compare traditional and modern approaches in educational administration.	Educational administration Philosophy of educational administration Importance of educational administration Objectives of educational administration Operational fields of educational administration Modern trends in educational administration Power and factors influencing educational administration Modern theories in educational administration Educational administration and decision-making	Theoretical	Oral and Written

		• Students will be able to differentiate between educational, school, and pedagogical administration. • Students will be able to make and implement decisions. • Students will be able to apply modern theories in educational administration			
13-16	2*4 = 8	• Students will be able to understand the concept of school administration. • Students will be able to compare different patterns of school administration. • Students will be able to identify the essential skills required for a school principal. • Students will be able to understand the administrative functions within a school.	• School administration: concept and patterns • Patterns of school administration (autocratic, democratic, laissez-faire) • Skills required for a school principal (cognitive/intellectual skills, technical skills, human/interpersonal skills) • Administrative functions in the school	Theoretical	Oral and Written
17-20	2*4 = 8	□ Students will be able to understand the nature of educational leadership.	□ Educational leadership (concept – functions – skills) □ Concept of educational leadership and its main components	Theoretical	Oral and Written

		□ Students will be able to identify the characteristics of educational leadership. □ Students will be able to determine the essential skills required for effective educational leadership. □ Students will be able to explain the main functions of an educational leader.	□ Nature of educational leadership □ Importance of educational leadership □ Characteristics of successful educational leadership □ Main functions of an educational leader □ Essential skills required for educational leadership □ Modern trends in leadership		
21-22	2*2 = 4	• Students will be able to define transformational leadership. • Students will be able to define situational leadership. • Students will be able to compare participative leadership and change leadership. • Students will be able to compare transformational leadership and situational leadership.	1. Transformational leadership 2. Situational leadership 3. Participative leadership 4. Change leadership	Theoretical	Oral and Written
23	2	□ Concept of planning and educational planning □ Educational planning and instructional planning	Concept and importance of educational planning	Theoretical	Oral and Written
24	2	Introduction to administrative processes and educational planning	Concept and importance of educational planning	Theoretical	Oral and Written
25	2	□ Objectives of educational planning	Concept and importance of educational planning	Theoretical	Oral and Written

		□ Importance of educational planning □ Types and nature of educational planning			
26	2	Stages of development and benefits of educational planning	Concept and importance of educational planning	Theoretical	Oral and Written
27	2	□ Justifications and rationale for educational planning □ Basic principles of educational planning and the meaning of a plan	Concept and importance of educational planning	Theoretical	Oral and Written
28	2	□ Foundations and fields of educational planning	Standards of educational planning	Theoretical	Oral and Written
29	2	□ Educational planning data	Standards of educational planning	Theoretical	Oral and Written
30	2	Problems and challenges related to educational planning	Stages of educational planning	Theoretical	Oral and Written

11. Course Assessment

The course grade (out of 100) is distributed based on the tasks assigned to students, such as daily preparation, quizzes, monthly exams, oral and written assessments, reports, etc.:

- Mid-term exam: 25%
- Daily activities, reports, and quizzes: 15%
- Final exam: 60%

12. Learning and Teaching Resources

Required Textbooks (methodology, if available)	• Yusuf Qahtan, *Secondary Education*. • Yusuf Yaqoub & Ali Hattab, *Secondary Education and Educational Administration*, 2015. • Report on the Educational Situation in Iraq, Ministry of Education, 2004. • Jihan Mohammed & Raed Ali, *Secondary Education and Educational Administration*.
Main References (Sources)	• Mohammed Hassanein Al-Ajmi, *Educational Administration and Planning*, 2007. • Asia Mohammed Issa, *Modern Educational and Instructional Administration*, 2018.

Electronic References / Websites	https://www.noor-book.com/%D9%83%D8%AA%D8%A7%D8%A8-%D8%A7%D8%B3%D8%A7%D8%B3%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D8%AA%D8%AE%D8%B7%D9%8A%D8%B7-%D8%A7%D9%84%D8%AA%D8%B1%D8%A8%D9%88%D9%8A-%D8%A8%D9%86%D8%A7%D8%A1-%D8%A7%D9%84%D9%85%D9%86%D8%A7%D9%87%D8%AC-pdf

Asst. Lect. Lubna Mohammed Ahmed

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name:
Curriculums and school Books
2. Course Code:
EDCO25F208
3. Semester / Year:
Annual / 2025-2026
4. Description Preparation Date:
September 1, 2025
5. Available Attendance Forms:
In-person (Physical)
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours
7. Course administrator's name (mention all, if more than one name)
Name: Hala Moayid Sheet Email: Hala.moayid@uomosul.edu.iq Name: Rahma Talal Sultan Email: rahma.sultan@uomosul.edu.iq
8. Course Objectives

Course Goals:	• **General Objective:** To familiarize students with types of curricula, their importance, foundations for adoption and design, school textbooks, and how to design them. • **Specific Objectives:** 1. Introducing students to the concept of curricula. 2. Types of curricula. 3. Foundations of curriculum design. 4. Curriculum evaluation. 5. Textbooks. 6. Textbook analysis. 7. Criteria for textbook design. 8. Electronic textbooks. 9. Practical activities and exercises.

9. Teaching and Learning Strategies	
Strategy	The course utilizes various instructional strategies including: • Lectures, Questioning (Interrogation), and Discussion. • Inductive Reasoning and Cooperative Learning. • Brainstorming and Active Learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Curriculum: concept, characteristics, importance	Curriculum	Lecture	Daily test

2	3	Foundations of curriculum: philosophical, cultural (social), psychological (developmental)	Foundations of curriculum	Lecture & Discussion	Questions & discussion
3	3	Curriculum elements: educational objectives, content	Curriculum elements	Lecture & Brainstorming	Oral test
4	3	Practical activity: General and behavioral objectives in teaching mathematics	Practical activity	Cooperative & Active learning	Group reports
5	3	Types of curricula: subject-centered, activity-based, core curriculum	Types of curricula	Lecture & Induction	Classroom interaction
6	—	Cooperative practical activity: Designing a mathematics unit	Cooperative practical activity	Cooperative learning	Reports
7	3	Written Exam I			
8	3	Curriculum evaluation: concept, objectives, criteria, methods, steps	Curriculum evaluation	Lecture & Brainstorming	Individual assignments
9	3	Individual practical activity to evaluate the first intermediate grade curricula	practical activity	Active learning	Individual assignments
10	3	Individual practical activity to evaluate the second intermediate grade curricula	practical activity	Active learning	Individual assignments
11	3	Individual practical activity to evaluate the third intermediate grade curricula	practical activity	Active learning	Individual assignments
12	3	Individual practical activity to evaluate the fourth intermediate grade curricula	practical activity	Active learning	Individual assignments
13	3	Individual practical activity to evaluate the fifth intermediate grade curricula	practical activity	Active learning	Individual assignments
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
14	3	Individual practical activity to evaluate the	practical activity	Active learning	Individual assignments

		sixth intermediate grade curricula			
15	3	Curriculum development: concept, motives, principles, models	Curriculum development	Lecture & Questioning	Daily test
16	3	Group activities: Developing mathematics curricula for intermediate levels	Group activities	Active learning	Individual assignments
17	3	Group activities: Developing mathematics curricula for preparatory levels	Group activities	Active learning	Individual assignments
18	3	International experiences in curriculum development	Presentation of experiences	Cooperative learning & Lecture	Joint reports
19	3	Comparison between international and local curricula	Comparison between some international curricula and our local curricula	Cooperative learning	Joint reports
20	3	Textbook: concept, importance, printed textbook, evaluation & development	Textbook	Lecture & Discussion	Daily tests
21	3	Practical activity: Analysis of first intermediate grade textbooks	Practical activity	Active learning	Individual assignments
22	3	Practical activity: Analysis of second intermediate grade textbooks	Practical activity	Active learning	Individual assignments
23	3	Practical activity: Analysis of first intermediate grade textbooks	Practical activity	Active learning	Individual assignments
24	3	Practical activity: Analysis of first intermediate grade textbooks	Practical activity	Active learning	Individual assignments
25	3	Practical activity: Analysis of first intermediate grade textbooks	Practical activity	Active learning	Individual assignments

26	3	Practical activity: Analysis of first intermediate grade textbooks	Practical activity	Active learning	Individual assignments
27	3	E-book: importance, advantages, disadvantages, development	E-book: importance	Lecture & Discussion	Classroom interaction
28	3	Practical activities on electronic textbooks	Practical activities	Lecture & Discussion	Classroom interaction
29	3	Practical activities on electronic textbooks	Practical activities	Lecture & Discussion	Classroom interaction
30	3	Written Exam II			

11. Course Evaluation and Grade Distribution

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

- **Mid-year exam:** 25%
- **Coursework:** 15%, including:
  - Oral and written quizzes: 5%
  - Assignments: 5%
  - Preparation and participation: 5%
- **Final exam:** 60%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	• Alwakeel, Helmy and Almefty, Mohammed (2011), Foundations of Curriculum Construction and Its Organization, Amman: Dar Al-Masirah Publishing House. • Marai, Tawfeeq and Alhela, Mohammed (2011), Modern Educational Curricula. Amman: Dar Al-Masirah for Publishing and Distribution.
Electronic References, Websites	• https://2u.pw/Yad4a

13. Curriculum Update Percentage

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Hala Moayid Sheet

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course description form

1. Course name:		
Teaching Thinking		
2. Course code		
EDCO26F209		
3. Semester/year		
2025-2026		
4. Preparation date of this description		
1/9/2025		
5. Available forms of attendance		
"Instruction and submission of assigned tasks and homework will be conducted both face-to-face in classroom and electronically through the e-learning (e-class) platform."		
6. Number of hours (total)/number of credits (total)		
30 Credit Hours (Theoretical)		
7. Name of the course tutors:		
Assoc. Prof. Yahya Ismail Ibrahim Dr. Ibrahim Abdulaghany Ibrahim	Email:	yahyaismail@uomosul.edu.iq ibrahim.albaram@uomosul.edu.iq
8. Course objectives		
Objectives of the study subject	• General Objective: To introduce students to thinking, its types, and teaching strategies. Specific Objectives: 1. To introduce students to the concept of thinking. 2. Characteristics of thinking. 3. Levels and patterns of thinking. 4. Tools of thinking and factors influencing it – obstacles to it. 5. Thinking skills with some applications. 6. Approaches to teaching thinking. 7. Types of thinking. 8. Practical exercises, enrichment activities, and specialized thinking scenarios.	
9. Teaching and learning strategies		
The strategy	Lecture – Questioning – Discussion – Induction – Cooperative Learning – Brainstorming – Active Learning – Concept Maps – Discovery	
10. Course structure		

Week	Hours	Required learning outcomes	Topic name	Learning method	Assessment method
1	1	Students learned about the concept of thinking.	The concept of thinking	Lecture	Classroom Questions
2	1	Students learned about the characteristics and importance of thinking.	Characteristics of thinking	Lecture - Discussion	Questioning and Discussion
3	1	Stages of thinking development.	Development of thinking	Lecture - Brainstorming	Oral Exam

4	1	Students learned about levels of thinking.	Levels of thinking	Lecture - Discussion	Questioning and Discussion
5	1	Tools of thinking and the factors that influence it – its obstacles.	Tools of thinking	Lecture - Brainstorming	Oral Exam
6	1	Students learned about thinking skills;	Thinking Skills	Lecture - Discussion	Questions and discussion
7	1	practical applications and scientific scenarios related to thinking skills	Thinking Skills	Collaborative Learning - Active Learning	Group reports
8	1	types of thinking	Scientific Thinking	Lecture - Diagrams	Questions and discussion
9	1	activities and scenarios from the discipline related to scientific thinking	Scientific Thinking	Collaborative Learning - Active Learning	Group reports
10	1	types of thinking.	Creative Thinking	Lecture - Discussion	Questions and discussion
11	1	Activities and scenarios from the specialization on creative thinking	Creative thinking	Collaborative Learning - Active Learning	Group reports
12	1	Problem-solving and creative thinking	Creative thinking	Lecture - Discussion	Questions and discussions
13	1	Types of thinking	Logical thinking	Lecture - Discussion	Questions and discussions
14	1	Activities and scenarios from the specialization on logical thinking	Logical thinking	Collaborative Learning - Active Learning	Group reports
15	1	Test I	Test I	Collaborative Learning - Active Learning	Group reports
16	1	Types of Thinking	Analytical thinking	Lecture – Discussion	Questions and discussion
17	1	Activities and Perspectives on Abstract Thinking	Analytical thinking	Collaborative Learning – Active Learning	Group reports
18	1	Types of Thinking	Critical thinking	Brainstorming	Questions and discussion

19	1	Activities and Perspectives on Visual Thinking	Critical thinking	Brainstorming	Group reports
20	1	Types of Thinking	Visual thinking	Lecture – Discussion	Questions and discussion
21	1	Activities and situations related to mathematical thinking	Visual thinking	Collaborative Learning - Active Learning	Group reports
22	1	Types of thinking	Scientific thinking	Lecture - Discussion	Questions and discussions
23	1	Activities and situations related to critical thinking	Scientific thinking	Collaborative Learning - Active Learning	Group reports
24	1	Students learn about approaches to teaching thinking skills	Trends in teaching thinking skills	Lecture - Discussion	Questions and discussions
25	1	Students learn about approaches to teaching thinking skills	Integrating thinking skills into the curriculum	Lecture - Discussion	Questions and discussions
26	1	Students learned about the trends in teaching thinking skills.	Examples and practical activities for integrating thinking skills	Collaborative learning - Active learning	Group reports
27	1	Students learned about the trends in teaching thinking skills.	Teaching thinking through specialized programs	Lecture - Discussion	Questions and discussions
28	1	Students learned about the trends in teaching thinking skills.	Six Thinking Hats Program	Lecture - Questioning	Questions and discussions
29	1	Students learned about the trends in teaching thinking skills.	SCAMPER Program	Lecture - Discussion	Questions and discussions
30	1	Students learned about the trends in teaching thinking skills.	Using intelligence in thinking	Lecture - Discussion	Questions and discussions

11. Course assessment	
Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports. • Mid year exam 25% • 15% includes (theoretical and practical tests 5%, assignments 5%, reports 5% during the year) • 60% Final test	
12. References	
• BOOKS	Ibrahim bin Ahmed Al-Harthi. Teaching Thinking.
• Main resources	Teaching thinking skills, prepared by subject teachers

• Recommended resources	According to the lectures, if available
• Electronics and website resource	Sources according to the Class Room

Dr. Ibrahim Abdulaghany Ibrahim

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course name:					
Arabic Language					
2. Course code					
EDCO26F210					
3. Semester/year					
2025-2026					
4. Preparation date of this description					
1/9/2025					
5. Available forms of attendance					
6. Number of hours (total)/number of credits (total)					
30 theoretical hours					
7. Name of the course tutors					
Name: Dr. Ruqayah Hamid Email: ruqayah.h.a@uomsul.edu.iq					
8. Course objectives					
Maintain the talking and the writing style for students in native Arabic Language					
9. Teaching and learning strategies					
Strategy	Encourage students to interactive with each other and with the lecturer to maintain their reading/writing style.				
10. Course structure					
Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
According to the point 11 above	Analyze the speech	Sermon of Hijat Al-Wadaa' of prophet Mohammed peace upon him		**2**	**1**
According to the point 11 above	Interpret the meanings of the this sermon	Sermon content		**2**	**2**
According to the point 11 above	Interpret the meanings of the this sermon	Eloquence in the sermon		**2**	**3**
According to the point 11 above	Examples to declare the sermon's meanings	Grammatical issues in the sermon		2	4
According to the point 11 above	Spelling applications	Grammatical forms in the sermon		2	5
According to the point 11 above	Historical life examples	Helping the student to know the inflectional signs of each grammatical form and		2	6

		to differentiate between them and their attachments			
According to the point 11 above	Current Life examples	Name and its signs		2	7
According to the point 11 above	Examples from the Holy Quran	Nominal sentence components		2	8
According to the point 11 above	Examples from the Holy Quran	Nominal sentence rules		2	9
According to the point 11 above	Current Life examples	Indefinite beginner		2	10
According to the point 11 above	Current Life examples	The predicate		2	11
According to the point 11 above	Poems examples	The predicate rules		2	12
According to the point 11 above	Poems examples	The predicate forms		2	13
According to the point 11 above	Examples from the Holy Quran	The predicate and its sections		2	14
According to the point 11 above	Examples from the universe Manifestations	Copier verbs and their similar		2	15
Mid-Year Examinations					
According to the point 11 above	Examples of poems	Conjugations of WAS (kān) and its sisters		2	16
According to the point 11 above	Examples from in class	Forms of the name WAS (Kan) and its sisters		2	17
According to the point 11 above	Examples from nowadays	Forms of the predicate		2	18
According to the point 11 above	Examples from history	(Enna) and its sisters		2	19
According to the point 11 above	Examples from domestic life	Names of (Enna)		2	20

According to the point 11 above	Examples from Holy Quran	The predicate of (Enna) and its sisters		2	21
According to the point 11 above	Examples from Holy Quran	The predicate (sentence)		2	22
According to the point 11 above	Examples from scenes of universe	The subject and its forms		2	23
According to the point 11 above	Examples from poems	The subject complement and its forms		2	24
According to the point 11 above	Examples from nowadays	Verbs of (based on)		2	25
According to the point 11 above	Examples from nowadays	Verbs of (Meanings)		2	26
According to the point 11 above	Examples from history	The Object and its forms		2	27
According to the point 11 above	Examples from domestic life	The State (Al-Hal)		2	28
According to the point 11 above	Examples from Holy Quran	The Discrimination (Al-Tamyez)		2	29
According to the point 11 above	Examples from Holy Quran	The Exemption		2	30

11. Course assessment

Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports.

- Mid year exam 25%
- 15% includes (theoretical and practical tests 5%, assignments 5%, reports 5% during the year)
- 60% Final test

12. Resources

BOOKS	
Main resources	
Recommended resources	
Electronics and website resources	

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب

Asst.Prof.Dr. Mohammed Hazim Alkawaz

محمد حازم الكواز
رئيس قسم علوم الحاسوب

Dr. Ruqayah Hamid

Course Description Form

1. Course Name:	
English Langu	
2. Course Code:	
EDCO25F211	
3. Semester / Year:	
Annual System 2025-2026	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Actual, theoretical and electronic to display required tasks and duties	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours the	
7. Course administrator's name (mention all, if more than one name)	
Name: Nagham Mohuyaldeen AL-Oubaidy Email: nagham.mohuyaldeen@oumosul.edu.iq	
8. Course Objectives	
Course Objectives	Communicating students with the English language and developing their linguistic ability with regard to terminology. Introducing students to correct reading and writing in English. Introducing students to the correct pronunciation of English words • Knowing and understanding the basics of the English language • Explaining the basic processes of the subject. • Identifying the most important terms in the computer subject in the English language
Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-4	4	Personal Information	Chapter 1	According to point 9 above and as neede	Daily Exams / Assignments / Interaction / Reports

5-9	5	Family and Friend	Chapter 2	According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
10-14	5	Present and Past simple	Chapter 3	According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
15-19	5	Comparative and Superlative	Chapter 4	According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
20-25	6	Sounds in English	Chapter 5	According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports
26-30	5	Patterns the sentences	Chapter 6	According to point 9 above and as needed	Daily Exams / Assignments / Interaction / Reports

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

- Mid-year 25%
- Endeavor 15% includes (theoretical tests 5%, homework 5%, attendance 5%
- Final 60%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	"New Headway, pre-intermediate Student Book "Johan and Liz Soars
Main references (sources)	Practical English Usage
Recommended books and references (scientific journals, reports...)	Al-MAWRID – MODREN ARABIC/ENGLISH DICTIONARY
Electronic References, Websites	https://arabic.britannicaenglish.com/
Curriculum update rate	

awaz

Name and signature

of the course owner

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب

Course Description Form

1. Course Name and Stage of Study	
Crimes of the Baath Party regime - the second stage	
2. Course Code	
EDCO25F212	
3. Semester / Year	
Academic Year 2025-2026	
4. The history of preparation of this description	
1/9/2025	
5. Available Attendance Forms	
My presence in the classroom	
6. Number of credit hours (total) / number of units (total)	
An hour a week	
7. Name of the course administrator (if more than one name) and scientific title	
Name: Eng. Omar Duraid Thanoon	Email: omer.thnon@uomosul.edu.iq
8. Course Objectives	
Course Objectives	1. Identify and learn about a group of crimes committed by the Baath Party 2. Identify the psychological and social crimes committed by the Baath Party regime 3. Revealing what the Baath regime has done in carrying out the largest operation of scientific and cultural impoverishment of the oldest people of the peoples 4. Definition of international crimes and crimes of genocide 5. Exposure of environmental crimes committed by the Baath regime 6. Mass grave crimes committed by the Baath Party regime • Knowing the position of the Baath regime on religion
9. Learning and learning strategies	
Using modern means in education in line with the requirements of the course of	Lectures via Class Room and Meet program • The following strategies are used depending on the content of the lecture:

electronic classes and lectures, as well as enriching students' information through field visits to historical sites	•Discussion strategy. •Think strategy, discuss, share •Flexible groups strate

10. Course Structure
Chapter One

The week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**1**	Cognitive Objectives Course Skills Objectives	The concept of crimes	Lectures given to students supported by multiple means of illustration Dialogue and interaction Brainstorming	Oral exams in each lecture
2	**1**	=	Crime Sections	=	Oral exams in each lecture
3	**1**	=	Definition of crime language and terminology	=	Oral exams in each lecture
4	**1**	=	Crimes of the Baath regime according to the documentation of the Criminal Court Law **العليا عام 2005**	=	Oral exams in each lecture
5	**1**	=	Types of crimes	=	Written exams every month
6	**1**	=	Decisions of the Supreme Criminal Court	=	Oral exams in each lecture
7	**1**	=	Psychological and social crimes and their effects	=	Oral exams in each lecture

8	**1**	=	The most prominent violations of the Baathist regime in Iraq	=	Oral exams in each lecture
9	**1**	=	Social crimes	=	Oral exams in each lecture
10	**1**	=	Mechanisms of psychological crimes	=	Written exams in each lecture
11	**1**	=	Effects of mental crimes	=	Oral exams in each lecture
12	**1**	=	Militarization of society	=	Oral exams in each lecture
13	**1**	=	The position of the Baathist regime on religion	=	Oral exams in each lecture
14	**1**	=	Violations of Iraqi laws	=	Oral exams in each lecture
15	**1**	=	End of Semester Exam	=	Written exams every month

Chapter Two

Week	Week	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
16	**1**	Cognitive Objectives Course Skills Objectives	Photos of human rights violations	Lectures given to students supported by multiple means of illustration Dialogue and interaction Brainstorming	Oral exams in each lecture
17	**1**	=	Photos of human rights violations	=	Oral exams in each lecture
18	**1**	=	Crimes of authority	=	Oral exams in each lecture

19	**1**	=	Crimes of authority	=	Oral exams in each lecture
20	**1**	=	Places of Prisons and Detention of the Baath Regime	=	Written exams every month
21	**1**	=	Places of Prisons and Detention of the Baath Regime	=	Oral exams in each lecture
22	**1**	=	Places of Prisons and Detention of the Baath Regime	=	Oral exams in each lecture
23	**1**	=	Environmental crimes of the Baath regime	=	Oral exams in each lecture
24	**1**	=	Environmental crimes of the Baath regime	=	Oral exams in each lecture
25	**1**	=	Mass grave crimes	=	Written exams in each lecture
26	**1**	=	Mass grave crimes	=	Oral exams in each lecture
27	**1**	=	Mass grave crimes	=	Oral exams in each lecture
28	**1**	=	exam	=	Oral exams in each lecture
29	**1**	=	Exam for postponed.	=	Oral exams in each lecture
30	**1**	=	Distribution of Bids	=	Written exams every month

11. Course Evaluation and Grade Divisions
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly, written exams, reports... etc Chapter One Daily preparation 5 degrees Oral exam 5 marks Semester exam 10 marks

Chapter Two Daily preparation 5 degrees Oral exam 5 marks Semester exam 10 marks 40° Pursuit Final Exam 60 marks	
12. Learning and Teaching Resources	
The book of crimes of the Baath regime issued and approved by the Ministry of Higher Education and Scientific Research	Required textbooks (methodology, if any)
	Key references (sources)
	Recommended books and references (scientific journals, reports...)
	Electronic References, Websites
	Curriculum update rate

Eng. . Omar Duraid Thanoon

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name and Stage:	
Artificial Intelligence	
2. Course Code:	
301EDCO23F	
3. Semester / Year: 2025-2026	
4. Description Preparation Date: 1/9/2025	
5. Available Attendance Forms:	
In-person (theoretical + practical) and electronic to display the required tasks and duties	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 hours of theory + 60 hours of practice (6 teaching units)	
7. Course administrator's name (mention all, if more than one name) and Scientific title	
Name:Dr. Hanaa F Mahmmod Dr. Mohammed Hazim Alkaw Ehab Yassin	Email: dr.hanah@uomosul.edu.iq mohammed.ameen@uomosul.edu.iq ehab.yassin@uomosul.edu.iq
8. Course Objectives	
Subject Objectives	• Introduction to the term artificial intelligence and its various applications for solving many problems. • Understanding, designing, and developir intelligent and expert programs and systems • Understanding methods of knowledge representation, reasoning, and searching for facts and goals. •Knowing the characteristics of expert systems, their architecture, and applications and the difference between them and intelligent systems. • Understanding machine learning and artificial neural networks as a model for machine learning and training students on how to create some intelligent projects, how to use them, how to benefit fr them in practical life, and how to retrieve them. • Learning the Python language and it use in artificial intelligence applications.
9. Teaching and Learning Strategies	
Strategy	• The following strategies are used depending on the content of the lecture: • Discussion strategy. •Discovery learning strategy.

	• Problem-solving strategy. • Advanced organizations strategy. • Think, discuss, share strategy. • Mind maps strategy. • Flexible groups strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-5	20	Understanding the general concept of artificial intelligence and the basic principles of artificial intelligence and the Python language	Introduction to Artificial Intelligence	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments/ Interaction / Reports / Programming
6-7	8	Learn about the field of research and search algorithms	Search Algorith	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments/ Interaction / Reports / Programming
8-11	16	Understanding and implementing systematic and heuristic search methods	Systematic and Heuristic search	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments Interaction / Reports / Programming
12-14	12	Understanding the algorithms of some games that use artificial intelligence,	8- Puzzl	According to point 9 above depending on the nature of the material in each lecture, in	Quizzes / Assignments/ Interaction / Reports / Programming

		such as 8-Puzzle		addition to practical application in Python.	
15-17	12	Learn how expert systems work and how they differ from intelligent systems, as well as the components of expert systems and methods of inference.	Expert Systems	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments/ Interaction/Reports Programming
18	4	Introduction to Sustainable Development	Introduction to Sustainable Development	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments/ Interaction/Reports Programming
19	4	Uses of artificial intelligence in sustainable development	Using AI within Sustainable Development	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments /Interaction / Reports / Programming
20-21	8	Learning and training on how to represent knowledge	Knowledge Representation	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments Interaction / Reports / Programming

22	4	Building an expert system	Built an Expert System	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments Interaction/ Reports / Programming
23	4	Clarifying the concept of deep learning	Concept of Deep Learning	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments /Interaction / Reports / Programming
24-25	8	Understanding machine learning, its benefits, and its uses	Machine Learning	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments /Interaction / Reports / Programming
26-27	8	Understanding the principles of artificial neural networks	Artificial neural network	According to point 9 above depending on the nature of the material in each lecture, in addition to practical application in Python.	Quizzes / Assignments /Interaction / Reports / Programming
28-30	12	Understanding and implementing training and system building using	Architecture and training Network Hebb, perception, and deep	According to point 9 above depending on the nature of the material in each lecture, in	Quizzes / Assignments /Interaction / Reports / Programming

		artificial neural networks	learning network architecture	addition to practical application in Python.	

11. Course Evaluation and Marks	
Grades are calculated on a scale of 100 based on the tasks assigned to the student, such as daily preparation, daily exams, oral exams, monthly exams, written exams, reports, etc. • Mid-year 20% • Effort 30% Includes (theoretical and practical tests 10%, assignments 10%, reports 10%) • Final 50%	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	• Elin Rich, "Artificial Intelligence", 1991 • George F. Luger, "Artificial Intelligence Structures and Strategies for Complex Problem Solving", Pearson Education Asia (Singapore), 6/E, 2009 § Amit Konar, "Artificial Intelligence and Soft Computing, Behavior and Cognitive Modeling of the Human Brain", CRC Press, 2000
Main references (sources)	Russell, S., Norvig, P., & Intelligence, A. (1995). A modern approach. Artificial Intelligence. Prentice-Hall, Englewood Cliffs , 25, 27 -2
Recommended books and references (scientific journals, reports...)	Nilsson, N. J. (2014). Principles of artificial intelliger Morgan Kaufmann
Electronic References, Websites	

Dr. Hanaa F Mahmmod

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب

Asst.Prof.Dr. Mohammed Hazim Alkawaz

محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course Description Form

Course Name: Compilers
Course Code: EDCO26F302
Semester / Year: 2026-2025
Description Preparation Date: 2025/9/1
Available Attendance Forms: : Laboratory , Classroom
Number of Credit Hours (Total) / Number of Units (Total) **Practical + 2 Theoretical / Total number of hours (60 Theoretical + 60 Practical)**
19. Course administrator's name (mention all, if more than one name)
Name: Meaad Mohammed Salih Email: meaad_mahammed@uomosul.edu.iq Name: Nagham Tharwat Saeed Email: nagham.th@uomosul.edu.iq Name: Kanar Mohammed Sami Mustafa Email lamarsafwan111@uomosul.edu.iq

20. Course Objectives	
Course Objectives	1.This course aims to enable students to understand the stages that any program written in any programming language goes through, from the moment the execution button is pressed until the results appear on the output screen. 2.Enable students to identify the six stages covered in this course and the algorithms used in each stage. 3. Enable students to recognize the possible errors a programmer may make and attempt to correct them using one of the debugging techniques, as well as to try to implement each stage programmatically using the C++ language.

9.Teaching and Learning strategies	
Strategy	Providing printed lectures and up-to-date sources that include solved and unsolved examples and questions for students to attempt, identify errors (when the tasks involve error detection), in addition to turning the class into a discussion forum by allowing students to ask questions and inquiries and discuss solutions with other students.

Course Structure

Week	Hours	Intended Learning Outcomes	Unit / Topic Name	Learning Method	Assessment Method
1	2	Introduction to compilers and understanding program	Programming Languages and Classification;	Providing lectures rich in diverse	According to point 10 above and as needed.

		analysis, debugging, and translation to machine language.	Introduction to Compilers	examples and open discussion.	
2	2	Explain compiler construction tools and phases.	JIT Compilation; Compiler Construction Tools; Phases of the Compiler	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
3	2	Understand all compiler phases and one-pass vs multi-pass compilers.	Compiler Phase Examples; One-Pass and Multi-Pass Compilers	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
4	2	Learn how to construct symbol tables and store variable information.	Error Handling; Symbol Tables Introduction and Attributes	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
5	2	Explain types of symbol tables with examples.	Ordered, Tree-Structured, and Hash Symbol Tables	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
6	2	Identify the lexical analysis phase.	Contribution of Compilers to Sustainable Development; Lexical Analysis	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
7	2	Learn token input, specification, and representation.	Input Buffering; Token Specification and Recognition	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
8	—	Exam	Exam	—	—
9	2	Understand regular expressions and automata representation.	Finite Automata; Lexical Analyzer Generator Design	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
10	2	Identify syntax analysis stage.	Syntax Analyzer; Role of Parser	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
11	2	Explain CFGs, parse trees, and derivations.	Context-Free Grammar; Parse Trees	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
12	2	Study top-down parsing techniques and problems.	Top-Down Parsing	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.

13	2	Learn predictive and recursive descent parsing.	LL Predictive Parsing; Recursive Descent Parser	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
14	2	Compute FIRST and FOLLOW functions.	FIRST and FOLLOW Sets	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
15	—	Exam	Exam	—	—
16	2	Construct predictive parsing tables.	Predictive Parsing Tables	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
17	2	Identify LL(1) grammars.	LL(1) Grammars	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
18	2	Study error recovery techniques.	Error Recovery; LL(1) Parsing Algorithm	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
19	2	Learn bottom-up parsing concepts.	Bottom-Up Parsing Techniques	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
20	2	Study other bottom-up parsing algorithms.	Shift-Reduce; Operator Precedence Parsing	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
21	2	Understand SLR(1) parsing.	SLR(1) Parsing	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
22	—	Exam	Exam	—	—
23	2	Study LR(0) and SLR(1) with examples.	LR(0) and SLR(1) Parsers	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
24	2	Understand CLR parsing.	Canonical LR Parser	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
25	2	Study LALR parsing.	LALR Parser	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.

26	2	Compare CLR and LALR parsers with examples.	Examples of CLR and LALR	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
27	2	Explain LR parsing mechanisms.	LR Parsing Algorithm	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
28	2	Introduce syntax-directed translation and semantic analysis.	Syntax-Directed Translation; Semantic Analysis	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
29	2	Explain intermediate code generation.	Intermediate Code Generation	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.
30	2	Optimize code and generate final machine program.	Code Optimization and Code Generation	Providing lectures rich in diverse examples and open discussion.	According to point 10 above and as needed.

Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, and written exams, reports, etc.
Short quizzes (semi-weekly) with unexpected questions related to the material are worth 10 points.
Computer-based and written lab tests to enable students to solve problems without a computer are worth 10 points.
Monthly exams are worth 10 points.
Mid-year exam is worth 20 points.
End-of-year exam is worth 50 points.

Learning and Teaching Resources

Required textbooks (curricular books, if any)	-
Main references (sources)	1. **Compiler Design,**A.A. Puntambeka rFirst Edition 2009 2. **Principle of Compiler Design**, Alfred V. Aho , Jeffery D. Ulman. 3. **Basics of Compiler Design** , Torben Mogenes 2000-2008 . 4. **Compiler Construction** – Dhamdere (Mc-Millan).
Recommended books and references (scientific journals, reports...)	-
Electronic References, Websites	-

Dr. Meaad Mohammed Salih

Asst.Prof.Dr. Mohammed Hazim Alkawaz

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب

Course Description Form

1. Course Name and Stage:	
Computer Graphics	
2. Course Code:	
EDCO26F303	
3. Semester / Year:	
2025-2026	
4. Description Preparation Date:	
1-9-2025	
5. Available Attendance Forms:	
Attendance Lectures/ Electronic Lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2/2	
7. Course administrator's name (mention all, if more than one name) and Scientific title	
Name: Dr. Israa Mohammed Khudher Email: israa.alhamdani@uomosul . edu.iq	
8. Course Objectives	
Subject Objectives	• Giving undergraduate students in Computer graphics
9. Teaching and Learning Strategies	
Strategy	• Teaching students how to use computers for drawing and sketching • Converting mathematical formulas into graphs and diagrams • Giving students an introduction to digital image processing

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Th. +2 Prac	Understanding Computer Graphic	Introduction computer graphic	(Traditional-Electronic) Lecture	Quick Questions
2	2Th. +2 P	Understanding Co Screen and I Screen	Color Screen and Flat Screen	(Traditional-Electronic) Lecture	Homework
3	2Th. +2 P	**Learn 3D Types**	**3D screen Types**	(Traditional-Electronic) Lecture	Homework
4	2 Th. Prac	Understanding the Color System and image types	Color System and image types	(Traditional-Electronic) Lecture	Homework
5	2 2Th. Prac	Understanding Graphics In Devices	Graphics input devices	(Traditional-Electronic) Lecture	Homework – Qu Quizzes

6	2Th. +2 P	Area Filling	Area Filling	(Traditional-Electronic) Lecture	Homework
7	2 Th. Prac	Understanding L Drawing Algorithr	Line Drawing Algorithm	(Traditional-Electronic) Lecture	Quick Questions
8	2 2Th. Prac	Understanding DD	Digital Different Analyzer (DDA	(Traditional-Electronic) Lecture	Homework
9	2Th. +2 P	Understanding Berzenham L Drawing Algorithr	Berzenham Lin Drawing Algorith	(Traditional-Electronic) Lecture	Homework
10	2 Th. Prac	Midpoint Circle drawing	Midpoint Circle drawing	(Traditional-Electronic) Lecture	Homework
11	2 2Th. Prac	Midpoint ellipse drawing	Midpoint ellipse drawing	(Traditional-Electronic) Lecture	Homework
12	2Th. +2 P	Trigonometric L and Angles	Trigonometric Law and Angles	(Traditional-Electronic) Lecture	Homework
13	2 Th. Prac	Trigonometric L and Angles	Trigonometric Law and Angles	(Traditional-Electronic) Lecture	Homework
14	2 2Th. Prac	2D Trans.	2D Transformations	(Traditional-Electronic) Lecture	Homework – Quick Quizzes
15	2Th. +2 P	2D Trans.	2D Transformati	(Traditional-Electronic) Lecture	Homework
16	2Th. +2 P	2D Trans.	2D Transformati	(Traditional-Electronic) Lecture	Quick question
17	2 Th. Prac	2D Trans. Exercis	2D Transformat Exercise	(Traditional-Electronic) Lecture	Quick question
18	2 2Th. Prac	Homogenies Matr	Homogenies Matri	(Traditional-Electronic) Lecture	Quick question
19	2Th. +2 P	Windowing Clipping	Windowing Clipping	(Traditional-Electronic) Lecture	Quick questions
20	2 Th. Prac	Wind. & c Exercise	Wind. & c Exercise	(Traditional-Electronic) Lecture	Homework – Quick Quizzes

21	2 2Th. Prac	3D Transformatio	3D Transformatic	(Traditional-Electronic) Lecture	Homework – Quick Quizzes
22	2Th. +2 P	Animation	Animation	(Traditional-Electronic) Lecture	Homework
23	2 Th. Prac	Understanding Digital Im Processing	Introduction Digital Im Processing	(Traditional-Electronic) Lecture	Homework – Quick Quizzes
24	2 2Th. Prac	Understanding Co Space	Color Space	(Traditional-Electronic) Lecture	Homework
25	2Th. +2 P	Statistics and Image Processing	Statistics and Image Processing	(Traditional-Electronic) Lecture	Homework
26	2 Th. Prac	Image Enhanceme	Image Enhancem	(Traditional-Electronic) Lecture	Homework – Quick Quizzes
27	2 2Th. Prac	Noise and Its Types	Noise and Its Types	(Traditional-Electronic) Lecture	Quick Quizzes
28	2Th. +2 P	Filters and Smoothing	Filters Smoothing	(Traditional-Electronic) Lecture	Quick questions
29	2 Th. Prac	Filters and E Detection	Filters and E Detection	(Traditional-Electronic) Lecture	Quick Quizzes
30	2 2Th. Prac	Binary Image	Binary Image	(Traditional-Electronic) Lecture	project

11. Course Evaluation and Marks

Distributing the score out of 100 according to the tasks assigned to the student: First semester 20, Activities 10, End-of-semester exam 70.

12. Learning and Teaching Resources

Required textbooks (curricu books, if any)	Computer diagrams using the C++ programming language + lab manual computer graphics
Main references (sources)	Theoretical lectures, prepared as 30 lectures, were uploaded to online classroom in parts of 10 lectures per period.
Recommended books and references (scientific journals, reports...)	Websites related to the C++ programming language with diagrams Using computer graphics tools with the C++ programming language
Electronic References, Websit	

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Dr. Israa Mohammed Kh.

Course Description Form

1. Course Name and Stage:	
Visual Programming	
2. Course Code:	
EDCO25F304	
3. Semester / Year:	
Year	
4. Description Preparation Date:	
9-2025	
5. Available Attendance Forms:	
On-campus lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4 hours per week (2 theoretical + 2 practical) / 6 units	
7. Course administrator's name (mention all, if more than one name) and Scientific title	
Name: Shaymaa Ahmed Razoqi Manar Abdulkareem Zedan Senan Adel Mawlood	Email: shymaa.raazoqi@uomosul.edu.iq manar_alabaji@uomosul.edu.iq senan.alhasan@uomosul.edu.iq
8. Course Objectives	
Subject Objectives	• Identify visual programming methods and their differences from traditional programming. This includes operating Visual Studio, describing the elements included in the design environment, how to design the user interface (GUI), the difference between a "Project" and a "Program," and introducing the student to the philosophy of programming using Visual Studio • Study the fundamental concepts of programming under the umbrella of Multiple Windows (Multi-Forms) • Explain the steps for project design and planning. • Identify events and procedures and how to write programming commands. • Handle text files, image files, and user messages. • Study the communication language between Visual Studio programs and SQL Server database applications. • Train students on how to create, save, and retrieve projects
9. Teaching and Learning Strategies	
Strategy	The following strategies are used depending on the lecture content : • Discussion Strategy. • Discovery Learning Strategy. • Problem-Solving Strategy. • Advanced Organizational Strategy (Advance Organizers).

	• Think, Discuss, Share Strategy. • Mind Mapping Strategy. • Flexible Grouping Strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	4 Theory, 4 Practical	Introduction and definition of visual programming fundamentals & characteristics distinguishing it from other programming languages. / How visual programming contributes to sustainable development. / Visual Studio 2022 Installation.	Visual programming vs. traditional programming / The contribution of VP supporting sustainable development / Visual Studio 2022 Installation	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
3-4	4 Theory, 4 Practical	Understanding how to handle visual programming tools. The difference between Visual Basic 6.0 and Visual Basic 2022 regarding tool usage.	Visual Studio 2022 and visual basic tools, properties and objects	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
5-6	4 Theory, 4 Practical	Introduction to the programming language. Input and Output using various tools.	Visual Basic Data Type / Massage Box	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
7-8	4 Theory, 4 Practical	How to handle and build functions, loops, their parts, and operation.	Functions and Looping	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
9-13	10 Theory, 10 Practical	Dealing with databases. How to connect Visual Basic 2022 to SQL Server.	VP-SQL server Data connection tools/	According to Point 9 above (as needed)	Daily quizzes / Homework / Interactio

			Operation on database		n / Reports
14-15	4 Theory, 4 Practical	Operations on text files.	Text File operations {read, write, copy}	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
16-17	4 Theory, 4 Practical	Dealing with condition tools.	CheckBox, RadioButton	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
18-19	4 Theory, 4 Practical	Dealing with multiple list tools.	ComboBox, ListBox	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
20-21	4 Theory, 4 Practical	Creating subroutines and software packages (modules) for the project.	Create Subs and Modules	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
22-23	4 Theory, 4 Practical	How to handle Menus and Resources.	Menus and Resources	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
24-25	4 Theory, 4 Practical	Multi-windows and methods of transferring variable values between them.	MultiForms and Form Types	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports

26-28	6 Theory, 6 Practical	Designing and building a multi-window project and Web Application.	Visual Project Design / Web Forms	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports
29-30	4 Theory, 4 Practical	Password window. Creating an executable file for the project.	Password Form design / executable project	According to Point 9 above (as needed)	Daily quizzes / Homework / Interaction / Reports

11. Course Evaluation and Marks	
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	Distribution of the grade out of 100 is based on tasks assigned to the student, daily preparation, written exams, and reports as: Mid-year: 20% Coursework: 30%. This includes: (Theoretical tests: 10%, Practical tests: 10%, Homework and Reports: 10%) Final: 50%

12. Learning and Teaching Resources	
Required textbooks :	Visual Programming
13. Main references (sources)	• Visual Basic In Easy Steps, 4th Edition, Mike McGrath, 2016 • An Introduction to Programming Using Visual Basic • Visual Studio 2022 In-Depth Mastering Visual Studio 2022
Recommended books and referen (scientific journals, reports...)	Kuhail, M. A., Farooq, S., Hammad, R., & Bahja, M. (2021). Characterizing visual programming approaches for end-user developers: A systematic review.
Electronic References, Websites	• https://visualstudio.microsoft.com • Getting Started with Visual Studio 2022: • https://static.packt-cdn.com/downloads/9781801810548_ColorImages.pdf

Dr. Shaymaa A. Razoqi

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course description form

1. Course name:	
Computer architecture	
2. Course code	
EDCO26F305	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
In person	
6. Number of hours (total)/number of credits (total)	
60 hours/4 credits	
7. Name of the course tutors	
Name: Dr. Yahya Qasim	Email: yahyak@uomosul.edu.iq
8. Course objectives	
• Introduce the basic technologies used in modern computer architectures, which were derived from a number of established methodological sources for the purpose of consolidating the foundations and rules of the course methodology. • Introduce the basic concepts and principles of computer information modeling systems.	Objectives of the study subject
9. Teaching and learning strategies	
The following strategies are used depending on the content of the lecture: • Providing printed lectures from modern, diverse sources rich in examples. • Using the blackboard to teach students, clarify the solution steps, and extract results. • Practicing on how solving some questions related to the scientific subject. • Asking questions and inquiries and trying to involve the largest possible number of students and discuss Details and their discussion are objective and directed. • Quizzes.	The strategy

10. Course structure

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
According to points in section 9	According to points in section 9	Computer Architecture Classification of computer architecture Von Neumann Machines Non Von Neumann Machines	Computer Architecture Classification of computer architecture Von Neumann Machines	2	1

			Non Von Neumann Machines		
According to points in section 9	According to points in section 9	Memory system architecture	Memory system architecture	2	2
According to points in section 9	According to points in section 9	Memory device characterist	Memory device characteristics	2	3
According to points in section 9	According to points in section 9	RAM unit components	RAM unit components	2	4
According to points in section 9	According to points in section 9	RAM unit components Semiconductors RAMs RAM design	RAM unit components Semiconductors RAMs RAM design	2	5
According to points in section 9	According to points in section 9	Cache Memory	Cache Memory	2	6
According to points in section 9	According to points in section 9	Cache design	Cache design	2	7
According to points in section 9	According to points in section 9	Principles of locality of reference	Principles of locality of reference	2	8
According to points in section 9	According to points in section 9	Structure of cache memory	Structure of cache memory	2	9
According to points in section 9	According to points in section 9	Basic operation of cache	Basic operation of cache	2	10
According to points in section 9	According to points in section 9	Performance of cache Mapping function Replacement algorithms Write policies	Performance of cache Mapping function Replacement algorithms Write policies	2	11
According to points in section 9	According to points in section 9	Branching	Branching	2	12
According to points in section 9	According to points in section 9	Types of Microinstructions -Horizontal microinstructions -Vertical microinstructions	Types of Microinstructions -Horizontal microinstructions -Vertical microinstructions	2	13-14

According to points in section 9	According to points in section 9	Virtual Memory	Virtual Memory	2	15
Mid-Year Examinations					
According to points in section 9	According to points in section 9	Virtual memory principles Paging technique	Virtual memory principles and paging technique	2	16
According to points in section 9	According to points in section 9	Translation lookaside buff	Translation lookaside buffer		17
According to points in section 9	According to points in section 9	Page replacement policies -Segmentation technique -Protection -Segmentation with paging	Page replacement policies -Segmentation technique -Protection -Segmentation with paging	2	18
According to points in section 9	According to points in section 9	Sustainable development concept • Computer power save • Chips recycling	Sustainable development concept • Computer power save • Chips recycling	2	19
According to points in section 9	According to points in section 9	CPU structure Register organization	CPU structure Register organization	2	20
According to points in section 9	According to points in section 9	Control Unit Representation Hardwired CU Microprograming CU -Example	Control Unit Representation Hardwired CU Microprograming CU -Example	2	21
According to points in section 9	According to points in section 9	Central Processing Unit Single bus organization	Central Processing Unit Single bus organization	2	22
According to points in section 9	According to points in section 9	Multi bus organization	CPU Multi bus organization	2	23
According to points in section 9	According to points in section 9	Execution of a complete Instruction	Complete execution of the instruction using symbolic microprogramming representation	2	24
According to points in section 9	According to points in section 9	Execution of a complete Instruction	Complete execution of the instruction using symbolic	2	25

			microprogramming representation		
According to points in section 9	According to points in section 9	Input Output System	Input Output System	2	26
According to points in section 9	According to points in section 9	Programmed IO Direct Memory Access DMA controller Types of DMA -DMA transfer	Programmed IO Direct Memory Access DMA controller Types of DMA -DMA transfer	2	27
According to points in section 9	According to points in section 9	Pipelining	Introduction to Pipelining	2	28
According to points in section 9	According to points in section 9	Cycle time of pipelining process		2	29
According to points in section 9	According to points in section 9	Pipeline latency		2	30

11. Course assessment

Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports.

- Mid year exam 25%
- 15% includes (theoretical and practical tests 5%, assignments 5%, reports 5% during the year)
- 60% Final test

12. References

	BOOKS
• David A. Patterson and Jone L. Hennessy ' computer organization and design: the Hardware / Software Interace. Morgan Kaufmann, 1998 • M.M. Muno ' Computer systems Architecture' 3 Ed. 1993	Main resources
	Recommended resources
	Electronics and website resources

As az

Dr. Yahya Qasim

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب

Course description form

1. Course name:	
Software Engineering	
2. Course code	
EDCO26F306	
3. Semester/year	
2025-2026	
4. Preparation date of this description	
1/9/2025	
5. Available forms of attendance	
In person	
6. Number of hours (total)/number of credits (total)	
60/4 credits	
7. Name of the course tutors	
dr.raya.alothman@uomosul.edu.iq Email:	Name: Dr. Rayaa Basil
8. Course objectives	
• Introduce the basic technologies used in modern multimedia computers, which were extracted from a number of prescribed methodological sources for the purpose of consolidating the foundations and rules of the course methodology. • Understand the basic concepts and principles of information modeling systems for digital images, audio, video, text, and other types of files.	Objectives of the study subject
9. Teaching and learning strategies	
The following strategies are used depending on the content of the lecture: • Providing printed lectures from modern, diverse sources rich in examples. • Using the blackboard to teach students, clarify the solution steps, and extract results. • Practicing on how solving some questions related to the scientific subject. • Asking questions and inquiries and trying to involve the largest possible number of students and discuss Details and their discussion are objective and directed. • Quizzes. • Using e-learning in teaching according to available capabilities. • Writing scientific reports and analyzing data	The strategy

10. Course structure

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
According to points in section 9	According to points in section 9	Why Software Engineering	Why Software Engineering	2	1
According to points in section 9	According to points in section 9	Introduction in Software Engineering	Introduction in Software Engineering	2	2

According to points in section 9	According to points in section 9	Software Failures	Software Failures	2	3
According to points in section 9	According to points in section 9	Professional Software Development	Professional Software Development	2	4
According to points in section 9	According to points in section 9	Frequently asked questions about software engineering	Frequently asked questions about software engineering	2	5
According to points in section 9	According to points in section 9	Software products	Software products	2	6
According to points in section 9	According to points in section 9	Important of the software engineering	Important of the software engineering	2	7
According to points in section 9	According to points in section 9	Software process activities	Software process activities	2	8
According to points in section 9	According to points in section 9	General Issues that affect m software	General Issues that affect most software	2	9
According to points in section 9	According to points in section 9	Software Applications	Software Applications	2	10
According to points in section 9	According to points in section 9	Software process models/Th waterfall model /project	Software process models/The waterfall model /project	2	11
According to points in section 9	According to points in section 9	Incremental development/project	Incremental development/project	2	12
According to points in section 9	According to points in section 9	Reuse-oriented software engineering /project	Reuse-oriented software engineering /project	2	13
According to points in section 9	According to points in section 9	Software specification/Software desig and implementation/Softwar validation	Software specification/Software design and implementation/Softwa validation	2	14-15
	Mid Term Break				
According to points in section 9	According to points in section 9	Software requirements/Functional requirements	Software requirements/Functio nal requirements	2	16

According to points in section 9	According to points in section 9	Non/Functional requirement	Non/Functional requirements		17
According to points in section 9	According to points in section 9	Functional Modeling /conce and phenomena	Functional Modeling /concepts and phenomena	2	18
According to points in section 9	According to points in section 9	Class/ Diagram types	Class/ Diagram types	2	19
According to points in section 9	According to points in section 9	Actor vs. Instances/Activity Diagram	Actor vs. Instances/Activity Diagram	2	20
According to points in section 9	According to points in section 9	System Modeling/ structure and behavior Classes and associations	System Modeling/ structure and behavior Classes and associations	2	21
According to points in section 9	According to points in section 9	User Interface Design and system design	User Interface Design and system design	2	22
According to points in section 9	According to points in section 9	Human – computer interacti	Human – computer interaction	2	23
According to points in section 9	According to points in section 9	Graphical User Interface(GU	Graphical User Interface(GUI)	2	24
According to points in section 9	According to points in section 9	Software design based on GRASP principles	Software design based on GRASP principles	2	25
According to points in section 9	According to points in section 9	Coupling/Cohesion	Coupling/Cohesion	2	26
According to points in section 9	According to points in section 9	Software design /Architectu verification and validation	Software design /Architecture, verification and validation	2	27
According to points in section 9	According to points in section 9	Feasibility/ Organization feasibility	Feasibility	2	28
According to points in section 9	According to points in section 9	The most important development in The field in software engineering	The most important development in The field in software engineering	2	29
According to points in section 9	According to points in section 9	Designing user interface in social development softwar	Designing user interfac in social development software	2	30
11. Course assessment					

Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports. • Mid year exam 25% • 15% includes (theoretical and practical tests 5%, assignments 5%, reports 5% during the year) • 60% Final test	
12. References	
.Software engineering: a practitioner's approach / Roger S. Pressman.—5th ed. .2 Pressman," S/W Engineering principles ," 2010	BOOKS
.1Software engineering: a practitioner's approach / Roger S. Pressman.—5th ed. .2 Pressman," S/W Engineering principles ," 2010	Main resources
	Recommended resources
	Electronics and website resources

Dr. Rayaa Basil

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course description form

1. Course name:	
Counseling and Psychological Health	
2. Course code	
EDCO25F307	
3. Semester/year	
2024-2025	
4. Preparation date of this description	
1/9/2024	
5. Available forms of attendance	
In person	
6. Number of hours (total)/number of credits (total)	
60 hours	
7. Name of the course tutors	
Email: Rahma.sultan@uomosul.edu.iq	Name: L. Rahmaa Talal
8. Course objectives	
• This course aims to introduce students to the foundations, principles, theories and applications of educational guidance. • Students becomes familiar with methods and means for the success of the counseling process, such as counseling observation, interviews, and the type and method of directing questions necessary for the success of the educational counseling and guidance process. • Students recognizes their role as a "mentor teacher," regardless of his academic specialization, whatever it may be, and that as the primary educational tool in achieving goals.	Objectives of th study subject
9. Teaching and learning strategies	
The following strategies are used depending on the content of the lecture: • Classroom skills related to educational counseling vary between the skill of asking questions and giving examples related to the academic or social reality of the learning environment and outside it, as well as striving to stimulate classroom interaction by asking questions to students and asking for their opinions on specific behavioral phenomena, which helps to consolidate the meaning required of the student. • Providing printed lectures from modern, diverse sources rich in examples. • Using the blackboard to teach students, clarify the solution steps, and extract results. • Practicing on how solving some questions related to the scientific subject. • Asking questions and inquiries and trying to involve the largest possible number of students and discuss • Details and their discussion are objective and directed. • Giving a set of homework questions to students to encourage them to follow the subject by solving those questions can determine whether the material has been understood.	The strategy
10. Course structure	

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week
According to points in section 9	According to points in section 9	guidance and mental health	Introduction to the third year and its importance and to the subject of educational guidance and its importance	2	1
According to points in section 9	According to points in section 9	guidance and mental health	Introduction to the meaning of counseling, its concepts	2	2
According to points in section 9	According to points in section 9	guidance and mental health	clarification of the relationship of counseling with other sciences	2	3
According to points in section 9	According to points in section 9	guidance and mental health	Guidance objectives, principles and foundations	2	4
According to points in section 9	According to points in section 9	Individual and group guidance	foundations of educational counseling	2	5
According to points in section 9	According to points in section 9	Individual and group guidance	Methods of counselling	2	6
According to points in section 9	According to points in section 9	Individual and group guidance	Individual guidance	2	7
According to points in section 9	According to points in section 9	Individual and group guidance	Group guidance	2	8
According to points in section 9	According to points in section 9	Individual and group guidance	Group guidance beneficial	2	9
According to points in section 9	According to points in section 9	Psychological and educational guidance	The role of the counselor in counseling	2	10
According to points in section 9	According to points in section 9	Psychological and educational guidance	Psychological and educational fields	2	11
According to points in section 9	According to points in section 9	Psychological and educational guidance	Psychological and educational fields	2	12
According to points in section 9	According to points in section 9	Psychological and educational guidance	Professional guidance	2	13

According to points in section 9	According to points in section 9	Psychological and family counseling	Therapeutic guidance	2	14
According to points in section 9	According to points in section 9	Psychological and family counseling	Family counseling	2	15
According to points in section 9	According to points in section 9	Psychological and family counseling	Counseling children and youth	2	16
According to points in section 9	According to points in section 9	Psychological and family counseling	Counseling adults	2	17
According to points in section 9	According to points in section 9	Guidance Theories	Counseling people with special needs	2	18
According to points in section 9	According to points in section 9	Guidance Theories	Psychoanalysis theory	2	19
According to points in section 9	According to points in section 9	Guidance Theories	Concepts of psychoanalysis theory	2	20
According to points in section 9	According to points in section 9	Guidance Theories	Educational applications of the theory	2	21
According to points in section 9	According to points in section 9	Guidance Theories	Behavioral theory	2	22
According to points in section 9	According to points in section 9	Guidance Theories	Principles of Behavioral Theory	2	23
According to points in section 9	According to points in section 9	Information needed for guidance	Educational Applications of the Theory	2	24
According to points in section 9	According to points in section 9	Information needed for guidance	Existential Theory	2	25
According to points in section 9	According to points in section 9	Guidance and counseling in school	Objectives of Existential Theory	2	26
According to points in section 9	According to points in section 9	Guidance and counseling in school	Therapeutic Methods of Theory	2	27
According to points in section 9	According to points in section 9	Mental health	Guided Observation	2	28

According to points in section 9	According to points in section 9	Mental health	Interview and CV	2	29
According to points in section 9	According to points in section 9	Mental Health Counseling and Guidance in School Counseling and Guidance in School Mental Health Mental Health Mental Health Counseling and Guidance in School	Case Study and Counselor Teacher Counselor Teacher Problems Addressed by Counseling Definition of Mental Health and Its Goals Normal Abnormal Criteria Abnormal Behavior and Its Criteria	2	30

11. Course assessment

Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports.

- Mid year exam 25%
- 15% includes (theoretical tests 10%, assignments and reports 5% during the year)
- 60% Final test

12. References

• Counseling and mental health, by Dr. Tamar Muhammad	BOOKS
	Main resources
	Recommended resources
	Electronics and website resources

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Rahmaa Talal

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
أ.م.د. محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course Description Form

1. Course Name:	
Teaching methods	
2. Course Code:	
EDCO25F308	
3. Semester / Year:	
Annual / 2025-2026	
4. Description Preparation Date:	
September 1, 2025	
5. Available Attendance Forms:	
Weekly theoretical and practical lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 hours (4 educational units)	
7. Course administrator's name (mention all, if more than one name)	
Name: Hala Moayid Sheet Email: Hala.moayid@uomosul.edu.iq Name: Ibrahim Abdul Ghani Ibrahim Email: ibrahim.albaram@uomosul.edu.iq Name: Rahma Talal Sultan Email: rahma.sultan@uomosul.edu.iq	
8. Course Objectives	
Course Goals:	• Define the foundations, philosophy, and types of curriculum construction. • Understand the concept of educational goals and the methods used to formulate them. • Distinguish between levels of educational goals and formulate them accurately. • Identify major teaching methods, including their steps, features, drawbacks, and underlying principles. • Understand the concept and importance of planning. • Develop daily, terminal (semester), and annual lesson plans.
9. Teaching and Learning Strategies	
Strategy	□ Discussion strategy. □ Discovery learning. □ Problem-solving strategy. □ Advanced organizers. □ Think-Pair-Share. □ Mind mapping

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding the concept of science and technology	Introduction, basic concepts in curricula (science, technology) and components of science	According to points in section 9	Daily Quiz

2	2	To distinguish between scientific thinking skills and to mention the characteristics of science	Scientific thinking skills, characteristics of science, philosophy of teaching science	According to points in section 9	Q&A / Discussion
3	2	To know the traditional concept of the curriculum and its disadvantages.	Curricula, the traditional concept of the curriculum, criticism directed at the traditional curriculum	According to points in section 9	Oral Exam
4	2	To know the modern concept of the curriculum, what its components are, and the most important factors that contributed to the development of the curriculum	The modern concept of the curriculum, the components of the curriculum in its modern meaning, the factors that contributed to the development of the curriculum	According to points in section 9	Group Reports
5	2	To compare the traditional curriculum, the modern curriculum, and the types of curriculum organizations	A comparison between the traditional curriculum and the modern curriculum, curriculum organizations	According to points in section 9	Class Interaction
6	2	Foundations of curriculum construction, cognitive foundation	To identify the foundations of curriculum construction and explain what the cognitive basis is	According to points in section 9	Reports/Assignments
7	2	Philosophical basis, psychological basis	To clarify what is the philosophical basis and psychological basis	According to points in section 9	Assignments
8	2	The social basis, culture and curriculum,	To distinguish between the social,	According to points in section 9	Daily Quiz

		components of culture, curriculum and social change	philosophical and psychological basis and the importance of each of them		
9	2	Types of curricula, the separate subjects curriculum, characteristics of the separate subjects curriculum, disadvantages of the separate subjects curriculum	To explain the types of curricula, the separate subjects curriculum, the characteristics of the separate subjects curriculum, and the negatives of the separate subjects curriculum	According to points in section 9	Assignments
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
10	2	The interconnected materials approach, characteristics of the interconnected materials approach, disadvantages of the interconnected materials approach,	To explain the types of objective tests with applied examples	According to points in section 9	Shared Reports/Quizzes
11	2	The activity approach, characteristics of the activity approach, disadvantages of the activity approach	To explain with an example the difference between oral, practical and performance tests	According to points in section 9	Class Interaction
12	2	The pivotal curriculum, characteristics of the pivotal curriculum, disadvantages of the pivotal curriculum	To know how to evaluate performance	According to points in section 9	Class Interaction

13	2	Elements of the curriculum, educational goals, and the importance of educational goals	To learn how to do observation	According to points in section 9	Daily Quiz
14	2	Sources for deriving educational goals, cognitive levels according to Bloom's classification	Explain the difference between rating records and rating scales	According to points in section 9	Individual assignments
15	2	Behavioral objectives, formulation of behavioral objectives, specifications of behavioral objectives Classification of behavioral objectives	To know behavioral objectives, formulate behavioral objectives, and specifications of behavioral objectives Classification of behavioral objectives	According to points in section 9	Class Interaction
16	2	Teaching methods and educational techniques: concept (method, style, teaching strategy)	To define teaching methods and educational techniques: the concept (method, style, teaching strategy)	According to points in section 9	Individual assignments
17	2	The concept of teaching, the foundations of good teaching, the advantages of a good method Introduction to the development of teaching methods	To know the concept of teaching, the foundations of good teaching, and the advantages of a good method Introduction to the development of teaching methods	According to points in section 9	Class Interaction

18	2	Lecture method: developed lecture methods, factors that help the success of the lecture method, advantages and disadvantages of the method.	Lecture method: developed lecture methods, factors that help the success of the lecture method, advantages and disadvantages of the method.	According to points in section 9	Individual assignments
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
19	2	Problem solving method: concept of t method, steps of th method, advantage and disadvantages the method Discussion method: concept of the method, steps of the method, advantages and disadvantages of the method	To mention the steps for constructing a problem-solving method: the concept of the method, steps of the method, advantages and disadvantages of the method Discussion method: concept of the method, steps of the method, advantages and disadvantages of the method	According to points in section 9	Class Interaction
20	2	Learning circle: the concept of the method, steps of the method, advantages and disadvantages of the method Brainstorming: concept	To become familiar with the steps of the learning circle: the concept of the method, steps of the method, advantages and disadvantages of the method Brainstorming: the concept of the method, steps of the method, advantages and	According to points in section 9	Individual assignments

			disadvantages of the method		
21	2	Project method: concept of the method, steps of the method, advantages and disadvantages of the method	To become familiar with the project method: the concept of the method, steps of the method, advantages and disadvantages of the method	According to points in section 9	Class Interaction
22	2	Interrogation method: concept of the method, steps of the method, advantages and disadvantages of the method	To become familiar with the method of interrogation: the concept of the method, steps of the method, advantages and disadvantages of the method	According to points in section 9	Individual assignments
23	2	Direct presentation method: concept of the method, steps of the method, advantages and disadvantages of the method	To explain the direct presentation method: the concept of the method, steps of the method, advantages and disadvantages of the method	According to points in section 9	Assignments
24	2	Educational games method, the concept of the method, steps of the method, advantages and disadvantages of the method	To explain the method of educational games, the concept of the method, the steps of the method, the advantages and disadvantages of the method	According to points in section 9	Assignments
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
25	2	For the student to identify:	Special Needs Education	According to points in section 9	Individual assignments

		- Categories of people with special needs. - Organization of educational principles and teaching methods for special needs. - The objective of special needs education.			
26	2	- Promoting the integration of people with special needs into society. - Enabling them to acquire necessary skills and knowledge. - Helping them achieve independence in their lives. - Highlighting their individual abilities and talents. - Providing equal opportunities for academic and professional success.	Organizing educational principles in teaching for people with special needs	According to points in section 9	Class Interaction
27	2	Selecting appropriate teaching methods. - The teacher selects teaching methods based on the following variables: • Degree of disability. • Severity of disability. • Mental age of the child.	Programs and patterns of education, learning, and teaching for people with special needs	According to points in section 9	Assignments

		- Teaching methods in special education vary and are based on diagnosing the student's condition and developing a plan for solution and treatment.			
28	2	Educational technologies: (visual, audio, audio-visual, local environment)	To distinguish between educational technologies: (visual, audio, audio-visual, local environment)	According to points in section 9	Daily exam
29	2	Planning in teaching: the concept of planning, the importance of lesson planning	To know planning in teaching: the concept of planning, the importance of lesson planning	According to points in section 9	Assignments
30	2	How to prepare lesson plan, types of study plans (annual, quarterly, monthly, daily)	To explain how to prepare the plan, the types of study plans (annual, quarterly, monthly, daily)	According to points in section 9	Daily exam

11. Course Evaluation and Grade Distribution
□ Mid-term Exam: 25% □ Year's Effort (S'ai): 15% (Quizzes/Oral 5%, Tasks 5%, Preparation 5%) □ Final Exam: 60%

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	A compilation of materials from the College of Education for Pure Sciences faculty.
Main references (sources)	*Introduction to General Teaching Methods*
Recommended books and references (scientific journals, reports...)	*General Teaching Methods* by Prof. Tawfiq Ahmed Marei & Prof. Mohammed Mahmoud Al-Hila (2009). • *Introduction to General Teaching Methods* by Prof. Fadel Khalil Ibrahim (2010).

	• Works by Dr. Asaad Hussein Atwan (2019)
Electronic References, Websites	• https://2u.pw/Yad4a
13. Curriculum Update Percentage	

Hala Moayid Sheet

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course Description Form

1. Course Name and Stage:					
Operating Systems					
2. Course Code:					
1EDCO26F40					
3. Semester / Year:					
2025-2026					
4. Description Preparation Date:					
1\9\2025					
5. Available Attendance Forms:					
Student attendance					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 hours per week (2 hours theoretical + 2 hours practical)					
7. Course administrator's name (mention all, if more than one name) and Scientific title					
Name: DR.Manar Abdulkareem Al-Abaji Email: manar_alabaji@uomosul.edu.iq Kanar Mohammed Sami Email: lamarsafwan111@uomosul.edu					
8. Course Objectives					
Subject Objectives	• To provide students with basic and general information abou the importance of operating systems in supporting computer hardware and running various application programs. • To learn about the most important theories and algorith involved in operating system design, as well as the m common problems that occur when running computers and h to manage the various available resources.				
9. Teaching and Learning Strategies					
Strategy	- Providing printed lectures from modern, diverse, and illustrative sources. - Utilizing the whiteboard to teach students, clarify solution steps, and extrac results. - Solving some questions related to the subject matter. - Posing questions and inquiries, engaging as many students as possible, and addressing details through objective and guided discussion. - Assigning a set of homework questions to encourage students to follow the material. Solving these questions allows for an assessment of whether the material has been understood. - Utilizing e-learning in teaching, within available resources. - Writing scientific reports and analyzing data.				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to operating systems	Introduction	According to the points	According to the points

			Definition, goals, influence on computer architecture	above, and as needed.	above, and as needed.
2	2	Operating System Structure	Operating System Structure	According to the points above, and as needed.	According to the points above, and as needed.
3	2	Operating System Structure	OS services, User and OS interface, System calls, types of system calls, System program, OS design and Implementation, System boot	According to the points above, and as needed.	According to the points above, and as needed.
4	2	Types of operating systems	Types of operating systems: Batch , Multiprogramming, time sharing, parallel, Distributed, and real time	According to the points above, and as needed.	According to the points above, and as needed.
5	2	LINUX	LINUX: introduction and history Benefits of Linux	According to the points above, and as needed.	According to the points above, and as needed.
6	2	LINUX	Ubuntu 12.04 Server	According to the points above, and as needed.	According to the points above, and as needed.
7	2	Processes	Process:1-Process concept Definition, process states, PCB,context switch	According to the points above, and as needed.	According to the points above, and as needed.
8	2	Scheduling	2-Process scheduling	According to the points above, and as needed.	According to the points above, and as needed.
9	2	Scheduling	Scheduling queues, schedulersو process creation, process termination, process suspension, . . etc	According to the points above, and as needed.	According to the points above, and as needed.
10	2	Scheduling algorithms	Scheduling algorithms:	According to the points above, and as needed.	According to the points above, and as needed.

11	2	Deadlock :	Deadlock : 1-Deadlock characterization Necessary conditions, resource allocation graph,	According to the points above, and as needed.	According to the points above, and as needed.
12	2	Methods of handling deadlock	Methods of handling deadlock 1- Deadlock prevention 2-Deadlock avoidance Resource allocation graph, Safe and unsafe state,	According to the points above, and as needed.	According to the points above, and as needed.
13	2	3-Deadlock detection	3-Deadlock detection Single instance of each resource type, several instances of each resource type, detection algorithm usage	According to the points above, and as needed.	According to the points above, and as needed.
14	2	-Recovery from deadlock	-Recovery from deadlock Process termination, resource preemption	According to the points above, and as needed.	According to the points above, and as needed.
15	2	Threading	Threading	According to the points above, and as needed.	According to the points above, and as needed.
Mid-year exam					
16-2	Application in schools				
22	2	Memory Management	Memory Management: 1-Contigous memory allocation Single partition allocation, multiple partition allocation, external and internal fragmentation	According to the points above, and as needed.	According to the points above, and as needed.
23	2	Paging	2-Paging	According to the points above, and as needed.	According to the points above, and as needed.
24	2	Segmentation	3-Segmentation Basic method, hardware, implementation of segment tables, protection and sharing, fragmentation	According to the points above, and as needed.	According to the points above, and as needed.
25	2	File system structure	File system structure	According to the points	According to the points

				above, and as needed.	above, and as needed.
26	2	File-system Implementation	File-system Implementation File system organization, allocation methods (contiguous, linked, indexed) .	According to the points above, and as needed.	According to the points above, and as needed.
27	2	Disk structure	Disk structure -Disk scheduling FCFS, SSTF,	According to the points above, and as needed.	According to the points above, and as needed.
28	2	Disk management	Disk management Disk formatting, boot block, bad block	According to the points above, and as needed.	According to the points above, and as needed.
29	2	Operating systems and their role in achieving sustainable development	Sustainable Development in the Field of Computing - Definition of Sustainable Development - Sustainable Development in the Field of Computing and Operating Systems	According to the points above, and as needed.	According to the points above, and as needed.
30	2	Operating systems and their role in achieving sustainable development	Elements and Objectives of Sustainable Development as Relating to Computer Operating Systems	According to the points above, and as needed.	According to the points above, and as needed.

11. Course Evaluation and Marks
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 30% daily theoretical and practical exams, participation, and reports; 20% mid-year exam; 50% final exam

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	-Operating System Concepts, IBRAHAM SILBERsCHATZ, ,John Wiley and Sons Inc, 2018 V10
Main references (sources)	

Recommended books and references (scientific journals, reports...)	IVSL
Electronic References, Websites	www.tutorialspoint.com
Percentage of Curriculum update	

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Manar Abdulkareem Al-Abaji

Course description form

1. Course name:					
Computer networks					
2. Course code					
EDCO25F402					
3. Semester/year					
2025-2026					
4. Preparation date of this description					
1/9/2025					
5. Available forms of attendance					
In person (theoretical + practical) and Online to present the required tasks and assignmen					
6. Number of hours (total)/number of credits (total)					
60 theoretical hours + 60 practical hours (6 educational credits)					
7. Name of the course tutors					
Name: Dr. Awos Kh. Ali L. Huda Basim Zaid Fawaz			Email:	a.k.ali@uomosul.edu.iq	
8. Course objectives					
• To introduce the term computer networks and the related various applications. • Understanding, designing and building computer networks. • Understanding the main components of networks. • List the layers of networks, network model architecture and applications, and the difference with other models • Understanding how to subnets big computer networks according to clients needs and the differences between classful and classless addressing and train students on how to create subnets. • Learn the Cisco packet tracer app and use it to build various types of networks.					Objectives of the study subject
9. Teaching and learning strategies					
The following strategies are used depending on the content of the lecture: • Discussion strategy. • Discovery learning strategy • Problem solving strategy • Advanced organizations strategy • Think, discuss, share strategy • Mind mapping strategy • Flexible groups strategy					The strategy
10. Course structure					
Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week

Exams/assignments/ Interaction/reports/coding	According to point 9.	- Living In Network - What Is Network - Data Communication - The Fundamental Of a Communication System - Transmission Mode - Serial And Parallel	Knowledge	4	1
Exams/assignments/ Interaction/reports/coding	According to point 9.	- Communication Over The Network - The Element Of Communication - Communicating The Messages - Component Of The Network	Knowledge	4	2
Exams/assignments/ Interaction/reports/coding	According to point 9.	- Network Media - LAN, WAN, And Internet Network - Network Protocol	Knowledge	4	3
Exams/assignments/ Interaction/reports/coding	According to point 9.	Network topology Network design	Knowledge	4	4
Exams/assignments/ Interaction/reports/coding	According to point 9.	- Layered Models - The Benefits Of Layered Model - Protocol And Reference Models - OSI Model	Knowledge	4	5
Exams/assignments/ Interaction/reports/coding	According to point 9.	- TCP/IP Layer - Comparing OSI & TCP/IP Model	Knowledge	4	6
Exams/assignments/ Interaction/reports/coding	According to point 9.	- Application Layer Functionality And Protocol - User Application - Services - Application Protocol - Examples	Knowledge	4	7
Daily test	Attendance to quiz	Quiz	Evaluation	2	8
Exams/assignments/ Interaction/reports/coding	According to point 9.	Addressing in the Network Types of network addresses	Knowledge	4	9
Exams/assignments/ Interaction/reports/coding	According to point 9.	Physical Addresses MAC address	Knowledge	4	10

Exams/assignments/ Interaction/reports/coding	According to point 9.	Logical Addresses IP address	Knowledge	4	11
Exams/assignments/ Interaction/reports/coding	According to point 9.	Features of IP address	Knowledge	4	12
Exams/assignments/ Interaction/reports/coding	According to point 9.	IP address classes	Knowledge	4	13
Exams/assignments/ Interaction/reports/coding	According to point 9.	Distributing IP address	Knowledge	4	14
Exams/assignments/ Interaction/reports/coding	According to point 9.	- Addressing The Network - IPv4 Address - IPv4 Address For Different Purposes	Knowledge	4	15
		Mid-Year Examinations			
		Applying teaching to schools			16-21
Exams/assignments/ Interaction/reports/coding	According to point 9.	- Special Addresses - Assigning Addresses - Sub netting	Knowledge		22
Exams/assignments/ Interaction/reports/coding	According to point 9.	IPv6 Packet	Knowledge		23
Exams/assignments/ Interaction/reports/coding	According to point 9.	IPv6 address format	Knowledge		24
Exams/assignments/ Interaction/reports/coding	According to point 9.	IPv6 address types	Knowledge		25
Exams/assignments/ Interaction/reports/coding	According to point 9.	Neighbor Discovery Protocol	Knowledge		26
Exams/assignments/ Interaction/reports/coding	According to point 9.	ICMPv6	Knowledge		27
Exams/assignments/ Interaction/reports/coding	According to point 9.	Stateless address autoconfiguration (SLAAC)	Knowledge		28
Exams/assignments/ Interaction/reports/coding	According to point 9.	Stateless address autoconfiguration (SLAAC)	Knowledge		29
Exams/assignments/ Interaction/reports/coding	According to point 9.	Stateless address autoconfiguration (SLAAC)	Knowledge		30

11. Course assessment

Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports.

- Mid year exam 20%
- 30% includes (theoretical and practical tests 10%, assignments 10%, reports 10% during the year)
- 50% Final test

12. References	
• Behrouz A , “Data Communications and Networking”, fourth edition	BOOKS
• Behrouz A , “Data Communications and Networking”, fourth edition	Main resources
•	Recommended resources
Computer Network Tutorial for Beginners (guru99.com)	Electronics and website resour

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Dr. Awos Kh. Ali

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course description form

1. Course name:		
Web design		
2. Course code		
EDCO26F403		
3. Semester/year		
2025-2026		
4. Preparation date of this description		
1/9/2025		
5. Available forms of attendance		
In person or Online (Google meet)		
6. Number of hours (total)/number of credits (total)		
120 hours		
7. Name of the course tutors		
dr.maan.y@uomosul.edu.iq senan.alhasan@uomosul.edu.iq	Email:	Name: Dr. Maan Younis Senan Adel
8. Course objectives		
• Aims to introduce students to the basics of designing and programming electronic pages using HTML5, CSS3, and PHP. • Students who complete the academic year will have the necessary knowledge to design personal websites • Setting up the first web presence for small businesses. • Students will be able to create a standard dynamic website with a modern look individually		Objectives of the study subject
9. Teaching and learning strategies		
The following strategies are used depending on the content of the lecture: • Discussion strategy. • Discovery learning strategy • Problem solving strategy • Advanced organizations strategy • Think, discuss, share strategy • Mind mapping strategy • Quizzes and exams • Submitting reports and assignments		The strategy

10. Course structure

Assessment method	Learning method	Topic name	Required learning outcomes	Hours	Week

According to points in section 9	According to points in section 9	- Standard web page structure and its components	Introduction to web design	4	1
According to points in section 9	According to points in section 9	HTML	Introduction to HTML	4	2
According to points in section 9	According to points in section 9	How to View HTML Source	Required Tools and programs to design and create websites	4	3
According to points in section 9	According to points in section 9	What are HTML tags? Logical vs. Physical Tags Examples	HTML part1	4	4
According to points in section 9	According to points in section 9	Nested Tags Why Use Lowercase Tags? Tag Attributes Examples	HTML part2	4	5
According to points in section 9	According to points in section 9	Basic HTML Tags Examples	HTML part3	4	6
According to points in section 9	According to points in section 9	HTML Backgrounds HTML Color Examples	HTML part4	4	7
According to points in section 9	According to points in section 9	HTML Character Entities Examples	HTML part5	4	8
According to points in section 9	According to points in section 9	HTML Lists Examples	HTML part6	4	9
According to points in section 9	According to points in section 9	HTML Links Example	HTML part7	4	10
According to points in section 9	According to points in section 9	Java Script	Java Script templates 1	4	11
According to points in section 9	According to points in section 9	Java Script	Java Script templates 2	4	12
According to points in section 9	According to points in section 9	- The importance of separating style and content. The basic	Introduction to CSS	4	13

		structure and general structure of CSS. • Example			
According to points in section 9	According to points in section 9	• Create web pages using CSS templates - Examples	CSS templates 1	4	14
According to points in section 9	According to points in section 9	- Find, download and customize templates. - Formatting and cleaning code	CSS templates 2	4	15
		Mid-Year Examinations			
		Applying teaching to schools			16-21
According to points in section 9	According to points in section 9	Introduction to new version XAMPP	Explain how to create a server		22
According to points in section 9	According to points in section 9	Defining and explaining variables and how to execute programs via the server - Example	Introduction to PHP	4	23
According to points in section 9	According to points in section 9	• Special php keywords 1 - this keyword in php - Super keyword in php	PHP part1	4	24
According to points in section 9	According to points in section 9	• Special java keywords2 - Method overridden introduction - Shadow variables Examples	PHP part2	4	25
According to points in section 9	According to points in section 9	• Final keyword in php - Definition - Examples	PHP part3	4	26

According to points in section 9	According to points in section 9	- Arrays and its functions Examples.	PHP part 4	4	27
According to points in section 9	According to points in section 9	• Data ,times, get,post and its functions Examples	PHP part 5	4	28
According to points in section 9	According to points in section 9	The basics factors of implementing a website Example	Project1	4	29
According to points in section 9	According to points in section 9	Design and implement a website Example	Project2	4	30

11. Course assessment

Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports.

- Mid year exam 20%
- 30% includes (theoretical and practical tests 10%, assignments 10%, reports 10% during the year)
- 50% Final test

12. References

- Duckett, J., & Schlüter, J. (2011). HTML and CSS. Wiley.
- Nixon, R. (2012). Learning PHP, MySQL, JavaScript, and CSS: A step-by-step guide to creating dynamic websites. " O'Reilly Media, Inc.".

BOOKS

Main resources

Recommended resources

Electronics and website resources

1- Google and Youtube. ...
2- W3schools. ...
3- MDN Web Docs. ...
4- CSS-Tricks. ...
5- Google Web Development Blog. ...
6- SitePoint. ...
7- Stackoverflow. ...
8- Codepen.

Dr. Maan Yonis

Assist. Prof. Dr. Mohammed Hazim Alkawaz

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
أ.م.د. محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course Description Form

1. Course Name and Stage:	
Internet of Things/4th stage	
2. Course Code:	
EDCO25F404	
3. Semester / Year:	
Annual system 2025-2026	
4. Description Preparation Date:	
September 2025	
5. Available Attendance Forms:	
Attendance in the classroom	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 hours of theory per week, 2 units	
7. Course administrator's name (mention all, if more than one name) and Scientific title	
Name: Dr. Zena N. Abdulkader	Email: zenatiq2@uomosul.edu.iq
8. Course Objectives	
Subject Objectives	• To enable students to understand the fundamentals of the Internet of Things (IoT) • To identify the factors that contributed to the emergence of the Internet of Things (IoT) • To enable students to design and program IoT devices • To identify the components of IoT devices • To understand the process of transferring IoT data to the cloud and between cloud service providers
9. Teaching and Learning Strategies	
Strategy	• Providing printed lectures from modern, diverse, and illustrative sources. • Utilizing a data projector and interactive whiteboard to teach students, cla solution steps, and derive results. • Solving some questions deliberately containing errors and having students iden the mistakes. • Posing questions and inquiries, encouraging students to become instructors explaining and solving problems on the board at that stage. • Direct questions to all students gradually to assess their engagement and encour others to pay attention.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction and History of The Internet of Things (IoT).	Introduction and History of The Internet of Things (IoT).	Discussions in the lecture	Activities/Exam
2	2	Concepts and Definitions of The	Concepts and Definitions of The	Using library resources	Activities/Exam

		Internet of Things (IoT).	Internet of Things (IoT).		
3&4	4	Requirements, Functionalists and structure of IoT.	IoT Stack: System of Systems Requirements, Functionalists and structure of IoT.	Training students in electronic research	Activities/Exam
5	2	IoT enabling technologies.	Role of IoT in Sustainability	Discussions in the lecture and seminar	Activities/Exam
6&7	4	IoT Architecture.	IoT enabling technologies and Architecture.	Using library resources	Activities/Exam
8	2	Major component of IoT (Hardware & Software).	Major component of IoT (Hardware & Software). Sensors and Actuators	Discussions in the lecture	Activities/Exam
9&10	4	Understanding the role of Arduino and Raspberry Pi in IoT	Arduino and Raspberry Pi in IoT	Discussions in the lecture and seminar	Activities/Exam
11&12	4	Overview and Role of Storage in Cloud / Server /Inhouse Storage.	Overview and Role of Storage in Cloud / Server /Inhouse Storage. Cloud Computing Sevices	Discussions in the lecture	Activities/Exam
13	2	Databases Connectivity with IoT and uses.	Databases Connectivity with IoT and uses.	Using library resources	Activities/Exam
14&15	4	How to transfer data by Wireless / Wired connectivity.	How to transfer data by Wireless / Wired connectivity.	Training students in electronic research	Activities/Exam
Half year					
16-21	Application				
22	2	GSM, 2g ,3g ,4g & 5g	GSM, 2g ,3g ,4g & 5g	Discussions during the lecture	Activities/Exam
23&24	4	IoT communication and networking protocols, Role of wired and wireless communication.	IoT communication and networking protocols, Role of wired and wireless communication.	Using library resources	Activities/Exam

25	2	IoT services and applications.	IoT services and applications.	Training students in electronic research	Activities/Exam
26&27	4	Attack, Defense, and Network Robustness of Internet of Things	Attack, Defense, and Network Robustness of Internet of Things	Discussions during the lecture	Activities/Exam
28	2	Malware Propagation and Control in Internet of Things	Malware Propagation and Control in Internet of Things	Using library resources	Activities/Exam
29&30	4	Privacy Preservation Data Dissemination	Privacy Preservation Data Dissemination	Training students in electronic research	Activities/Exam

11. Course Evaluation and Marks

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.

Semi-weekly quizzes (shortened questions with the material explanation) 5marks

Monthly tests 10marks

Mid-year exam 25marks

End-of-year exam 60marks

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	• Internet of Things Principles and Paradigms, Buyya, R., & Dastjerdi, A. V. (Eds.), 2016 • Internet of Things A Hands-on Approach, Arshdeep Bahga & Vijay Madisetti, 2015
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	المستوى المتقدم IOT 2022 كورس انترنت الاشياء MSCIS 4rth Sem(E-Books).pdf

Zena Natiq Abdulkader

Asst.Prof.Dr. Mohammed Hazim Alkawaz

كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب
محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course Description Form

1. Course Name and Stage:	
Data Security/Fourth Stage	
2. Course Code:	
EDCO26405	
3. Semester / Year:	
2025-2026	
4. Description Preparation Date:	
2025/09/01	
5. Available Attendance Forms:	
In Classrooms	
6. Number of Credit Hours (Total) / Number of Units (Total)	
4 Hours per week(2 Theoretical+ 2 Practical)	
7. Course administrator's name (mention all, if more than one name) and Scientific title	
Name: Dr. Asmaa M. Mohammed Email: asmaa_mow@uomosul.edu.iq A.L. Ammar A. Ahmed ammaraladel@uomosul.edu.iq	
8. Course Objectives	
Subject Objectives	• Providing students with fundamental information on the importance of data security in supporting the hardware and software components of a computer. • Identifying the most significant algorithmic theories that enhance data security, as well as recognizing the key problems and vulnerabilities that may threaten its integrity.
9. Teaching and Learning Strategies	
Strategy	• Providing printed lectures from modern, diverse sources, enriched with practical examples. • Utilizing the whiteboard to teach students and clarify the step-by-step processes to reach possible solutions. • Solving computational and mathematical problems related to the scientific material. • Posing questions and inquiries to engage the maximum number of students, while discussing details in an objective and guided manner. • Assigning homework sets to encourage students to follow the material and to assess their comprehension of the subject matter. • Incorporating e-learning tools into teaching according to the available resources. • Writing scientific reports and performing data analysis.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to Data Security	Unit 1	**According to the points above, and as needed**	**According to the points above, and as needed**
2	2	Data Security Techniques	Unit 1	According to the points above, and as **needed**	**According to the points above, and as needed**
3	2	Goals of Data security	Unit 1	**According to the points above, and as n**eeded	**According to the points above, and as needed**
4	2	Attacks on Data Security	Unit 1	According to the poin**ts above, and as needed**	**According to the points above, and as needed**
5	2	Cryptography	Unit 2	**According to the points above, and as ne**eded	**According to the points above, and as needed**
6	2	Types of Cryptosystems	Unit 2	According to the points above, and **as needed**	**According to the points above, and as needed**
7	2	Classical Encryption Techniques	Unit 2	**According to the points above, an**d as needed	**According to the points above, and as needed**
8	2	Substitution Techniques	Unit 2	**Ac**cording to the points above, and as nee**ded**	**According to the points above, and as needed**
9	2	Transposition Techniques	Unit 2	According to the points ab**ove, and as needed**	**According to the points**

					above, and as needed
10	2	Modern Encryption Techniques	Unit 2	**According to th**e points above, and as needed	**According to the points above, and as needed**
11	2	Simplified Data Encryption Standard	Unit 2	**According to the points above, and as need**ed	**According to the points above, and as needed**
12	2	Public Key Cryptography	Unit 3	According to the point**s above, and as needed**	**According to the points above, and as needed**
13	2	Elements and Applications of Public Key Cryptography	Unit 3	**According to the points above, and as need**ed	**According to the points above, and as needed**
14	2	The RSA Algorithm	Unit 3	According to the points above, and as **needed**	**According to the points above, and as needed**
15	2	The Mini RSA Algorithm	Unit 3	Acc**ording to the points above, and as needed**	**According to the points above, and as needed**
Midyear Exam					
16-21 Practical application in school					
22	2	Message Authentication	Unit 4	According to the points above, and as needed	**According to the points above, and as needed**
23	2	Hash Function	Unit 4	According to the points above, and as needed	**According to the points above, and as needed**

24	2	Malicious Software	Unit 5	According to the points above, and as needed	**According to the points above, and as needed**
25	2	Viruses	Unit 5	According to the points above, and as needed	**According to the points above, and as needed**
26	2	Worms	Unit 5	According to the points above, and as needed	**According to the points above, and as needed**
27	2	Cyber Security	Unit 6	According to the points above, and as needed	**According to the points above, and as needed**
28	2	Cyber Criminals and Victims	Unit 6	According to the points above, and as needed	**According to the points above, and as needed**
29	2	Types of Cyber Security Threats	Unit 6	According to the points above, and as needed	**According to the points above, and as needed**
30	2	Cyber Safety Tips	Unit 6	According to the points above, and as needed	**According to the points above, and as needed**

11. Course Evaluation and Marks

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.

- Semi-weekly quizzes and spontaneous questions integrated with material explanation (10%)
- Computer lab practical exams (written, to enable students to solve without a computer) (10%)
- Monthly exams (10%)
- Midterm exam (20%)

• Final exam (50%)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if a	
Main references (sourc	Cryptography and Network Security: Principles And Practice Seventh Edition-2(
Recommended books and references (scientific journals, reports...)	IVSL
Electronic References, Websites	www.tutorialspoint.com

Dr. Asmaa M. Mohammed

Asst.Prof.Dr. Mohammed Hazim Alkawaz

Course description form

1. Course			
Measurement and Evaluation			
2. Course code			
EDCO25F407			
3. Semester/year			
2025-2026			
4. Preparation date of this description			
1/9/2025			
5. Available forms of attendance			
"Instruction and submission of assigned tasks and homework will be conducted both face-to-face in classroom and electronically through the e-learning (e-class) platform."			
6. Number of hours (total)/number of credits (total)			
2 theoretical hours (covering 4 instructional units)			
7. Name of the course tutors:			
Dr. Ibrahim Abdulaghany Ibrahim	Email:		ibrahim.albaram@uomosul.edu.iq
8. Course objectives			
Objectives of the study subject	• Identify the basic concepts (testing, measurement, evaluation). • Distinguish between various types of tests. • Identify the characteristics of educational measurement. • Distinguish between the characteristics of educational measurement and physical measurement. • Identify the types of evaluation according to the time of procedure. • Understanding the relationship between educational objectives and the educational evaluation process. • Identify the types of achievement tests and prepare a table of specifications.		

	• Identify the characteristics of a good test (validity, reliability, ease of application and correction, comprehensiveness, objectivity, standards), its concept, types, and factors that affecting it. • Identify behavioral goals and their classifications. • Learn about the testing experience and the steps to conduct it. • Calculating the difficulty and ease factor, incorrect alternatives.
9. Teaching and learning strategies	
The strategy	The following strategies are used depending on the content of the lecture: • Discussion strategy. • Discovery learning strategy • Problem solving strategy • Advanced organizations strategy • Think, discuss, share strategy • Mind mapping strategy
10. Course structure	

Week	Hours	Required learning outcomes	Topic name	Learning method	Assessment method
1	2	Understanding the concept of measurement and evaluation	The concept of measurement and evaluation - Introduction to measurement and evaluation - The meaning of measurement and evaluation (measurement, evaluation, testing)	According to points in section 9	According to points in section 9
2	2	To deduce the relationship between measurement and evaluation	The importance of measurement and evaluation and the relationship between them - the relationship between evaluation and curriculum	According to points in section 9	According to points in section 9
3	2	To explain with an example the types of evaluation	Types of evaluation: introductory evaluation and final evaluation	According to points in section 9	According to points in section 9
4	2	To explain the difference between spoken and standard evaluation	The spoken calendar and the standard evaluation	According to points in section 9	According to points in section 9
5	2	Enumerate the types of tests and give examples of tests	Achievement tests - essay tests	According to points in section 9	According to points in section 9
6	2	To enumerate the types of goals according to Bloom's levels with examples	Objectives and their relationship to evaluation - educational objectives - Bloom's	According to points in section 9	According to points in section 9
7	2	To prepare a table of specifications for a specific topic in the computer	Preparing the specifications table - applying the specifications table	According to points in section 9	According to points in section 9
8	2	To explain the types of objective tests with applied examples	Objective tests 1- Completion	According to points in section 9	According to points in section 9
9	2	To explain the types of objective tests with applied examples	- True and false 3- Pairing	According to points in section 9	According to points in section 9
10	2	To explain the types of objective tests with applied examples	- Multiple choice	According to points in section 9	According to points in section 9

11	2	To explain with an example the difference between oral, practical and performance tests	-Oral exams - Practical or performance tests	According to points in section 9	According to points in section 9
12	2	To understand how to evaluate performance	Non-test evaluation methods: performance evaluation	According to points in section 9	
13	2	To learn how to do observation	- Observation - Conditions of observation - Types of observation	According to points in section 9	
14	2	Explain the difference between rating records and rating scales	Grading records - rating scales	According to points in section 9	
15	2	To understand what is school card and explain its importance	School card	According to points in section 9	
Mid-Year Examinations					
16-21		Applying teaching in schools			
22	2	-To identify stability -To enumerate methods for calculating stability	Specifications of a good test 1- Validity - Types of validity	According to points in section 9	According to points in section 9
23	2		2- Reliability - Methods of calculating reliability	According to points in section 9	According to points in section 9
24	2	Mention the steps for building a good test	3- Ease of application	According to points in section 9	According to points in section 9
25	2	To know the steps of constructing news in detail	Steps for constructing the test - Determining the objectives of the test	According to points in section 9	According to points in section 9
26	2	To know the steps of constructing news in detail	Determining the content of the test	According to points in section 9	According to points in section 9
27	2	To know the steps of constructing news in detail	Types of paragraphs used in the test	According to points in section 9	According to points in section 9
28	2	To be able to calculate the difficulty factor of test items	Extracting the characteristics of objective tests: Ease	According to points in section 9	According to points in section 9
29	2	To be able to distinguish between test items	Difficulty: Calculating the difficulty factor	According to points in section 9	According to points in section 9
30	2	To be able to calculate the effectiveness of alternatives	Discrimination	According to points in section 9	According to points in section 9

11. Course assessment

Split grade out of 100 according to the tasks assigned to student, such as daily preparation, exams, reports.

- **Mid year exam 25%**
- **15% includes (theoretical and practical tests 5%, assignments 5%, reports 5% during the year)**
- **60% Final test**

12. References

•	**BOOKS**

•	**Main resources**
•	**Recommended resources**
• https://2u.pw/gKCwVF • https://2u.pw/Yad4a • https://2u.pw/RX0qJ1M	**Electronics and website resources**

اسم وتوقيع صاحب المقرر

Dr. Ibrahim Abdulaghany Ibrahim

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب

Asst.Prof.Dr. Mohammed Hazim Alkawaz

محمد حازم الكواز
رئيس قسم علوم الحاسوب

Course Description Form

1. Course Name:	
Practical Education Course	
2. Course Code:	
EDCO25F408	
3. Semester / Year: 2026-2025	
2025-2026	
4. Description Preparation Date: 2025/9/1	
1 / 9 / 2025	
5. Available Attendance Forms: : Laboratory , Classroom	
Classroom-based instruction + Laboratory sessions + Real-world observations (in-service teacher in the field)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
24 theoretical hours + 48 practical hours + 6 weeks of field application in partner schools (4 modules)	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Ibrahim Abdulghani Ibrahim Abdullah Instructor Rahma Talal Sultan	Email: ibrahim.albaram@uomosul.edu.iq
8. Course Objectives	
Course Objectives	Course Learning Outcomes Upon successful completion of this course, the student teacher will be able to: 1. Demonstrate a comprehensive understanding of the core concepts of practical education, learning resources, and educational technology, and integrate them effectively into teaching practice. 2. Apply contemporary educational principles and professional standards relevant to practical education. 3. Identify and perform the modern roles and responsibilities of teachers in response to ongoing educational changes. 4. Design, write, and implement annual, semester, and daily lesson plans in accordance with curriculum requirements. 5. Practice teaching in authentic and simulated classroom situations that mirror real school environments through microteaching and field experiences. 6. Utilize diverse learning resources to enhance educational communication and classroom interaction. 7. Reflect on and improve teaching performance by learning from peers' and supervisors' experiences. 8. Employ active teaching and learning strategies effectively in university and school classroom settings.

	9. Develop self-directed learning skills through critical reflection and feedback following microteaching activities. 10. Exhibit positive professional attitudes toward the teaching profession and ethical teaching practice. 11. Recognize the role of education in promoting sustainable development.

9. Teaching and Learning strategies

Strategy	Instructional strategies include: lecture–discussion, brainstorming, role-playing, probing questions, and other cooperative learning strategies.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Concept of Practical Education: Importance, Objectives, and Foundations	Explain the importance, objectives, and foundations of practical education	As per item (9) above, as needed	As per item (9) above, as needed
2	3	Ethics of the Teaching Profession, Characteristics and Duties of the Good Teacher	Identify the ethics, characteristics, and duties of a good teacher	As per item (9) above, as needed	As per item (9) above, as needed
3–4	6	Practical Applications on How to Prepare a Lesson Plan	Prepare a daily lesson plan	As per item (9) above, as needed	As per item (9) above, as needed
5	3	21st Century Skills and Their Practical Application	Apply academic and professional teaching skills effectively	As per item (9) above, as needed	As per item (9) above, as needed
6–7	6	Education and Sustainable Development	Identify sustainable development in education	As per item (9) above, as needed	As per item (9) above, as needed
8–9	6	Practical Education and Sustainable Development	Recognize practical education within the framework of sustainable development	As per item (9) above, as needed	As per item (9) above, as needed
10–11	6	Classroom Observation: Observation Form, Basics of Observation, and Guidelines for Group Practice	Prepare for delivering a real classroom lesson	As per item (9) above, as needed	As per item (9) above, as needed
12–15	12	Microteaching and Its Techniques in Light of Sustainable Development	Perform teaching skills through microteaching	As per item (9) above, as needed	As per item (9) above, as needed
16–21	18	Group Field Practice: Students Teaching Real Lessons in Partner Schools Implement real classroom teaching in partner schools			
22–30	27	Discussion of Group Practice Reports	Identify strengths and weaknesses and benefit from field practice	As per item (9) above, as needed	As per item (9) above, as needed

11. Course Evaluation
1. Theoretical Component – 40% Assessed by the course instructor, this component evaluates the student's understanding, planning, and documentation skills: • 10 marks – Preparation of a detailed lesson plan for a selected topic in the Computer Science curriculum. • 10 marks – Presentation and discussion of the lesson plan in front of peers as part of the course's practical learning activities. • 10 marks – Compilation of reports related to Practical Education on various topics, supporting the student during field practice in schools. • 10 marks – Development of digital (e-learning) lessons for the topics taught by the student during the school-based application phase. 2. 2. Practical (Field) Component – 60% Evaluated during actual field practice in cooperating schools, this component emphasizes performance in authentic teaching settings: • 40% – Assessment by the supervising field mentor. • 10% – Assessment by the school principal. • 10% – Assessment by the cooperating school teacher. All practical assessments are conducted using pre-designed evaluation forms to ensure consistency, objectivity, and alignment with course objectives.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1. Al-Baghdadi, A. A. A. (2020). *Manahij wa Turuq al-Tadris al-'Amma* (2nd ed.). Dar Al-Yazuri Al-'Ilmiya. 2. Al-Zayyat, F. M. (2022). *Al-Tarbiyah Al-Amaliyya: Al-Asus wa Al-Tatbiqat* (1st ed.). Dar Al-Ma'rifah Al-Jami'iyya. 3. Bloom, B. S., Anderson, L., & Krathwohl, D. (2001). *Classification of Educational Objectives: Cognitive Domain* (Arabic translation). Dar Al-Nahda Al-Arabiya.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	"The schedule, assignments, and any related instructions will be determined by the course instructor and communicated to students through the official Telegram channel
Electronic References, Websites	"All electronic lectures and instructional materials uploaded to the e-learning (electronic class) platform."

Asst.Prof.Dr. Mohammed Hazim Alkawaz

اسم وتوقيع صاحب المقرر

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحاسوب

Asst.Prof.Dr. Mohammed Hazim Alkawaz

رئيس قسم علوم الحاسوب