

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department**



Academic Program and Course Description Guide

2026–2025

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 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: Al-Muthanna University

Faculty/Institute: College of Education for Pure Science

Scientific Department: Department of Mathematics

Academic or Professional Program Name: B.Edu. in Mathematics

Final Certificate Name: B.Edu. in Mathematics

Academic System: Annual

Description Preparation Date: 11/2/2026

File Completion Date: 19/2/2026

Signature:



Name: Assst. Prof. Dr. Mustafa Abbas Fadhel

Head of Department

Date: 19/2/2026

Signature:



Name: Prof. Dr. Arshad Naji Hussein

Vice Dean for Scientific Affairs

Date: 19/2/2026

The file is checked by: Assst. Lec. Nebras Musafir Shaker

Quality Assurance and Performance Evaluation Unit

Director of the Quality Assurance and Performance Evaluation Unit:

Date: 19/2/2026

Signature:



Approval of the Dean

Prof. Dr. Taisir Abdulelah Kadhim

Date: 19/2/2026

1. Program Vision

The Department of Mathematics aspires to gain global recognition in the fields of scientific research and teaching by achieving academic quality, as well as local recognition in the field of supplying the labor market with highly qualified scientific personnel.

2. Program Mission

Raising the efficiency of mathematicians and mathematical sciences in society, supporting various science specializations with high-level graduates to effectively contribute to the scientific renaissance, and developing ways that would build qualified athletes at the highest level in teaching and training to contribute to raising the level of mathematical thought among trainees.

3. Program Objectives

1. Providing students with the knowledge and learning of modern principles and methods in the study of mathematics.
2. Introducing students to the importance of mathematics.
3. Graduating an elite group of students who have the ability to continue graduate studies to support higher education in the future.

4. Program Accreditation

Does the program have program accreditation? And from which agency?

No, the program has program accreditation from the National Council for Accreditation of Programs of Colleges of the Educational Group.

5. Other external influences

Is there a sponsor for the program?

Ministry of Higher Education and Scientific Research, Scientific Supervision and Scientific Evaluation Apparatus, Directorate of Quality Assurance and Academic Accreditation, Accreditation Department.

6. Program Structure

Program Structure	Number of	Credit hours	Percentage	Reviews*
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	Courses			
Institution Requirements	١٠	٢٠	%١٢	
College Requirements	٨	٣٢	%٢٠	
Department Requirements	٢٠	١١٣	%٦٨	
Summer Training	–	–		
Other				

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

7. Program Description				
First Year				
Course Name	Course Code	Credit Hours		Units
		Theoretical	Practical	
Calculus	Math100	3	2	8
Foundations of Mathematics	Math101	2	2	6
Linear Algebra	Math102	2	2	6
General Physics	Math103	2	-	4
Computer Science	UREQ101	-	2	2
Principles of Education	CREQ100	1	-	2
Developmental and Educational Psychology	CREQ101	2	-	4
Arabic Language	UREQ104	1	-	2
English Language	UREQ102	1	-	2
Human rights and democracy	UREQ103	1	-	2
Total		15	8	38
Second Year				
Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	
Advanced Calculus	Math200	3	2	8
Group Theory	Math201	3	-	6
Ordinary Differential Equations	Math٢02	2	2	6
Geometry and Axiomatic Systems	Math٢03	3	-	6

Computer Sciences	UREQ201	-	2	2
Curricula and textbooks	CREQ201	1	2	4
Educational leadership and management	CREQ202	2	-	4
Arabic Language	UREQ204	1	-	2
English Language	UREQ202	1	-	2
Teaching thinking	CREQ203	1	-	-
Crimes of the baath regime in iraq	UREQ203	1	-	2
Total		18	8	42

Third year

Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	
Mathematical Analysis	Math300	2	2	6
Numerical Analysis	Math3.1	2	2	6
Probability	Math3.2	2	2	6
Rings	Math3.3	2	2	6
Partial Differential Equations	Math3.4	2	2	6
Philosophy of Scientific Research	Math3.5	2	-	4
Curricula and Teaching Method	CREQ300	1	2	4
Guidance and mental health	CREQ302	2	-	4
Total		15	12	42

Forth year

Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	
Topology	Math400	2	2	6
Mathematical Statistics	Math401	2	2	6
Complex Analysis	Math402	2	2	6
Approximation theory	Math405	2	2	6
Functional analysis	Math407	2	2	6
Graduation Research Work	Math403	-	2	2
Measuring and Amendment	CREQ401	2	-	4

Professional ethics	MUR402	1	-	2
Practical Teaching	CREQ402	1	2	4
Total		14	14	42

8. Expected learning outcomes of the program

Knowledge	
A1- Enabling the student to gain an understanding of mathematics. A2- Preparing qualified teachers to teach in educational institutions. A3- Preparing a high-quality mathematics teacher.	
Skills	
B1 - That the student acquires the skill of mathematical operations. B2 - That the student acquires skills in methods of proof and thinking. B3 - The student should be able to link the information.	1. The correct scientific thinking method. 2. Discussion method. 3. Daily, monthly and annual tests.
C1- The method of discussion and dialogue between the student and the professor. C2- Conclusion. C3- Mathematical logic.	1. Through daily and monthly tests. 2. Discussions. 3. Practical and applied tests. 4. By reviewing the experiences of different universities.
Ethics	
D1- Utilizing the acquired information. D2- Personal development through reading and updating knowledge. D3- Engaging in the teaching profession. D4- Participation in seminars, conferences and workshops Specialized.	

9. Teaching and Learning Strategies

Theoretical and practical teaching of mathematics sciences, as well as graduation research and others.

10. Evaluation methods

1. Theoretical and practical tests.
2. Discussions.
3. Final exams.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirement s/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof. Qays Hatem Imran	Mathematics	Topology			✓	
Assist. Prof. Dr. Mustafa Abbas Fadil	Mathematics	Numerical Analysis			✓	
Dr. Alya'a Abdulkadhim Sabry	Physics	Nuclear Physics			✓	
Assist. Prof. Dr. Ahmed S. Jbara	Physics	Nanotechnology			✓	
Tech. Amaal kareem olieiw	Mathematics	Statistics			✓	
Tech. Amer Khrija Abed	Mathematics	Topology			✓	
Tech. Shaker Razag Abd alkareem	Computer	Computer			✓	
Tech. Ekram Abd Ali	Mathematics	Dynamical Systems			✓	
Asst. Tech. Ahmed Salam Razzaq	Mathematics	Numerical Analysis			✓	
Asst. Tech. Hadeel Hadi Abo-Alsood	Mathematics	Cryptography			✓	
Tech. Marwa Adnan	Arabic	Methods of Teaching			✓	
Tech. Dr. Sattar Hussein Abed	Physics	Physics			✓	
Asst. Tech. Nibras Mosafr Shakir	History	Methods of Teaching			✓	
Asst. Tech. Sarab Kazim Hassan	Mathematics	Dynamical Systems				✓
Asst. Tech. Shahad Mansoor	Arabic	Arabic				✓
Asst. Tech. Ahlam Adnan Jappar	Arabic	Arabic				✓

Professional Development

Mentoring new faculty members

New faculty members were directed to complete a teaching suitability test and entered training courses and workshops to develop their skills in teaching and scientific research.

Professional development of faculty members

Introducing faculty members into training courses and workshops to develop their skills

in teaching and scientific research.

12. Acceptance Criterion

- 1- Central admission.
- 2- Scientific interview.
- 3- The graduate of the preparatory stage is accepted exclusively in the scientific stream (biology - applied).
- 4- Medical examination.

13. The most important sources of information about the program

- 1- Sources approved by the university (sectoral committee).
- 2- External sources and various books.
- 3- The Internet.

14. Program Development Plan

- 1- Many duties that require external information.
- 2- Many practical applications.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First Year	Math100	Calculus	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math101	Foundations of Mathematics	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math102	Linear Algebra	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math103	General Physics	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ101	Computer Science	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ100	Principles of Education	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ101	Developmental and Educational Psychology	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ104	Arabic Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ102	English Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
UREQ103	Human rights and democracy	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
Second Year	Math200	Advanced Calculus	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math201	Group Theory	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓

	Math∞02	Ordinary Differential Equations	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math∞03	Geometry and Axiomatic Systems	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ201	Computer Sciences	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ201	Curricula and textbooks	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ202	Educational leadership and management	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ204	Arabic Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ202	English Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ203	Teaching thinking	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ203	Crimes of the baath regime in iraq	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
Third year	Math300	Mathematical Analysis	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math∩.∩	Numerical Analysis	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math∩.∩	Probability	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math∩.∩	Rings	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓

	Math3.4	Partial Differential Equations	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math3.5	Philosophy of Scientific Research	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ300	Curricula and Teaching Method	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ302	Guidance and mental health	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
Forth year	Math400	Topology	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math401	Mathematical Statistics	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math402	Complex Analysis	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math405	Approximation theory	optional	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math407	Functional analysis	optional	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math403	Graduation Research Work	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ401	Measuring and Amendment	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	MUR402	Professional ethics	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ402	Practical Teaching	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓

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

1. Course Name:					
Calculus					
2. Course Code:					
Math100					
3. Semester / Year:					
2025-2026					
4. Description Preparation Date:					
1/9/2025					
5. Available Attendance Forms:					
Classroom					
6. Number of Credit Hours :					
(150 hour per year) / Number of Units (8 units)					
7. Course administrator's name (mention all, if more than one name)					
Name: Assist.Lec. Ekram abd ali , Assist.Lec. Hassan Saad Hunaity Email: ekramalimth@mu.edu.iq					
8. Course Objectives					
Course Objectives			<ul style="list-style-type: none"> •Identify the concept of calculus , set and interval define the function and the types of function ,domain and range the graph of the function ,limit ,continuity, derivative integral, method of find the integral, area under graph ,applicaton of integral, polare coordinate. 		
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> -Brainstorming -Feedback at lecture time -Collaboration and feedback series 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	-introduction to sets and interval define the function		<ul style="list-style-type: none"> -Deductive -Induction -Discussion -Using Data Show and 	<ul style="list-style-type: none"> -Oral discussion -Daily exams -Monthly exams

				whiteboard.	-Homework assignments.
2	5	Absolute value and solve inequities		=	=
3	5	Domain and range of the function		=	=
4	5	Types of function		=	=
5	5	Graph of the function		=	=
6	5	Trigonometric functions		=	=
7	5	Hyperbolic and the inverse hyperbolic function		=	=
8	5	Limit definition		=	=
9	5	Methods to solve the limit		=	=
10	5	Continuous definition		=	=
11	5	derivative		=	=
12	5	Derivative of Trigonometric functions		=	=
13	5	Inverse of Trigonometric functions		=	=
14	5	Logarithm function		=	=
15	5	Application of derivative		=	=
16	5	Area under curve		=	=
17	5	Integral		=	=
18	5	Theorem of integral		=	=
19	5	definite integral		=	=
20	5	Properties of integral		=	=
21	5	Fundamental theorem		=	=
22	5	Methods of integral		=	=
23	5	Integral of Trigonometric functions		=	=
24	5	Integral of Logarithm function		=	=
25	5	Integral of Hyperbolic functions		=	=
26	5	Area and volume		=	=
27	5	Polar coordinate		=	=
28	5	Types of polar coordinate		=	=
29	5	Graph of polar coordinate		=	=
30	5	Area of polar coordinate		=	=

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 (40) & (60 final exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	calculus by thomas . . ١
Main references (sources)	التفاضل والتكامل تأليف روجي ابراهيم
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	موقع رياضيات العراق

1. Course Name:					
Fundamental Mathematics					
2. Course Code:					
Math101					
3. Semester / Year:					
Yearly					
4. Description Preparation Date:					
10-9-2025					
5. Available Attendance Forms:					
Weekly					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4/6					
7. Course administrator's name (mention all, if more than one name)					
Name: Amaal Kareem olewi, Assistant Lecturer Ahmed Salam Razaq Email: amal_kareem@mu.edu.iq					
8. Course Objectives					
Course Objectives				Providing students with general information about the basic concepts of fundamental mathematics.	
9. Teaching and Learning Strategies					
Strategy					
10. Course Structure					
Week	Hours	Unit or subject name	Required Learning Outcomes	Learning method	Evaluation method
1	4	Mathematical logic			
2	4	Logical equivalence			

3	4	Algebra of statements			
4	4	Quantifiers			
5	4	Mathematical Proof			
6	4	Algebra of Sets			
7	4	Complement of a set			
8	4	Power Set			
9	4	Relations			
10	4	Domain and range of a relation			
11	4	Composition of relations			
12	4	Types of relations			
13	4	Equivalence classes			
14	4	Partial ordered relations			
15	4	Totally ordered sets			
16	4	Well ordered sets			
17	4	Mappings			
18	4	Types of mappings			
19	4	Composite mappings			
20	4	Inverse mapping			

21	4	Direct images under mapping			
22	4	The inverse images under mapping			
23	4	order preserving mappings and isomorphism			
24	4	Potency of sets			
25	4	Arithmetic on cardinal numbers			
26	4	Ordinal numbers			
27	4	The Natural numbers			
28	4	Arithmetic of the natural numbers			
29	4	Binary Operations and Semi group			
30	4	Groups and Finite groups			

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	أسس الرياضيات الجزئيين الأول والثاني / هادي جابر مصطفى وآخرون / جامعة البصرة – العراق ١٩٨٣،
Main references (sources)	مقدمة في أسس الرياضيات / عادل غسان نعوم وباسل عطا الهاشمي / جامعة بغداد – العراق ، ٢٠٠٠
Recommended books and references (scientific journals, reports...)	-----
Electronic References, Websites	Google Scholar

Course Description Form

1- Course Name:

Linear Algebra

2-Course Code:

Math 102

3-Semester / Year:

2025/2026 Year

4- Description Preparation Date:

10/9/2025

5-Available Attendance Forms:

Classroom

6-Number of Credit Hours :

4 hours per week(120 hour per year) / Number of Units (6 units)

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

Name: Asst. Prof. Dr. Ahmed S. Jbara

Email: ahmedsbhe@mu.edu.iq

8-Course Objectives

Course Objectives

On completion of this course; the student will be able to understand fundamentals and concepts of matrixes and Determinants and then used them to solve systems of linear equations with different methods. Also, in the end of course the student can perform accurate and efficient calculations with vectors, eigenvalues and eigenvectors in arbitrary dimensions. The course includes vectors operations, vector spaces and subspaces.

9-Teaching and Learning Strategies

Strategy

-Brainstorming
-Feedback at lecture time
-Collaboration and feedback series

10-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	- Student's ability to distinguish and understand cognitively to diagnose numerical solutions. - Practice different styles of solutions ways. - Possessing thinking skills.	Matrices (Notation and Definition, Special Types of Matrices)	- Deductive - Induction - Discussion using whiteboard and Data show.	- Oral discussion - Daily exams - Monthly exams - Homework assignments.
2	4	=	Matrices (Matrix Operation)	=	=
3	4	=	Matrices (Properties of Matrix Operations)	=	=
4	4	=	Matrices (Matrix Multiplication)	=	=
5	4	=	Matrices (Properties of Matrix Multiplication)	=	=
6	4	=	Matrices (Matrix Transpose)	=	=
7	4	=	Matrices (Symmetric and Skew-Symmetric Matrices)	=	=
8	4	=	Determinants (Notation and	=	=

Course Description Form

			Definition)		
9	4	=	Determinants (Cofactor Expansion and Applications)	=	=
10	4	=	Determinants (Properties of Determinants)	=	=
11	4	=	Determinants (Inverse of Matrix)	=	=
12	4	=	Determinants (Adjoint Matrix Method)	=	=
13	4	=	Solutions of Linear System of Equations (Gaussian Elimination Method)	=	=
14	4	=	Solutions of Linear System of Equations (Gauss-Jordan methods)	=	=
15	4	=	Solutions of Linear System of Equations (Cramer's rule)	=	=
16	4	=	Vectors and Vector Spaces (Vectors in \mathbf{R}^n , Vectors Operations)	=	=
17	4	=	Vectors and Vector Spaces (The Dot Product of Vectors, Properties of Dot Product)	=	=
18	4	=	Vectors and Vector Spaces (Length and Angle Measures, Principle of Unit Vectors in \mathbf{R}^n)	=	=
19	4	=	Vectors and Vector Spaces (The Cross Product in \mathbf{R}^n)	=	=
20	4	=	Vectors and Vector Spaces (Planes and Lines in \mathbf{R}^3)	=	=
21	4	=	Vectors and Vector Spaces (Real Vector Spaces, Real Vector Subspaces)	=	=
22	4	=	Vectors and Vector Spaces (Linear Independence)	=	=
23	4	=	Vectors and Vector Spaces (Basis and Dimension)	=	=
24	4	=	Vectors and Vector Spaces (Homogenous System)	=	=
25	4	=	Vectors and Vector Spaces (The Rank of a Matrix and its Application)	=	=
26	4	=	Diagonalization (Eigenvalues and Eigenvectors)	=	=
27	4	=	Diagonalization (Eigenvectors and Linear Transformations)	=	=
28	4	=	Diagonalization (Complex Eigenvalues)	=	=
29	4	=	Diagonalization (Diagonalization of a Matrix with Distinct Eigenvalues)	=	=
30	4	=	Diagonalization (Diagonalization of a Matrix with Repeated Eigenvalues)	=	=

11–Course Evaluation

Course Description Form

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 (40) & (60 final exam)

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	الجبر الخطي، تأليف الدكتور نزار حمدون شكر و يحيى عبدسعيد.
Main references (sources)	1. Hefferon, J., 2020. <i>Linear algebra</i> , fourth edition.
Recommended books and references (scientific journals, reports...)	2. Lay, D.C., Lay, S.R. and McDonald, J.J., 2016. <i>Linear algebra and its applications</i> . Pearson. 3. Blyth, T.S. and Robertson, E.F., 2002. <i>Basic linear algebra</i> . Springer Science & Business Media.
Electronic References, Websites	https://www.pdfdrive.com/

Course Description Form

1- Course Name:					
General Physics					
2- Course Code:					
MATH103					
3- Semester / Year:					
Yearly 2025-2026					
4- Description Preparation Date:					
2-10-2025					
5- Available Attendance Forms:					
Weekly					
6- Number of Credit Hours (Total) / Number of Units (Total)					
60 hours distributed over 30 weeks, at a rate of 2 hours per week / 4 credit units					
7- Course administrator's name (mention all, if more than one name)					
Name: Safa Hassan Mohammed					
Email: safa.hassan.1997@mu.edu.iq					
8- Course Objectives					
Course Objectives		<p>The main objectives of this course are:</p> <ul style="list-style-type: none"> • To introduce students to the fundamental principles of mechanics and properties of matter. • To enable students to solve physics-related problems systematically. • To derive and interpret physical equations based on Newton's laws. • To distinguish between different types of friction and the factors affecting them. • To apply the laws of work, energy, and torque correctly. • To define elasticity, stress, and strain, and derive the mathematical relationships among them. 			
9- Teaching and Learning Strategies					
Strategy		<p>A. Knowledge and Understanding:</p> <p>A1. Recall given information and laws in the course. A2. Understand the theoretical and mathematical aspects of the topics. A3. Apply learned concepts to problem-solving. A4. Analyze problems, organize data, and utilize it effectively to reach results. A5. Formulate and solve new problems related to the course topics. A6. Develop conceptual understanding and identify suitable laws for solving problems.</p> <p>B. Subject-Specific Skills:</p> <p>B1. Demonstrate mathematical proofs relevant to course topics. B2. Use appropriate laws and formulas for each problem. B3. Establish conceptual connections among related course topics.</p> <p>C. Cognitive and Thinking Skills:</p> <p>C1. Exhibit active interest in the material presented by the instructor. C2. Appreciate the scientific importance of the studied material. C3. Organize given data logically to solve physics problems. C4. Discuss, justify, and propose alternative solutions to physical problems.</p>			
10-course Structure					
Weeks	Hours	Intended Learning	Unit / Topic	Teaching Method	Assessment Method

Course Description Form

		Outcomes			
1–4	8	Acquire knowledge and distinguish between physical quantities	Scalar and Vector Quantities	Lecture	Daily activity and test
5–6	4	Understand Newton's Laws of Motion	Motion and Newton's Laws (I–III)	Lecture	Daily activity and test
7–10	8	Apply Newton's Second Law	Newton's Second Law	Lecture	Daily activity and test
11–12	2	Define friction and differentiate its types	Frictional Force	Lecture	Daily activity and test
13–16	8	Understand impulse, momentum, and collision types	Impulse and Momentum	Lecture	Daily activity and test
17–20	8	Comprehend work and energy and their interrelation	Work and Energy	Lecture	Daily activity and test
21–26	12	Study torque, levers, and types of levers	Torque and Levers	Lecture	Daily activity and test
27–30	8	Define stress, strain, and modulus of elasticity	Elastic Moduli	Lecture	Daily activity and test

Course Description Form

Course Name .١				
:* Arabic Language*				
Course code .٢				
٢٠٢٦-semester -year .٣				
2026-2025/ Annual				
Date of preparation: .٤				
2-9-2025				
vailable Attendance Forms:* Classroom and Electronic .٥ Lectures				
Weekly				
Total Study Hours / Total Units .٦				
:* 2hour / 2unit				
Course Instructor .٧				
Noor Al-Huda Mohammed Jariou nooralhuda.mhmd@mu.edu.iq :Email:*				
Course Objectives: .٨				
Course Objectives:				
Integrated approach to Teaching and Learning Strategies .٩ teaching Arabic language				
-Introduce non-specialist university students to correct writing rules -Analyze general texts - Advanced writing mechanisms and style				Teaching and Learning Strategies
Course Structure .١٠				
Notes	Practical Material	Theoretical Material	Hours	Week
		What is Language	٢	١
		Theories of Language Origin	٢	٢
		Arabic Language Among World Languages	٢	٣
		Arabic Language and Arabization	٢	٤
		Arabic Language and Globalization	٢	٥
		Rules of Correct Writing	٢	٦
		Rules of Writing Hamza	٢	٧
		Hamza of Cutting and Connection	٢	٨
		Hamza of Cutting and	٢	٩

Course Description Form

		Connection		
		Writing of Ta	٢	١٠
		Writing of Ta	٢	١١
		Number and Counted	٢	١٢
		Number and Counted	٢	١٣
		Number and Counted	٢	١٤
		ض and ظ	٢	١٥
		ض and ظ	٢	١٦
		Quranic Text for Memorization	٢	١٧
		Quranic Text for Memorization	٢	١٨
		Quranic Text for Memorization	٢	١٩
		Introduction to Quran Interpretation	٢	٢٠
		Introduction to Quran Interpretation	٢	٢١
		Introduction to Arabic Literature	٢	٢٢
		Introduction to Arabic Literature	٢	٢٣
		Islam and Literature	٢	٢٤
		Islam and Literature	٢	٢٥
		Poets of Islamic Era	٢	٢٦
		Arabic Literature in Umayyad Era	٢	٢٧
		Farazdaq's Poem in Praise of Zayn al-Abidin	٢	٢٨
		Literature in Abbasid Era	٢	٢٩
		Examples of Abbasid Poetry	٢	٣٠
Course Evaluation .١١				
Learning and Teaching Resources:* .١٢				
	University Arabic for Non-Specialists			
	Arabic for Non-Native Speakers			
	Arabic Literature Through the Ages			

Course Description Form

Course Description Form

13. Course Name:					
Educational Psychology					
14. Course Code:					
CREQ 104					
15. Semester / Year:					
2025-2026					
16. Description Preparation Date:					
21/1/2025					
17. Available Attendance Forms:					
Came					
18. Number of Credit Hours (Total) / Number of Units (Total)					
2 hours per week / 4 units					
19. Course administrator's name (mention all, if more than one name)					
Name: shahad mansoor majeed Email: shahad.mansoor@mu.edu.iq					
20. Course Objectives					
Course objectives: Introducing students to educational psychology and preparing them to deal with learners in the educational environment.			<ul style="list-style-type: none"> ● Introducing students to educational psychology ● Introducing them to motivation ● Introducing them to feedback ● Introducing them to learning styles 		
21. Teaching and Learning Strategies					
Strategy		Discussion method, group participation, student self-activity by collecting information about the material and presenting it in the classroom			
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30 weeks	Two hours	Knowing education	Fundamentals Educational	Delivering dialogue and	Evaluation questions

Course Description Form

		psycholog concept a terminolo	Psychology	discussio	
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23. 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

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	no
Main references (sources)	Educational Psychology - Ahmed Z. Saleh
Recommended books and references (scientific journals, reports...)	No
Electronic References, Websites	Websites related to education sciences and their foundations

	Theoretical material
Week: One	Fundamentals of Educational Psychology
Week: two	Factors affecting the effectiveness of the educational process
Week: Three	Motivation
Week: Four	Memory and Recall
Week: Five	Factors that affect memory
Week: Six	First month exam
Week: Seven	Forgetting
Week: Eight	Transfer of learning
Week: Nine	Theories of Learning Transfer Effect
Week: Ten	Feedback
Week: Eleventh	Dimensions of feedback
Week: Twelve	Learning
Week: Thirteenth	Learning and language

Course Description Form

	acquisition
Week: Fourteenth	Learning and acquiring motor skills
Week: Fifteenth	Learning Theories
Week: Sixteenth	First Semester Exam
Week: Seventeenth	Learning Theories
Week: Eighteenth	Bruner's stages of cognitive development
Week: Nineteenth	Learning styles in Ausubel's theory
Week: Twenty	The basic concepts in Ausubel's theory
Week: Twenty-one	Cognitive structure
Week: Twenty-two	Exam
Week: Twenty-third	Learning curves
Week: Twenty-fourth	Types of Learning Curves
Week: Twenty-fifth	Discussion of reports
Week: Twenty-sixth	Discussion of reports
Week: Twenty-seventh	Reports Discussion
Week: Twenty-eighth	Discussion of reports
The twenty-ninth week	Discussion of reports
Week: Thirty	Discussion of reports

Course Description Form

1. Course Name:	Computer
2. Course Code:	UREQ ١٠٣
3. Semester / Year:	202٥-202٦ / first stage
4. Description Preparation Date:	202٦
5. Available Attendance Forms	: 2 hours per week
6. Number of Credit Hours (Total) / Number of Units (Total):	6٠ hours /3 unit
7. Course administrator's name (mention all, if more than one name)	Name:shker razag abdul kareem Email:shakirmuthana@mu.edu.iq

Course Description Form

8. Course Objectives

Course Objectives

- To effectively use computers and understand operating systems, file management, and folder organization.
- To use Microsoft Office programs such as Word, Excel, and PowerPoint.
- To navigate the internet, search for information and communicate through email and web pages.

9. Teaching and Learning Strategies

Strategy

- **Direct Instruction:** Involves the teacher providing guidance, transferring knowledge and concepts, presenting information clearly, and guiding discussions and learning activities.
- **Blended Learning:** Aims to integrate traditional and electronic elements in the learning process. Modern technology and electronic tools are used alongside traditional methods such as face-to-face lessons and printed books.
- **Collaboration and Interaction:** Encourages collaboration between learners and between the teacher and students, including group work, discussions, and interactive learning.
- **Active Learning:** Encourages students to actively participate in the learning process, including engaging in hands-on activities and practical application of concepts.
- **Problem-Based Learning:** Focuses on solving real problems and challenges that students face. This includes problem analysis and application of strategies to solve them.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Introduction to Computer: Concepts of Hardware and Software with their components.	Computer Basics.	Theoretical	Daily quizzes + Questions and Answers
Second	2	Introduction to Computer (Cont.): Concept of Computing, Data and Information; Applications of Information Connecting input/output devices, and peripherals to CPU.	Computer Basics.	Theoretical	Daily quizzes.
Third	2	Computer Components: Computer Portions, Hardware Parts, I/O Units.	.	Theoretical	Daily quizzes + Questions and Answers
Fourth	2	Computer Components (Cont.): Memory Types: Volatile and Non-Volatile Memory, Secondary Storage.	=====	Theoretical	Daily quizzes + Questions and Answers
Fifth	2	Computer Components (Cont.): CPU Components: Control Unit (CU), Arithmetic Logic Unit (ALU) and Registers.	=====	Theoretical	Daily quizzes + Questions and Answers

Course Description Form

Sixth	2	Computer Components (Cont.): Computer Ports, Personal Computer (Features and Types).	=====	Theoretical	Questions and Answers
Seventh	2	Operating System and Graphical User Interface GUI: Operating System; Basics of Common Operating Systems; The User Interface, Using Mouse Techniques.	=====	Theoretical & practical	Questions and Answers
Eighth	2	Operating System and Graphical User Interface GUI (Cont.): Use of Common Icons, Status Bar, Using Menu and Menu-selection.	=====	Theoretical & practical	Daily quizzes + Questions and Answers
Ninth	2	Operating System and Graphical User Interface GUI (Cont.): Concept of Folders and Directories, Opening and closing of different Windows; Creating Short cuts.	=====	Theoretical & practical	Daily quizzes + Questions and Answers
Tenth	2	Operating System and Graphical User Interface GUI (Cont.): Customization and Personalization of GUIs, Accessibility Features in GUIs, User Experience (UX).	=====	Theoretical & practical	Questions and Answers
Eleventh	2	Word Processing: Word Processing Basics; Basic Features of Word Processors, Opening and Closing of documents.	Word	Theoretical & practical	Daily quizzes + Questions and Answers
Twelfth	2	Word Processing (Cont.): Text creation and Manipulation; Formatting Text and Paragraphs, Using Templates for Document Creation.	=====	Theoretical & practical	Daily quizzes.
Thirteenth	2	Word Processing (Cont.): Creating and Managing Tables, Utilizing Styles and Themes.	=====	Theoretical & practical	Daily quizzes + Questions and Answers
Fourteenth	2	Word Processing (Cont.): Spell Check and Grammar Tools, Using Headers and Footers.	=====	Theoretical & practical	
Fifteenth	2	Spread Sheet: Introduction to Spreadsheet Software, Creating and Formatting Worksheets.	Excel	Theoretical & practical	Daily quizzes + Questions and Answers
Sixteenth	2	Spread Sheet (Cont.): Sorting and Filtering Data, Using Formulas and Functions	=====	Theoretical & practical	Daily quizzes + Questions and Answers
Seventeenth		Spread Sheet (Cont.): Using Formulas and Functions, Using Pivot Tables for Data Analysis.	=====	Theoretical & practical	
Eighteenth	2	Spread Sheet (Cont.): Data Validation and Error Checking, Data Visualization: Creating Charts and Graphs.	=====	Theoretical & practical	Daily quizzes + Questions and Answers
Nineteenth	2	Presentation Software: Introduction to Presentation Software, Overview of Popular Presentation Tools, Creating a New Presentation.	PowerPoint	Theoretical & practical	Daily quizzes + Questions and Answers
Twentieth	2	Presentation Software (Cont.): Using Templates and Themes, Inserting and Formatting Text and Images, Transition and Animation Effects.	=====	Theoretical & practical	Daily quizzes + Questions and Answers
Twenty-first	2	Presentation Software (Cont.): Using Speaker Notes and Timers, Advanced Features: Hyperlinks and Action Buttons.	=====	Theoretical & practical	Daily quizzes + Questions and Answers

Course Description Form

Twenty-second	2	Presentation Software (Cont.): Troubleshooting Common Presentation Issues, Future Trends in Presentation Technology	=====	Theoretical & practical	Daily quizzes + Questions and answers
Twenty-third	2	Introduction to Internet and Web Browsers: Computer networks Basic; LAN, WAN.	Internet and Web Browsers	Theoretical & practical	Daily quizzes + Questions and answers
Twenty-fourth	2	Introduction to Internet and Web Browsers (Cont.): Concept of Internet and its Applications; connecting to internet.	=====	Theoretical & practical	Daily quizzes + Practical skills.
Twenty-fifth	2	Introduction to Internet and Web Browsers (Cont.): World Wide Web; Web Browsing software's, Search Engines.	=====	Theoretical & practical	Daily quizzes + Questions and answers
Twenty-sixth	2	Introduction to Internet and Web Browsers (Cont.): Understanding URL; Domain name; IP Address.	=====	Theoretical & practical	Daily quizzes + Questions and answers
Twenty-seventh	2	Communications and Emails: Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using Emails; Document collaboration.	Communications and Emails	Theoretical & practical	Daily quizzes + Questions and answers
Twenty-eighth	2	Communications and Emails (Cont.): Sending and receiving emails; Accessing sent emails; Using Emails; Document collaboration.	=====	Theoretical & practical	Daily quizzes + Questions and answers
Twenty-ninth	2	Introduction to Cloud Computing and Services: Definition of Cloud Computing and its concept, Cloud-Based Office Suites (Office 365 and Google Workspace).	=====	Theoretical & practical	Daily quizzes + Practical skills.
Thirtieth	2	Introduction to Cloud Computing and Services (Cont.): Google Workspace; Google Docs, Google Sheets, Google Drive, Google Meet.	=====	Theoretical & practical	Daily quizzes + Questions and answers

11. Course Evaluation

- Monthly tests for academic subjects.
- Daily tests with multiple-choice questions for academic subjects.
- Oral assessment through engaging students in discussions.
- Practical exams.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	<ul style="list-style-type: none"> - 2016 أساسيات الحاسوب، الخضر علي الخضر بحث - مدخل إلى عالم الذكاء الاصطناعي، الدكتور عادل عبدالنور
Main references (sources)	Minister Of Higher Education and Scientific Research
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	<ul style="list-style-type: none"> - Graham Brown, David Watson, "Cambridge IGSE Information and Communication Technology", (2020) - Alan Evans, Kendall Martin, Mary Anne Poatsy "Technology In Action Complete", الطبعة السادسة عشر، (2024) - Ahmed Banafa, "Introduction to Artificial Intelligence", الطبعة الأولى (2024) - Microsoft Office 2019 Step by Step بواسطة Frye & Joan Lambert

Course Description Form

Strategy	Teaching and Learning Strategies: 1. Face-to-face lectures. 2. Discussion method. 3. Recorded video lectures on the department's YouTube channel 4. Online classroom (Google Classroom).
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1. Course Structure

Week	Hours	Required Outcomes	Learning	Unit or subject name	Learning method	Evaluation method
1–2	1	conversation		Greetings – Verbs	Student learning Performing actions accurately	Oral exam
3–4	1	Dialogue and discussion		Country Names – Flags	Student learning Names of countries and their landmarks	Oral exam
5–6	1	conversation		Objects Around Us	Actions – negation and affirmation	Writing and dialogue
7–8	1	conversation		Family and Friends	Pronouns and how to refer to them	Oral and written exam
9–10	1	conversation		Favorite Method	Food, drink, and sport	Oral and written exam
11–12	1	conversation		Daily Life	Time, place and numbers	Oral and written exam
13–14	1	Dialogue and discussion		Adjectives	Question words and adjective	Oral and written exam
15–16	1	Matching picture to word		Housing and Living Place	Rooms, furniture, and places	Oral and written exam
17–18	1	conversation		Past Tense	Years, months, and days	Oral and written exam
19–20	1	conversation		Free Time / Work	Sports and shopping	Oral and written exam
21–22	1	conversation		Weeks 21–22: Workplace	Negation and affirmation	Oral and written exam
23–24	1	conversation		Wishes and Thinking	Preferring one action over another	Oral and written exam
25–26	1	conversation		Here and Now	Linking colors to clothing	Oral and written exam
27–28	1	Dialogue and discussion		When the Time is Right	The future, grammar vocabulary and “it is time to go”	Oral and written exam
29–30	1	conversation		Units and Their Discussion	Units and their discussion	Oral and written exam

22. Course Evaluation

- Mid-year grade (40 marks):
 - * Monthly oral and written exams: 30 marks
 - * Daily quizzes: 5 marks
 - * Attendance and participation: 5 marks
- Final exam grade: 60 marks
- Total: 100 marks

23. Learning and Teaching Resources

Required textbooks (curricular books, if any)	New Headway Plus / Beginner Student's Book + Workbook
Main references (sources)	Oxford English Dictionary The Urban Dictionary https://www.oxfordlearnersdictionaries.com/

Course Description Form

	https://dictionary.cambridge.org/dictionary/english/treasure
Electronic References, Websites	Online English dictionaries and learning websites https://www.theguardian.com/books/2016/dec/14/top-10-dictionaries https://www.dictionary.com/browse/treasure https://www.oxfordlearnersdictionaries.com/definition/english/treasure_1

Course Description Form

25. Course Name:

Curricula and textbook

26. Course Code:

CREQ100

27. Semester / Year:

Yearly 2025-2026

28. Description Preparation Date:

12-9-2025

29. Available Attendance Forms:

Weekly

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

3 hours per week / 4 units

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

Name ; Nibras Musafir Shaker

Email: nibrasmosafr@mu.edu.iq

32. Course Objectives

Course Objectives

The main objectives of this course are:

- Introducing students to the old and new curriculum ..
- Introducing students to preparing annual, monthly, and daily lesson plans and how to implement them within the classroom .
- Introducing students to important teaching terms, including style, method, and strategy.
- Students' knowledge of educational and behavioral goals
- Introducing students to the concept of classroom management and how to control it
- Introducing students to the concept of educational tools, their foundations and principles .

33. Teaching and Learning Strategies

Strategy

- 1- One of the modern strategies includes two main aspects: the teacher aspect, which includes teaching, and the learner aspect, which includes learning .
- 2- Keeping students informed of all new developments related to the modern Curriculum .
- 3- Training learners to use strategies in order to apply them correctly .

1. Course Structure

Weeks	Hours	Intended Learning Outcomes	Unit / Topic	Teaching Method	Assessment Method
1	3	Knowledge of modern teaching methodologies.	General concepts of curriculum and textbooks	Lecture	Daily activity and test
2	3	Knowledge of teaching methods and approaches, and the difference between them.	The old curriculum and the modern curriculum, and a comparison between them in terms of concept, nature of the subject matter, teaching method, and the roles of the teacher and the learner	Dialogue and discussion	Daily activity and test

Course Description Form

3	3	Understanding the foundations of the curriculum.	Educational and behavioral goals	Cooperative learning method	Assessment questions
4	3	- Preparing students to write annual, monthly, and daily lesson plans.	Annual and monthly plan		Daily activity and test
5		Understanding the types of assessment and their uses in the educational process.	Daily plan and cognitive, emotional, and skill levels		Daily activity and test
6		- Understanding the content, foundations, steps, and organization of the curriculum.	Foundations of Curriculum Development: The Philosophical Foundation and The Psychological Foundation		Daily activity and test
7			Types of Curricula: Separate Subjects Curriculum and Integrated Subjects Curriculum		Daily activity and test
8			Activity-based approach, broad fields approach, and pivotal approach		Daily activity and test
9			Curriculum building blocks - objectives		
10			First month exam		
11			Curriculum building blocks - content, experiences, and activities		
12			Curriculum evaluation and development		
13			The textbook and its characteristics		
14			Textbook evaluation and content analysis		
15			A general review of all the above vocabulary		
16			Second month exam		

Course Description Form

17			The concept of curriculum content and the language of its writing		
18			Steps and principles for selecting content		
19			Curriculum content organizations		
20			Curriculum strategies		
21			The concept of teaching methods and the reasons for the diversity of teaching methods		
22			Teaching methods and strategies		
23			The method of lecturing, discussion, and inquiry-based dialogue		
24			Problem-solving methods, cooperative learning, and the exploratory method		
25			First month exam		
26			Educational technologies and their types		
27			Educational tools and their types		
28			Classroom questions, their types, and the skills needed to formulate them.		
29			Practical applications		
30			Second month exam		

2. Course Evaluation

The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, and written exams, reports, etc. 1. First Monthly Exam: 10 marks 2. Weekly Written Reports: 2 marks each 3. Enhancing the Role of Practical Training in the Classroom (Delivering a Lesson and Writing a Plan): 1 mark each 4. Second Monthly or Mid-Year Exam: 15 marks 5. Third Monthly Exam: 10 marks Final Exam: 60 marks

3. Learning and Teaching Resources

Main references (sources)	Curriculum Development Strategies and Modern Teaching Methods (by Dr. Majed Ayoub Al-Qaisi) Curricula and textbooks by Dr. Raed Ramthan Hussein Al-Tamimi
Recommended books and references (scientific journals, reports...)	Summaries and lectures related to the university curriculum for second-year students in the subject of

Course Description Form

	curricula and textbooks.
Electronic References, Websites	Accessing curriculum-related books and textbooks available on social media platforms

Course name: Principles of Education .٢٤	
codeThe decision: CREQ 101 .٢٥	
the chapter /Year: Semester 2024–2025 .٢٦	
Date of preparation of this Description: 19/1/2025 .٢٧	
AAvailable attendance forms: In-person lectures in classrooms. .٢٨	
Number of study hours (total) / Number of units (total) 1 hour per week / 1 .٢٩ unit	
Course Instructor Name (If more than one name is mentioned) .٤٠	
Name: kadim abbas gatie	Email: kadim.abbas@mu.edu.iq
Goals The decision .٤١	
<p>Preparing the student to know the concept of education and its objectives.</p> <p style="text-align: center;">Its functions and characteristics.</p> <p>*Introducing the student to the historical roots of education.</p> <p>Student's knowledge of economic, social and scientific foundations</p> <p style="text-align: center;">For education.</p> <p>*The student's knowledge of the child's life in Islamic law.</p>	<p>Is The material Academic/Providing the student with knowledge about the basics of education and its relationship to the general foundations of life.</p>
Strategies education And learning .٤٢	
<p>modern teaching strategies and methods including: Methods Teaching and learning for development</p> <p>student motivation to learn and instill a spirit of competition to achieve the desired educational goals.</p>	<p>AFor strategy</p>

Course Description Form

Course structure . : ٣					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	W a t c h e s	The week
- Questions Calendar. Assignment Students By writing Reports on Foundations of Education	Creditation road - Discussion Active - Storm Mental	Clarification Goals The material/ concept of education and its importance. Characteristics and - functions of education. Historical growth of - education (education primitive -Chinese-Greek-Egyptian- nic - Media of Arab Thought and Media Greek thought). al basis (educational - role) the family - the educational role of the school-Foundations cational cooperation between family and school). omic basis (the - difference between cation and development- Motives for spending on cation - Social and Economic Development elopment means-Economic return on education cation financing-Primary sources To finance education) ntific basis (concept of - science) objectives - the importance of scientific education - the method ntific and its foundations and aracteristics of scientific research	Knowing the term education And education Historical foundations of education social basis Economic basis Scientific basis The role of the child in Sharia Islamic	3	The week 1 The week 2 The week 3 The week 4 The week 5 The week 6 The week 7 The week 8 The week 9 The week 10 Week 11 Week 12 Week 13 Week 14 Week 15 The week 16 The week 17 18 19 20

Course Description Form

		<p>difficulties of the scientific method in the social sciences.</p> <p>determinants of the scientific method in the social sciences.</p> <p>children's rights in Islamic law</p> <p>How did the Messenger, peace upon him, deal with people in his time?</p> <p>Child-Islam and Child Education - Rights</p> <p>Child in education-Principles of parenting</p> <p>The child in Islamic law.</p> <p>role of the family and the university in reducing negative phenomena in society (drug phenomenon)</p>		
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Course Evaluation . ٤ ٤

distribution Degree from **100** According to Tasks The person in charge With it The student like preparation Daily And tests

Daily Oral and exams Monthly and editorial and reports....etc

Exam of the month the first/ 10 degrees. -١

Reports weekly/ 2 degrees. -٢

Attendance / 3 marks. -٣

Second month exam / 15 points. -٤

Third month exam/ 10 points. -٥

Final exam / 60 marks. -٦

sources Learning And teaching . ٤ ٥

nothing	Books The reporter Required (methodology that I found)
Innovations in the Fundamentals of Education / Dr. Qasim Ali Qahwan	the reviewer President (Sources)
Family and Child Rearing / Hoda Mahmoud Al-Nashef	Books References check that Recommended With it (Magazines Scientific, Reports....
Locations that There is In it Lectures that Related In education Modern.	the reviewer Electronic , Sites The Internet

Course Description Form

1-Course Name:

Computer ۲

2-Course Code:

UREQ 201

3-Semester / Year:

Course Description Form

2025-2026/ second stage

4-Description Preparation Date:

2025-2026

5-Available Attendance Forms

2 hours per week

6-Number of Credit Hours (Total) / Number of Units (Total):

60 hours

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

Name: Safa Hassan Mohammed

Email: safa.hassan.1997@mu.edu.iq

8-Course Objectives

Course Objectives

- Enable students to understand the fundamentals of networking, e-commerce, and computer troubleshooting, enhancing their technical and practical skills.
- Introduce students to the concepts, evolution, and applications of Artificial Intelligence in various scientific and practical fields.
- Develop students' awareness of the impact of Artificial Intelligence on society, the labor market, and the associated ethical challenges.
- Prepare students to anticipate the future of Artificial Intelligence and utilize it effectively and responsibly in serving sustainable development.

9-Teaching and Learning Strategies

Strategy

- **Direct Instruction:** Involves the teacher providing guidance, transferring knowledge and concepts, presenting information clearly, and guiding discussions and learning activities.
- **Blended Learning:** Aims to integrate traditional and electronic elements in the learning process. Modern technology and electronic tools are used alongside traditional methods such as face-to-face lessons and printed books.
- **Collaboration and Interaction:** Encourages collaboration between learners and between the teacher and students, including group work, discussions, and interactive learning.
- **Active Learning:** Encourages students to actively participate in the learning process, including engaging in hands-on activities and practical application of concepts.
- **Problem-Based Learning:** Focuses on solving real problems and challenges that students face. This includes problem analysis and application of strategies to solve them.

10-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Security and Networks: What is a network? Types of networks. Basic network components.	Security and Networks	Theoretical & practical	Daily Tests + Questions and Answers
Second	2	Security and Networks (continued): Basic network components.	=====	Theoretical & practical	Daily Tests + Questions and Answers
Third	2	Security and Networks (continued):	=====	Theoretical &	Daily Tests + Practical Task

Course Description Form

		Basics of network security. Understanding network threats. Network troubleshooting.		practical	Evaluation	
Fourth	2	Security and Networks (continued): Introduction to network troubleshooting, common network problems and symptoms, network troubleshooting tools and utilities.	=====	Theoretical & practical	Daily Tests + Questions and Answers	
Fifth	2	Security and Networks (continued): Using command-line tools for diagnostics, identifying and resolving connectivity issues, diagnosing network performance issues.	=====	Theoretical & practical	Daily Tests + Practical Skills	
Sixth	2	E-commerce: Concepts of electronic banking including online banking: ATM services and debit cards.	E-commerce	Theoretical & practical	Daily Tests + Questions and Answers	
Seventh	2	E-commerce (continued): Phone banking, SMS banking, e-alerts, mobile banking.	=====	Theoretical & practical	Daily Tests + Practical Skills	
Eighth	2	Computer Troubleshooting: Introduction to computer troubleshooting, common hardware problems and solutions, diagnosing software issues.	Computer Troubleshooting	Theoretical & practical	Daily Tests + Practical Evaluation	
Ninth	2	Computer Troubleshooting (continued): Hardware components: diagnostics and repair, using safe mode for troubleshooting.	=====	Theoretical & practical	Daily Tests + Questions and Answers	
Tenth	2	Computer Troubleshooting (continued): Troubleshooting operating system issues, identifying and resolving blue screen errors, dealing with slow computer performance.	=====	Theoretical & practical	Daily Tests + Questions and Answers	
Eleventh	2	Computer Troubleshooting (Cont.): Virus and Malware Removal Techniques, Updating Drivers and Software.	=====	Theoretical & practical	Daily Tests + Practical Skills	
Twelfth	2	Introduction to AI: Definition of AI, History of AI, AI Techniques and Approaches.	AI	Theoretical & practical	Daily Tests + Questions and Answers	
Thirteenth	2	Introduction to AI (Cont.): Key Characteristics of AI, Benefits of AI, Challenges and Ethical considerations.	=====	Theoretical & practical	Daily Tests + Practical Evaluation	
Fourteenth	2	Introduction to AI (Cont.): Challenges and Limitations of AI, The Role of Data in AI Systems.	=====	Theoretical & practical	Daily Tests + Questions and Answers	
Fifteenth	2	Introduction to AI (Cont.): AI Tools and Frameworks.	=====	Theoretical & practical	Daily Tests + Questions and Answers	
Sixteenth	2	The Role of AI in Modern Smartphones: AI-Driven Mobile Technologies, Virtual Assistants (Siri, Google Assistant, Alexa).	=====	Theoretical & practical	Daily Tests + Practical Skills	
Seventeenth	2	The Role of AI in Modern Smartphones (Cont.): Adaptive Learning, Real-Time Translation Services.	=====	Theoretical & practical		
Eighteenth	2	The Role of AI in Modern Smartphones (Cont.): The Future of AI in Smartphone Technology, Challenges of Implementing AI in Mobile Devices.	=====	Theoretical & practical	Daily tests + Questions and Answers	
Nineteenth	2	Applications and Tools of AI: Overview of AI Applications in Various Industries, Education and	=====	Theoretical & practical	Daily tests + Questions and Answers	

Course Description Form

		Healthcare.				
Twentieth	2	Applications and Tools of AI (Cont.): Transportation and Advertising.	=====	Theoretical & practical	Daily tests + Oral Questions and Answers	
Twenty-first	2	Applications and Tools of AI (Cont.): Finance, Robotics and Automation Technologies.	=====	Theoretical & practical	Daily tests + Questions Answers	
Twenty-second	2	Applications and Tools of AI (Cont.): AI in Marketing: Targeting and Personalization.	=====	Theoretical & practical	Daily tests + Oral Questions and Answers	
Twenty-third	2	Applications and Tools of AI (Cont.): AI in Image and Video Analysis, Smart Cities.	=====	Theoretical & practical	Daily tests + Practical	Skills
Twenty-fourth	2	Applications and Tools of AI (Cont.): Future Trends in AI Applications and Tools.	=====	Theoretical & practical	Daily tests + Questions Answers	
Twenty-fifth	2	AI and Society: Introduction to AI and Its Societal Impact, The Role of AI in Enhancing Public Safety.	=====	Theoretical & practical	Daily tests + Oral Questions and Answers	
Twenty-sixth	2	AI and Society (Cont.): Cultural Perspectives on AI Adoption, AI and Governance: Policy Implications	=====	Theoretical & practical	Daily tests + Questions Answers	
Twenty-seventh	2	Ethical Challenges in AI: Introduction to Ethics in AI, Transparency and Explainability of AI Systems, Privacy Concerns in AI Data Usage	=====	Theoretical & practical	Daily tests + Oral Questions and Answers	
Twenty-eighth	2	Ethical Challenges in AI (Cont.): The Ethical Implications of Autonomous Systems, Ethics in AI-Driven Marketing and Advertising	=====	Theoretical & practical	Daily tests + Practical	Skills
Twenty-ninth	2	Ethical Challenges in AI (Cont.): Ethical Considerations in Education, Human Rights and AI Implementation	=====	Theoretical & practical	Daily tests + Oral Questions and Answers	
Thirtieth	2	The Future of AI: Future trends in AI, recent research and emerging technologies.	=====	Theoretical & practical	Daily tests + Questions Answers	

11-Course Evaluation

- Monthly tests for academic subjects.
- Daily tests with multiple-choice questions for academic subjects.
- Oral assessment through engaging students in discussions.
- Practical exams.

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	<ul style="list-style-type: none"> - 2016 أساسيات الحاسوب، الخضر علي الخضر بحث - 2007 مدخل إلى عالم الذكاء الاصطناعي، الدكتور عادل عبدالنور
Main references (sources)	Minister Of Higher Education and Scientific Research
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	<ul style="list-style-type: none"> - Graham Brown, David Watson, "Cambridge IGCSE Information and Communication Technology", الطبعة الثالثة (2020) - Alan Evans, Kendall Martin, Mary Anne Poatsy, "Technology In Action Complete", الطبعة السادسة عشر (2020)

Course Description Form

	<ul style="list-style-type: none"> - Ahmed Banafa, "Introduction to Artificial Intelligence (A) الطبعة الأولى (2024) - Microsoft Office 2019 Step by Step بواسطة Cur الالبعة الأولى بواسطة Frye & Joan Lambert
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1. Course Name:

Geometry

2. Course Code:

Math 203

3. Semester / Year:

Semester 2025-2026

4. Description Preparation Date:

2025/9/7

5. Available Attendance Forms:

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

3 hours per week / 5 units

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

Name: Sattar Hussein Abed
Email: sattar.hassin@mu.edu.iq

8. Course Objectives

Course Objectives

- Introducing students to the axiomatic system, the Young and Fano system, and the properties of the axiomatic system.
- Introducing students to the emergence of non-Euclidean geometry (Hathloulou geometry and elliptical geometry).

9. Teaching and Learning Strategies

Strategy

Using modern strategies and teaching methods, including brainstorming
Quick tests and pausing for a moment to measure comprehension.

10. Course Structure

Week	Hours	Unit or subject name	Learning method	Evaluation method
1	3 hours	Components of the axiomatic system, axioms of the projective plane	Follow the method of discussion and dialogue	Evaluative questions
2	3 hours	Finished projective levels, damaged levels Corrupted levels finished	Follow the method of discussion and dialogue	Evaluative questions
3	3 hours	Young and Fano system	Follow the method of	Evaluative questions

Course Description Form

			discussion and dialogue	
4	3 hours	Properties of the axiomatic system (consistency, independence)	Follow the method of discussion and dialogue	Evaluative questions
5	3 hours	Euclid's Critique (definitions, axioms and Euclid's theorems)	Follow the method of discussion and dialogue	Evaluative questions
6	3 hours	Evaluation of Euclid's geometry, axioms incidence and existence, axioms of order	Follow the method of discussion and dialogue	Evaluative questions
7	3 hours	Pieces	Follow the method of discussion and dialogue	Evaluative questions
8	3 hours	Bach's axioms, convex sets, inside and outside triangles, angles, convex quadrilaterals.	Follow the method of discussion and dialogue	Evaluative questions
9	3 hours	Match and compare	Follow the method of discussion and dialogue	Evaluative questions
10	3 hours	Match angles and triangles	Follow the method of discussion and dialogue	Evaluative questions
11	3 hours	Adding and subtracting angles, comparing angles	Follow the method of discussion and dialogue	Evaluative questions
12	3 hours	Elementary geometry, re-proofs of Euclid's theorems, external angles theorem	Follow the method of discussion and dialogue	Evaluative questions
13	3 hours	Right angles and non-right angles	Follow the method of discussion and dialogue	Evaluative questions
14	3 hours	Measurement (measuring a line segment, adding line segments, adding angles)	Follow the method of discussion and dialogue	Evaluative questions
15	3 hours	Non-Euclidean geometry	Follow the method of discussion and dialogue	Evaluative questions
16	3 hours	The axiom of parallelism and some of its equivalents, attempts to prove the axiom of parallelism	Follow the method of discussion and dialogue	Evaluative questions
17	3 hours	Hathluli geometry (the axiom of parallelism for geometry Hathluliyah)	Follow the method of discussion and dialogue	Evaluative questions
18	3 hours	The aligned triangle	Follow the method of discussion and dialogue	Evaluative questions
19	3 hours	Elliptic geometry (the characteristic axiom of elliptical geometry)	Follow the method of discussion and dialogue	Evaluative questions
20	3 hours	Projective geometry (principle of duality, formations)	Follow the method of discussion and dialogue	Evaluative questions
21	3 hours	Fano's axiom, Dizark's axiom, perfect quadrilateral, perfect quadrilateral.	Follow the method of discussion and dialogue	Evaluative questions
22	3 hours	Harmonic Sets	Follow the method of discussion and dialogue	Evaluative questions
23	3 hours	The axioms of separation, the axiom of continuity, perspective and projectivity perspective and projectivity	Follow the method of discussion and dialogue	Evaluative questions
24	3 hours	The analytical projective plane (Euclidean model of the projective plane, analytical model). Equations of points and lines	Follow the method of discussion and dialogue	Evaluative questions

Course Description Form

25	3 hours	The geometric meaning of linear correlation, engineering applications of linear correlation, transformations on R^n	Follow the method of discussion and dialogue	Evaluative questions
26	3 hours	The coordinate system of the line, changing coordinates	Follow the method of discussion and dialogue	Evaluative questions
27	3 hours	Reciprocal ratio, group of transformations, group of projective transformations, subgroups	Follow the method of discussion and dialogue	Evaluative questions
28	3 hours	The analytical compositional level, the Euclidean level, and the group of Euclidean transformations	Follow the method of discussion and dialogue	Evaluative questions
29	3 hours	Euclidean level and group of Euclidean transformations	Follow the method of discussion and dialogue	Evaluative questions
30	3 hours	Other partial geometries from projective geometry	Follow the method of discussion and dialogue	Evaluative questions

11. Course Evaluation

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

- 1- First month exam / 10 marks.
- 2- Daily exams / 2 grades.
- 3- Attendance/3 marks.
- 4- Mid-year exam / 15 marks.
- 5- Second month exam / 10 marks.
- 6- Final exam / 60 marks.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basic concepts in engineering, written by Dr. Amal Shehab Al-Mukhtar
Main references (sources)	Basic concepts in engineering, written by Dr. Amal Shehab Al-Mukhtar

Language

01

Course Description Form

2026	2025		
2025			
Room	and Electronic Lectures		
Weekly			
Unit			
Technique			
Course Objectives:			
Integrated approach to teaching			
Students to correct			
Method style	Teaching and Learning Strategies		
	Material	Hours	Week
What is	Language	1	1
Series of	Language Origin	1	2
Language Among	World Languages	1	3
Language and A	Arabization	1	4
Language and	Globalization	1	5
Rules of	Correct Writing	1	6
Writing	Hamza	1	7
Hamza of	Cutting and Connection	1	8
Hamza of	Cutting and Connection	1	9
Writing of	Ta	1	10
Writing of	Ta	1	11
Number and	Counted	1	12
Number and	Counted	1	13
Number and	Counted	1	14

Course Description Form

ظ and ض	1	١٥
ظ and ض	1	١٦
Quranic Text for Memorization	1	١٧
Quranic Text for Memorization	1	١٨
Quranic Text for Memorization	1	١٩
Introduction to Quran Interpretation	1	٢٠
Introduction to Quran Interpretation	1	٢١
Introduction to Arabic Literature	1	٢٢
Introduction to Arabic Literature	1	٢٣
Arabic Literature	1	٢٤
Arabic Literature	1	٢٥
Literature of Islamic Era	1	٢٦
Literature in Umayyad Era	1	٢٧
Al-Buḥārī's Poem in Praise of Zayn al-Abidin	1	٢٨
Literature in Abbasid Era	1	٢٩
Examples of Abbasid Poetry	1	٣٠
Sources:*		
University Arabic for Non-Specialists		
Arabic for Non-Native Speakers		
Arabic Literature Through the Ages		

Course Description Form

1-Course Name:					
Group theory					
2-Course Code:					
Math201					
3-Semester / Year:					
2025/2026					
4-Description Preparation Date:					
7/9/2026					
5-Available Attendance Forms:					
Classroom and Google classroom					
6-Number of Credit Hours :					
(90 hour per year) / Number of Units (5 units)					
7-Course administrator's name (mention all, if more than one name)					
Name: Lecture. Ekram abd ali Email: ekramalimth@mu.edu.iq					
8-Course Objectives					
Course Objectives				•Identify the concept of group, its types and applications.	
9-Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> -Brainstorming -Feedback at lecture time -Collaboration and feedback series 			
10-Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	<ul style="list-style-type: none"> -Student's ability to distinguish and understand cognitively to diagnose special theories and principles. -Practice different styles of mathematics proofs. -Prossessing thinking skills. 	Definitions of Mathematics system, binary operation, Group and semi group.	<ul style="list-style-type: none"> -Deductive -Induction -Discussion -Using Data Show and whiteboard. 	<ul style="list-style-type: none"> -Oral discussion -Daily exams -Monthly exams -Homework assignments.
2	3	=	Basic theorems of group	=	=
3	3	=	Symmetric group	=	=
4	3	=	Group of modulo	=	=

Course Description Form

			n		
5	3	=	Theorems of group of modulo n	=	=
6	3	=	Cyclic group	=	=
7	3	=	Theorems of Cyclic group	=	=
8	3	=	Subgroups	=	=
9	3	=	Cosets	=	=
10	3	=	Lagrange theorem	=	=
11	3	=	Normal groups	=	=
12	3	=	The normal elements and subgroups	=	=
13	3	=	Simple groups	=	=
14	3	=	Quotient group	=	=
15	3	=	Internal and External direct product	=	=
16	3	=	Homomorphism	=	=
17	3	=	Theorems of homomorphism	=	=
18	3	=	Types of homomorphism	=	=
19	3	=	The kernel of homomorphism	=	=
20	3	=	Isomorphism	=	=
21	3	=	The 1st fundamental theorem of Isomorphism	=	=
22	3	=	The 2nd and 3rd fundamental theorem of Isomorphism	=	=
23	3	=	Chains	=	=
24	3	=	Jordan-Holder theorem	=	=
25	3	=	Cayley's theorem	=	=
26	3	=	The solvable group	=	=
27	3	=	P-group	=	=
28	3	=	Sylow theorems	=	=
29	3	=	1st Sylow theorem	=	=
30	3	=	2nd Sylow theorem	=	=

11–Course Evaluation

Course Description Form

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

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	-
Main references (sources)	Introduction to modern abstract Algebra by :Dvaid M. Burton
Recommended books and references (scientific journals, reports...)	-
Electronic References, Websites	-

1. Course Name:

Secondary education and educational administration

2. Course Code:

CREQ 202

3. Semester / Year:

Academic year (2020 -2021)

4. Description Preparation Date:

2020/10/3

5. Available Attendance Forms:

Attendance lectures

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

(60 Hours)per year / (4 Units)

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

Name: Ahlam Adnan Jabbar

Email: ahlam.adnan@mu.edu.iq

8. Course Objectives

Course Objectives	Helping students to identify the components of the school and institutional system, possessing teaching and management skills, and the process of educational supervision, providing students with theoretical experience of secondary education systems, developing the skills of lesson planning and organization, and applying scientific steps within the educational institution.
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9. Teaching and Learning Strategies

Strategy	Using various means to deliver scientific material to the student, prepare and present lectures, lecture method, group participation, and student self-activity by collecting the information provided to be presented in the classroom.
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Course Description Form

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30week	2 hours per week		Study plan attached	Various methods	Various methods
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 Grade distribution: (10 marks) First semester exam- (10 marks) mid-year- (10 marks) second semester exam –(10marks) Daily , including daily participation assignments, daily tests and attendance –(60 marks) Final exam .					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Lectures on secondary education and educational administration by Dr. Mijbal Alwan Machi		
Main references (sources)			Hamed Zahran. Developmental Psychology Youssef Qahtan .secondary education Youssef Yacoub and Ali Al-Hattab .Secondary Education and Administration 2015		
Recommended books and references (scientific journals, reports...)			Educational administration and educational Supervision a. Muhammad Khaled azzam		
Electronic References, Websites			www.feedo.net IRaising children www.aricles.Islam www.happy family www.acofps www.mesoport.com www.uobabylon.edu.iq		

	Scientific material	Theoretical material	date	week
		Educational leadership		1

Course Description Form

		The importance and necessity of leadership		.٢
		Leadership and management		.٣
		Leadership characteristics, styles and theories		.٤
		Leadership characteristics, styles and theories		.٥
		Techniques adopted in modern management		.٦
		Levels of educational administration		.٧
		Developing the concept of educational administration across the ages		.٨
		Management between science, art and profession		.٩
		Educational administration operations		.١٠
		Definition of management in general		.١١
		Classroom, school and educational management		.١٢
		Time management and scheduling of lectures or lessons		.١٣
		Human Resource Management		.١٤
		A contemporary vision of educational administration		.١٥

Lesson schedule - for the second semester

Course Description Form

	Scientific material	Theoretical material	date	week
		The relationship of educational administration to successful administration		١٦
		Features and characteristics of successful educational administration		١٧
		School administration, its goals and importance		١٨
		Administrative personal qualities		١٩
		Characteristics of classroom management and its importance		٢٠
		Teaching skills and classroom management capabilities		٢١
		Methods of dealing with classroom problems and the influencing factor		٢٢
		Important directions in the field of classroom management		٢٣
		Educational and scientific planning		٢٤
		Educational development and planning		٢٥
		The concept of total quality management and quality education		٢٦
		Quality indicators in education		٢٧
		The concept of educational supervision		٢٨
		Functions of educational supervision and its methods		٢٩
		Types of educational supervision, its tools and problems		٣٠

Course Description Form

46. Course Name:					
Science of thinking					
47. Course Code:					
48. Semester / Year:					
2025–2026					
49. Description Preparation Date:					
21/9/2025					
50. Available Attendance Forms:					
Came					
51. Number of Credit Hours (Total) / Number of Units (Total)					
30 weeks / 1 units					
52. Course administrator's name (mention all, if more than one name)					
Name: shahad mansoor majeed Email: shahad.mansoor@mu.edu.iq					
53. Course Objectives					
Course Objectives Learn about the science of thinking, patterns, and skills.			<ul style="list-style-type: none"> • Understand the general meaning of thinking • Identify its characteristics, levels, and classifications • Understand the development of thinking and its skill 		
54. Teaching and Learning Strategies					
Strategy		Discussion method, group participation, student self-activity by collecting information about the material and presenting it in the classroom			
55. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30 weeks	One hours			Various methods	Various metho

Course Description Form

56. Course Evaluation					
week	Theoretical material				
	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				
	The Concept of Thinking Science				
	Characteristics and Levels of Thinking				
57. Learning and Teaching Resources					
٣	Classification of Thinking				
٤	Required textbooks (curricular books, if any), structure of Thinking				
٥	Main references (sources) Evolution of Thinking				
٦	The Science of Thinking - Saleh Saleh				
٧	Thinking Skills				
٨	Recommended books and references (scientific journals, reports, ...)				
٩	Creative Thinking				
١٠	Forms of Innovation				
١١	The Relationship Between Creative Thinking and Intelligence				
١٢	Electronic References, Websites				
١٣	Theories of Intelligence				
١٤	Websites related to education				
١٥	sciences and their foundations				
١٦	Types of Intelligence				
١٧	The Influence of Environment and Heredity on Intelligence				
١٨	Report				
١٩	Exam				
٢٠	Critical Thinking				
٢١	Components of Critical Thinking				
٢٢	Areas and Areas of Critical Thinking				
٢٣	Critical Thinking Standards				
٢٤	Exam				
٢٥	Critical Thinking Skills				
٢٦	Approaches to Building Thinking Programs				
٢٧	CoRT Thinking Program				
٢٨	TRIZ Creative Thinking Program				
٢٩	Methods of Applying Thinking				
٣٠	Thinking Trends				
٣١	Reports				
٣٢	Reports				
٣٣	Material Review				
٣٤	Material Review				
٣٥					
٣٦					

1. Course Name	Advanced Differential
2. Course code	Math200
3. Semester/Year	annual/2025-2026
4. Date this description was prepared	

Course Description Form

2025-9-7

5. Available forms of attendance

weekly

6. Number of study hours (total / (Number of units (total(

150 hour ٩٠) theoretical ٦٠+ discussion ٨٠ (units

7. Name of the course coordinator (if there is more than one, please mention it. (

Name: Asst. Lecture. Hasan Saad

Email: : Hasan.saad.math@mu.edu.iq

8. Course objectives

Students will learn to: - Identify infinite sequences and series

-Understand the concept of polar coordinates

-Understand the concept of three-dimensional space and vectors

-Understand the concepts of multivariable functions, limits, and continuity

-Understand partial derivatives, maximums and minimums, and the Lagrange factor for calculating limits

-Understand the concept of multiple integration with applications and distinguish it from classical integration

Course Objectives

9. Teaching and learning strategies

Lectures in the classroom.

-Discussions in the classroom.

-Guiding students to relevant websites.

-Mini-discussion groups for weekly assignments.

strategy

10. Course structure

Learning method	Unit or topic name	Required learning outcomes	Number of hours	Week
Theoretical explanation through printed lectures	Converting from Cartesian to polar coordinates and vice versa, and plotting points.	Polar coordinates conversion from coordinate	٥	١

Course Description Form

from various sources, and their explanation on the board with Assigning weekly homework to students and discussing it				
	Drawing circles from polar equations, well as the representing straight lines	Drawing circles and straight lines	o	2
	Through polar equations and their representation by points in the two dimensional plane, heart and flower shapes are produced	Drawing the heart and flower shapes are produced	o	3
	Using integration calculate length and area of a curve in polar equations	Curve length Inside area Curve	o	4
	Definitions and General Review Intermediate Equations	vectors	o	o
	Methods calculating multiplication of two vectors Applications dot and cross multiplication	Dot and cross product	o	6
	Extracting	Equation of a straight line	o	7

Course Description Form

	equation of rectum fr the vectors			
	Extracting equation of plane fr vectors a plane intersections	Equation of the plane	o	8
	Defining domain a range of function w two or th variables. Graphing domain of function w two variable	Multivariable functions	o	9
	Definition the limit of function, li theorems a examples	limits	o	10
	Definition continuity, theorems, a examples	Continuity	o	11
	Derivatives: Definition, Rules, a Examples	Partial and perfect derivatives	o	12
	Finding derivative using vector	Directional derivatives	o	13
	Finding derivative of composition two functio with t variables	chain rule	o	14
		Exams	o	15
	Methods calculating binary integration a calculating spaces	Double integration	o	16
	Methods calculating	Integration on the curve	o	17

Course Description Form

	double integ on a curve			
	The text of theorem, al with the pr and example	Crane's Theorem	o	18
	Methods calculating triple integ and findi volumes	Triple integrals	o	19
	Methods calculating integrals surfaces shapes	Integration on surfaces	o	20
	Definition o sequence, examples a application	sequences	o	21
	Definition o restricted sequence a examples	restricted sequences	o	22
	Definition o monotonic sequence a examples	Monotonic sequences	o	23
	Definition convergence and divergen	convergence of sequences	o	24
	Definition o series a examples	series	o	25
	Definition convergent a divergent series, th theorems, a examples	Convergence and divergence of series	o	26
	Types of ser convergence tests	Proximity tests	o	27
	Stringer rad radius	power series	o	28
	The gene formula for Taylor a Maclaurin series and examples	Taylor and Maclaurin sequence	o	29

Course Description Form

	Exams	o	۳۰
11. Course evaluation			
The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily, oral monthly, and written exams, reports, etc.			
12. Learning and teaching resources			
Advanced calculus, integration, and analytical geometry are among the mathematical sciences and their methods in scientific colleges.	Required textbooks (methodology if applicable)		
	Main references (sources)		
<ul style="list-style-type: none"> - Calculus Thomas, 1990 - Advanced Calculus (Schaum's Outline Series) - Calculus, Seventh Edition, Anton Biv Davis 	Recommended supporting books and references (scientific journals, reports(...		
WWW.freescience.info/math	Electronic references, websites		

1-Course Name:
Crimes of the Ba'athist regime in Iraq
2-Course Code:

Course Description Form

3-Semester / Year:				
Semester 2025-2026				
4-Description Preparation Date:				
2025/9/7				
5-Available Attendance Forms:				
6-Number of Credit Hours (Total) / Number of Units (Total)				
1				
7-Course administrator's name (mention all, if more than one name)				
Name: Asst. Lecture. Ali Kamel Abdullah Email: : Ali.kamil@mu.edu.iq				
8-Course Objectives				
Course Objectives	<ul style="list-style-type: none"> • Identifying the crimes committed by Saddam Hussein Ba'ath Party 			
9-Teaching and Learning Strategies				
Strategy	<p>Using modern strategies and teaching methods, including brainstorming</p> <p>Quick tests and pausing for a moment to measure comprehension.</p>			
10-Course Structure				
Week	Hours	Unit or subject name	Learning method	Evaluation method
1-2	1 hours	Concept of crimes	Follow the method of discussion and dialogue	Evaluative questions
3-4	1 hours	Definition of crime, linguistically and technically	Follow the method of discussion and dialogue	Evaluative questions
5-6	1 hours	Crime departments	Follow the method of discussion and dialogue	Evaluative questions
7-8	1 hours	Types of crimes	Follow the method of discussion and dialogue	Evaluative questions
9-10	1 hours	Decisions issued by the Supreme Criminal Court	Follow the method of discussion and dialogue	Evaluative questions
11-12	1 hours	Psychological crimes	Follow the method of discussion and dialogue	Evaluative questions
13-14	1 hours	Psychological effects of crimes	Follow the method of discussion and dialogue	Evaluative questions
15-16	1 hours	Social crimes	Follow the method of discussion and dialogue	Evaluative questions
17-18	1 hours	The Ba'athist regime's stance on religion	Follow the method of discussion and dialogue	Evaluative questions
19-20	1 hours	Violations of Iraqi laws	Follow the method of discussion and dialogue	Evaluative questions
21-22	1 hours	Images of violations of Iraqi laws	Follow the method of discussion and dialogue	Evaluative questions
23-24	1 hours	Prisons and detention centers of the Ba'ath regime	Follow the method of discussion and dialogue	Evaluative questions

Course Description Form

25-26	1 hours	Environmental crimes in Iraq	Follow the method of discussion and dialogue	Evaluative questions
27	1 hours	Destruction of cities and villages	Follow the method of discussion and dialogue	Evaluative questions
28	1 hours	Drying the marshes	Follow the method of discussion and dialogue	Evaluative questions
29	1 hours	Demolition of palm groves, trees and crops	Follow the method of discussion and dialogue	Evaluative questions
30	1 hours	Mass grave crimes	Follow the method of discussion and dialogue	Evaluative questions

11–Course Evaluation

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

- 1- First month exam / 10 marks.
- 2- Daily exams / 2 grades.
- 3- Attendance/3 marks.
- 4- Mid-year exam / 15 marks.
- 5- Second month exam / 10 marks.
- 6- Final exam / 60 marks.

12–Learning and Teaching Resources

Required textbooks (curricular books, if any)

Main references (sources)

1. Course Name:

Numerical Analysis

2. Course Code:

Math 301

3. Semester / Year:

202^o/202¹ Year

4. Description Preparation Date:

1/9/202^o

5. Available Attendance Forms:

Classroom and Google classroom

6. Number of Credit Hours :

4 hours per week(120 hour per year) / Number of Units (6 units)

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

Name: Asst. Prof. Dr. Ahmed S. Jbara

Email: ahmedsbhe@mu.edu.iq

Course Description Form

8. Course Objectives

Course Objectives

Identify the concept of numerical solutions for linear and nonlinear equations, and its applications. Identify the concept of iterative methods and interpolation. Also, Identify of numerical integration methods, and the concept of numerical solutions of differential equations by different methods.

9. Teaching and Learning Strategies

Strategy

-Brainstorming
-Feedback at lecture time
-Collaboration and feedback series

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	- Student's ability to distinguish and understand cognitively to diagnose numerical solutions. - Practice different styles of solutions ways. - Possessing thinking skills.	Introduction (What is numerical analysis?, Direct or iterative methods, Floating-point arithmetic, Fixed-point numbers)	- Deductive - Induction - Discussion using whiteboard and Data show.	- Oral discussion - Daily exams - Monthly exams - Homework assignments.
2	4	=	Introduction (Floating-point numbers, Significant figures, Rounding error, Loss of significance)	=	=
3	4	=	Nonlinear Equations (Bisection method)	=	=
4	4	=	Nonlinear Equations (False position methods)	=	=
5	4	=	Nonlinear equations (Simple fixed-point iteration)	=	=
6	4	=	Nonlinear Equations (Newton-Raphson method)	=	=
7	4	=	Nonlinear Equations (Secant methods)	=	=
8	4	=	Polynomial Interpolation (Polynomial interpolation, Taylor series)	=	=

Course Description Form

9	4	=	Polynomial Interpolation (Lagrange form, Newton/divided-difference form)	=	=
10	4	=	Polynomial Interpolation (Inverse interpolation, Interpolation error)	=	=
11	4	=	Polynomial Interpolation (Convergence and the Chebyshev nodes, Derivative conditions)	=	=
12	4	=	Linear Equations (Gaussian elimination, Triangular systems)	=	=
13	4	=	Linear Equations (LU factorization, Cholesky factorization)	=	=
14	4	=	Linear Equations (Pivoting, Vector norms, Matrix norms, Condition Number and Conditioning)	=	=
15	4	=	Linear Equations (Basic iterative methods, Jacobi method, Gauss-Seidel method)	=	=
16	4	=	Numerical Integration (Newton-Cotes formula)	=	=
17	4	=	Numerical Integration (The Trapezoidal rule, Error of the Trapezoidal rule)	=	=
18	4	=	Numerical Integration (Simpson's rules, Composite Simpson's rule)	=	=
19	4	=	Numerical Integration (Higher-Order Newton-Cotes formulas)	=	=

Course Description Form

20	4	=	Numerical Integration (Romberg integration)	=	=
21	4	=	Numerical Integration (Gaussian quadrature formulas)	=	=
22	4	=	Numerical Differentiation)High-accuracy differentiation formulas, Richardson extrapolation)	=	=
23	4	=	Numerical Differentiation (Taylor series methods)	=	=
24	4	=	Numerical Differentiation (Euler's method)	=	=
25	4	=	Numerical Differentiation (Improvements of Euler's method)	=	=
26	4	=	Numerical Differentiation (Taylor series method of higher order)	=	=
27	4	=	Numerical Differentiation (Second-order Runge-Kutta methods)	=	=
28	4	=	Numerical Differentiation (Fourth-order Runge-Kutta method)	=	=
29	4	=	Numerical Differentiation (First-order system)	=	=
30	4	=	Numerical Differentiation (Higher-order system)	=	=

Course Description Form

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 (40) & (60 final exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	٢. مقدمة في التحليل العددي، تأليف الدكتور احمد صالح الالوسي و عادل زينل البياتي. ٣. مبادئ التحليل العددي، تأليف الدكتور علي صادق سيفي و الدكتور ابتهام كمال الدين.
Main references (sources)	1. Conte, S.D. and De Boor, C., 2017. Elementary numerical analysis: an algorithmic approach. Society for Industrial and Applied Mathematics. 2. Isaacson, E. and Keller, H.B., 2012. Analysis of numerical methods. Courier Corporation.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://www.pdfdrive.com/

Course Description Form

1. Course Name:					
Probability					
2. Course Code:					
Math 302					
3. Semester / Year:					
٢٠٢٥-٢٠٢٦					
4. Description Preparation Date:					
٨/٩/202٥					
5. Available Attendance Forms:					
6. Number of Credit Hours (٤) / Number of Units (٦)					
4/6					
7. Course administrator's name (mention all, if more than one name)					
Name: Assis. Lec. Sarab kazim Hassan Email: sarab.kadhim@mu.edu.iq					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> -The student learns the method of collecting, tabulating, processing and analyzing data -Understanding some statistical indicators and using them in the applid side -Getting to know the theory of probability, and some distributions 			
9. Teaching and Learning Strategies					
Strategy		Introduction to statistics, data organization, probability, and mathematical prediction Functions, joint distributions, and discrete and continuous probability distribution			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	statistics and its types	statistics and its types	deductive	Oral discussion
2	4	Population and sample	Population and sample	Induction	Daily exams
3	4	Types of variables	Types of variables	Discussion	Monthly exam
4	4	Data organization	Data organization	Use of colored pens and whiteboard	Homework assignment
5	4	Organize and display metadata	Organize and display metadata		

Course Description Form

6	4	Organizing and presenting quantitative data	Organizing and presenting quantitative data		
7	4	Iterative distributions conyinuous variables	Iterative distributions conyinuous variables		
8	4	Accumulative distributions	Accumulative distributions		
9	4	Digital descriptive scales	Digital descriptive scales		
10	4	The calculation of arithmetic medium	The calculation of arithmetic medium		
11	4	The loom	The loom		
12	4	Dispersion measures	Dispersion measures		
13	4	probability	probability		
14	4	Counting rules	Counting rules		
15	Exam				
16	4	The Conditional possibility	The Conditional possibility		
17	4	Random variables	Random variables		
18	4	Mass and probabi density functions	Mass and probabi density functions		
19	4	Sports expectation	Sports expectation		
20	4	Characteristics of Mathematical expectation	Characteristics of Mathematical expectation		
21	4	Sports prediction Applications	Sports prediction Applications		
22	4	Average and contrast	Average and contrast		
23	4	The result-Generating functions	The result-Generating functions		
24	4	decentralized decentrating functions	decentralized decentrating functions		
25	4	Common distributions	Common distributions		
26	4	Common distributive functions	Common distributive functions		
27	4	Marginal distribution	Marginal distribution		
28	4	Intermittent Probability distributions	Intermittent Probability distributions		
29	4	Normal distribution	Normal distribution		

Course Description Form

30	Exam
11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	<p>١-المشهداني،محمود حسن وهرمز،أمير حنا"الإحصاء" العراق/جامعة بغداد ١٩٨٩</p> <p>غزالي،سليم إسماعيل وسيفي،علي محمد صادق"مبادئ الإحصاء" العراق/جامعة بغداد ١٩٨٥</p>
Main references (sources)	R.Hoggand A.Grage "Introduction to mathematical statistics" NEW YORK 1974
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:					
Mathematical Analysis					
2. Course Code:					
Math 300					
3. Semester / Year:					
Year 2020-2021					
4. Description Preparation Date:					
7/9/2020					
5. Available Attendance Forms:					
6. Number of Credit Hours (Total) / Number of Units (Total)					
4 hours per week (120 hours per year) / 6 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Lect. Amer Khrija Abed Email: amer.khrija@mu.edu.iq					
8. Course Objectives					
Course Objectives				On completion of this course; the student will be able to understand fundamentals and concepts of Sequences and series then study the convergence. Also, study the Riemann and Lebesgue Integral	
9. Teaching and Learning Strategies					
Strategy		We use examples and explain writing on board and so use discussions for more understanding. So we give homeworks and discuss them.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4		Ordered Sets		quiz
2	4		Dense of Rational numbers		quiz
3	4		Sequences of real numbers		quiz
4	4		Sequences of Cauchy		quiz
5	4		Convergent sequences		quiz
6	4		Test of convergence		quiz
7	4		Metric Spaces		quiz
8	4		Example for Metric spaces		quiz

Course Description Form

9	4		Accumulation Points		quiz
10	4		Open and Closed Sets		quiz
11	4		Compact Sets		quiz
12	4		Bounded Sets		quiz
13	4		Tests		quiz
14	4		Continuity		quiz
15	4		Continuity		quiz
16	4		Compact and Continuity		quiz
17	4		Convergence and Continuity		quiz
18	4		Uniform continuous		quiz
19	4		Partition		quiz
20	4		Riemman Integral		quiz
21	4		Properties of Rimman Integral		quiz
22	4		Rimman Stlijest		quiz
23	4		Measure of Bounded Sets		quiz
24	4		Measure of unbounded Sets		quiz
25	4		Measurable function		quiz
26	4		UnMeasurable		quiz
27	4		Lesbuqe		quiz
28	4		Properties of Lesbuqe		quiz
29	4		Theorems		quiz
30	4		Examples		quiz

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	مقدمة بالتحليل الرياضي (د. عادل غسان)
Main references (sources)	مبادئ التحليل الرياضي (وولتر رودن ترجمة د. عبد السميع عبد الرزاق)
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1-Course Name:					
Partial differential equations					
2-Course Code:					
Math ۳.۰.۴					
3-Semester / Year:					
202۰-202۱					
4-Description Preparation Date:					
۷/9/202۰					
5-Available Attendance Forms:					
6-Number of Credit Hours (۴) / Number of Units (۶)					
4/6					
7-Course administrator's name (mention all, if more than one name)					
Name: Dr. Alya'a Abdulkadhim Sabry Email: alyaa_ros@mu.edu.iq					
8-Course Objectives					
Course Objectives		The student understands the concept of partial differential equation and is able to find general solutions that is specific to it depends on the rank, degree, and standard form it possesses			
9-Teaching and Learning Strategies					
Strategy		Solving partial differential equations, finding the partial differential equation from complete or general solution. Some methods for solving first-order partial differential equations, Linear partial differential equations, inverse partial differential effects, Fourier series Wave equation in one dimension.			
10-Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	A general introduction and some basic Definitions and concepts examples	A general introduction and some basic Definitions and concepts examples	deductive	Oral discussion
2	4	Discussion	Discussion	Induction	Daily exams
3	4	Solving partial differential equations	Solving partial differential equations	Discussion	Monthly exam
4	4	Discussion	Discussion	Use of colored pens and whiteboard	Homework assignment

Course Description Form

5	4	Finding the partial differential equation from complete or general solution	Finding the partial differential equation from complete or general solution		
6	4	Discussion	Discussion		
7	4	Some methods solving first-order partial differential equations	Some methods solving first-order partial differential equations		
8	4	Discussion	Discussion		
9	4	Some special cases solving first-order nonlinear partial differential equations	Some special cases solving first-order nonlinear partial differential equations		
10	4	Discussion	Discussion		
11	4	Linear partial differential equations	Linear partial differential equations		
12	4	Discussion	Discussion		
13	4	The inverse of the partial differential operator	The inverse of the partial differential operator		
14	4	Discussion	Discussion		
15	Exam				
16	4	Homogeneous linear equation with fixed coefficients of higher order	Homogeneous linear equation with fixed coefficients of higher order		
17	4	Discussion	Discussion		
18	4	Fourier series	Fourier series		
19	4	Discussion	Discussion		
20	4	Fourier integrals	Fourier integrals		
21	4	Discussion	Discussion		
22	4	Fourier integrals of half the range	Fourier integrals of half the range		
23	4	Discussion	Discussion		
24	4	Applications to partial differential equations	Applications to partial differential equations		
25	4	Wave equation in one dimension	Wave equation in one dimension		
26	4	Discussion	Discussion		

Course Description Form

27	4	Heat equation	Heat equation		
28	4	Discussion	Discussion		
29	4	Discussion	Discussion		
30	Exam				
11–Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports ... etc					
12–Learning and Teaching Resources					
Required textbooks (curricular books, if any)					
Main references (sources)			<ol style="list-style-type: none"> 1- Partial differential equation for scientific and engineering faculties/translated by Dr. Atallah Thamer AlAni 1989 2- Partial differential equation/ Dr. Atallah Thamer AlAni 3- Introduction to partial differential equation/ Dr. Atallah Thamer AlAni 4- Partial differential Equations / Jhon.F. 		
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites					

Course Description Form

13.	Course Name:				
		Ring theory			
14.	Course Code:				
		Math303			
15.	Semester / Year:				
		2025/2026			
16.	Description Preparation Date:				
		9/9/2025			
17.	Available Attendance Forms:				
		Classroom and Google classroom			
18.	Number of Credit Hours :				
		(120 hour per year) / Number of Units (6 units)			
19.	Course administrator's name (mention all, if more than one name)				
	Name: Assit. Lec. Hadeel Hadi Email: hadeel.hadi@mu.edu.iq				
20.	Course Objectives				
	Course Objectives	<ul style="list-style-type: none"> •Identify the concept Ring,Modulo,Representation, its types and applications. 			
21.	Teaching and Learning Strategies				
	Strategy	<ul style="list-style-type: none"> -Brainstorming -Feedback at lecture time -Collaboration and feedback series 			
22.	Course Structure				
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	<ul style="list-style-type: none"> -Student's ability to distinguish and understand cognitively to diagnose special theories and principles. -Practice different styles of mathematics proofs. -Prossessing thinking skills. 	Definitions of Ring, commutative ring and ring with identity.	<ul style="list-style-type: none"> -Deductive -Induction -Discussion -Using Data Show and whiteboard. 	<ul style="list-style-type: none"> -Oral discussion -Daily exams -Monthly exams -Homework assignments.
2	4	=	Divisors of zero,Integral domain	=	=
3	4	=	Subring,Field,Field	=	=

Course Description Form

			of divisors		
4	4	=	Ideals, Trivial and proper, Intersection	=	=
5	4	=	The center and characteristic of ring	=	=
6	4	=	The principal ideal	=	=
7	4	=	The smallest ideal, The principal ideal ring	=	=
8	4	=	The maximal ideal- Zorn's lemma	=	=
9	4	=	Cosets, Quotient ring	=	=
10	4	=	The prime ideal	=	=
11	4	=	The principal ideal domain	=	=
12	4	=	The idempotent element, Boolean ring	=	=
13	4	=	Nilpotent element, Primary ideal	=	=
14	4	=	Ring homomorphism	=	=
15	4	=	Theorems of the ring homomorphism, Kernel of homomorphism	=	=
16	4	=	Theorems of kernel of homomorphism, Image and types of homomorphism	=	=
17	4	=	The Natural mapping, Isomorphism and the 1 st fundamental theorem	=	=
18	4	=	The 2 nd and 3 rd fundamental theorem of Isomorphism	=	=
19	4	=	The division ring (Skew field)	=	=
20	4	=	Radical ideal	=	=
21	4	=	Nil-radical ring	=	=
22	4	=	Polynomials, Sum, Product, types of Polynomials	=	=
23	4	=	Polynomials ring	=	=

Course Description Form

24	4	=	Polynomials field, Division algorithm	=	=
25	4	=	Remainder and Factorization theorems, roots of Polynomials	=	=
26	4	=	Reducible & irreducible Polynomials	=	=
27	4	=	Modules and submodules	=	=
28	4	=	Modules homomorphism	=	=
29	4	=	Representation, some types	=	=
30	4	=	Group representation	=	=

23. 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 (40) & (60 final exam)

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	-
Main references (sources)	Introduction to modern abstract Algebra by :Dvaid M. Burton
Recommended books and references (scientific journals, reports...)	-
Electronic References, Websites	-

1. Course name: Curricula and teaching methods

2. Code The decision: CREQ 300

3. the chapter /Year: Semester 2025–2026

4. Date of preparation of this Description: 8/9/2025

5. A Available attendance forms Attendance in classrooms.

Course Description Form

6. Number of study hours (total) / Number of units (total) 3 hours per week / 4 units

7. Course Instructor Name (If more than one name is mentioned)

the name: Asst.Lect. Marwa Adnan

8. Goals The decision

- Introducing students to old and modern teaching methods
 - Introducing students to the types of assessment and its use in all
 Stages of the educational process.
 Training students to prepare a daily plan and a plan.
 Annual and monthly plan and how to implement it inside classroom.
 - Training students on how to deal with different types of Learners.

Goals The material Academic//identification Students i
 Stage on The curriculum And the comparison between TH
 And the old And to view on Methods Teaching Modern
 And knowledge Strategies Teaching And the differentiat
 The method And the style and strategy
 And it is considered This is amazing Stage beginning Reha
 For students And prepare them For the stage Application
 Fourth.

9. Strategies education And learning

from Strategies Modern Which Includes Two sides Essentials side The teacher
 includes education and
 side The learner It includes Learning.
 We use in material Measurement and Evaluation group Big And diverse for
 Strategies Learning
 And education Modern In order to Information Learners on all What is it new
 talk While It concerns The curriculum
 Hadith
 addition to Accustoming Learners on Use This is amazing Strategies For
 purpose Apply it on
 Learners in Schools during a period Application.

For strategy

10. Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Watches	The week
Questions Calendar	Method Dialogue discussion	Concepts General For the material Curricula And methods Teaching Concept Science And its	- knowledge Curricula Teaching Modern. - knowledge road Teaching And methods Teaching	3	The week 1 The week 2 The week 3 The week 4

Course Description Form

	<p>Method Learning Cooperative</p>	<p>components And its characteristics - Understood The curriculum And its regulations Foundations building The curriculum (basis Cognitive The basis Social) Foundations building The curriculum (basis Philosophical The basis Psychological) Types Curricula Academic (Curricula Separate And interconnected And method Activity Types Curricula Academic (Methodology Areas The spacious and units The method Axial. Elements building The curriculum Objectives. Exam The month the first Elements building The curriculum Content And experiences and activities Calendar The curriculum And develop it. The book School And its characteristics. Calendar The book School And analysis Its contents. Review General And discuss Reports - Exam The month the second - Exams the chapter Academic the first Review General For the mate</p>	<p>Different And the differentiation Between them. Get to know Foundations Curricula - Setting up Students To work the plan Annual And the plan Daily - Recognition on Types Calendar And its uses in The process Educational. knowledge The book School And its contents Curriculum development.</p>	<p>The week 5 The week 6 The week 7 The week 8 The week 9 The week 10 Week 11 Week 12 Week 13 The week 14 Week 15 Chapter Two The week 1 The week 2 The week 3 The week 4 The week 5 The week 6 The week 7 The week 8 The week 9 The week 10 Week 11 Week 12 Week 13 Week 14 Week 15</p>
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Course Description Form

		<p>the chapter the first</p> <p>Concept road Teaching And reasons</p> <p>- diversity Methods Teaching Style Teaching And its strategies</p> <p>Method The lecture and discussion</p> <p>And dialogue Investigative. Method solution Problems A education .</p> <p>and cooperative learning The way</p> <p>Exploratory</p> <p>Exam The month the first</p> <p>Techniques Educational</p> <p>Education Electronic</p> <p>Calendar And its types</p> <p>Questions Classroom</p> <p>Planning Annual And the daily</p> <p>Applications practical</p> <p>Applications practical</p> <p>exam The month the second</p>		
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11. Course Evaluation

distribution Degree from **100** on according to Tasks The person in charge With it The student like Preparation Daily and reports....etc

- 1-** exam The month the first..... **10** grades.
 - 2-** Reports Weekly Editorial..... **2** Two degrees per a report.
 - 3-** Enhance role Education The process in The hall (performance lesson with writing plan) **1** per to implementation
 - 4-** exam The month the second or half Year..... **15** degree.
 - 5-** Third month exam... 10 marks.
- Final Exam 60 marks

12. sources Learning And teaching

Curricula and teaching methods (available for free)	Books The reporter Required (methodology that I found)
Strategies development Curricula And methods Teaching Modern/ Dr. Majid Ayoub Al-Qaisi	the reviewer President (Sources)

Course Description Form

Summaries And lectures Special The curriculum Univer For students Stage Third in material Curricula and teaching methods	Books References chock that Recommended With it(Ma
examining on Books Private With material Curricula teaching methods The one present on Sites communication Social.	the reviewer Electronic , Sites The Internet

Course Description Form

Course name .١
Scientific research methodology
Course code .٢
Math305
Year / Chapter .٣
2025/2026 Chapter
Date this description was prepared .٤
2025/9/11
Available attendance forms .٥
person-In
(hours (total) / Number of units (total Number of study .٦
units5 / hours per week ٢
(Name of the course administrator (if more than one name is mentioned .٧
ahmed.salam@mu.edu.iq : Ahmed Salam Razzaq : the name
Course objectives .٨

Course Description Form

Understanding the meaning and types of scientific research • How to choose a research topic and define the research problem • Knowledge of scientific research methods and how to collect information •	Teaching students how to write scientific research and enable the student to write the research problem and write the source
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Teaching and learning strategies . ٩

activity through -Discussion method, group participation, student self collecting information about the subject and presenting it in the classroom	Strategy
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Course structure . ١٠

Evaluation method	Learning method	Name of the unit or topic	Watches	The week and the
rio	Various methods	Philosophy and mathematics	hours ٢	١
rio	Various methods	Science and its objectives	hours ٢	٢
rio	Various methods	Scientific method and its importance	hours ٢	٣

Course Description Form

rio		Various methods	scientific method Characteristics of the	hours ۲	۴
rio		Various methods	Scientific research, methodology	hours ۲	۵
rio		Various methods	Scientific research patterns	hours ۲	۶
rio		Various methods	The importance of scientific research for student and the fields of science the	hours ۲	۷

Course Description Form

rio		Various methods	Knowledge and its classification	hours ٢	٨
rio		Various methods	Ways to access knowledge	hours ٢	٩
rio		Various methods	researcher Characteristics of a good	hours ٢	١٠
rio		Various methods	Scientific research steps	hours ٢	١١

Course Description Form

rio		Various methods	Research Methods	hours ۲	۱۲
rio		Various methods	Data collection sources (field and historical) sources	hours ۲	۱۳
rio		Various methods	Data collection method	hours ۲	۱۴
rio		Various methods	Society and sample	hours ۲	۱۵

Course Description Form

rio	Various methods	Probability sampling	hours ۲	۱۶
rio	Various methods	probability sampling-Non	hours ۲	۱۷
rio	Various methods	Statistical form	hours ۲	۱۸
rio	Various methods	Statistical form errors	hours ۲	۱۹
rio	Various me) Data classification (types of tables	hours ۲	۲۰

Course Description Form

	thods			
rio	Various methods) Tabulation (types, methods	hours ۲	۲۱
rio	Various methods	Frequency distributions	hours ۲	۲۲
rio	Various methods	Probability sampling	hours ۲	۲۳
rio	Various methods	Measures of central tendency	hours ۲	۲۴

Course Description Form

rio		Various methods	Dispersion measures	hours ۲	۲۵
rio		Various methods	Organizing the research (reading sources) and benefiting from them	hours ۲	۲۶
rio		Various methods	Organizing the title page, introduction and contents	hours ۲	۲۷
rio		Various methods	Appendices	hours ۲	۲۸

Course Description Form

rio	Various methods	Preparing a list of sources and references	hours ٢	٢٩
rio	Various methods	Research Summary	hours ٢	٣٠

Course Evaluation .١١

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

Learning and teaching resources .١٢

scientific research Principles of	(Required textbooks (methodology if any
scientific research method in mathematics	(Main References (Sources
There is	Recommended supporting books and references (.scientific journals, reports, etc)
There is	Electronic references, websites

Course Description Form

1. Course Name:					
Psychological painting					
2. Course Code:					
CREQ302					
3. Semester / Year:					
Academic year (2025 -2026)					
4. Description Preparation Date:					
٢٠٢٥/٩/١٠					
5. Available Attendance Forms:					
Attendance lectures					
6. Number of Credit Hours (Total) / Number of Units (Total)					
(60 Hours)per year / (4 Units)					
7. Course administrator's name (mention all, if more than one name)					
Name: Ahlam Adnan Jabbar Email: ahlam.adnan@mu.edu.iq					
8. Course Objectives					
Course Objectives	Helping the student to solve his psychological, social and educational problems, facilitating aspects of the individual's natural growth and meeting his requirements to help him achieve the highest levels of social and psychological maturity.				
9. Teaching and Learning Strategies					
Strategy	Using various means to deliver scientific material to the student, preparing lectures and presenting them during the lecture, discussion method, group participation, and student self-activity by collecting the information provided to be presented in the classroom.				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

Course Description Form

r • week	2 hours per week		Study plan attached	Various methods	Various methods
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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
 Grade distribution: (10 marks) First semester exam- (15 marks) mid-year- (10 marks) second semester exam –(5 marks) Daily , including daily participation assignments, daily tests and attendance –(60 marks) Final exam .

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Psychological and educational guidance, Dr. Fatima Abdel Rahim
Main references (sources)	- Contemporary educational guidance and counselling, Dr. Awatif Mahmoud - Supervision in educational psychological counseling, Dr. Saleh Hassan - Principles of educational guidance and counselling, Dr. Abdullah Al-Tarwanah
Recommended books and references (scientific journals, reports...)	Psychological guidance and counselling, Dr. Suhair Kamel Ahmed
Electronic References, Websites	www.uobabylon.edu.iq www.moj.gov.iq www.researchgate.net

	Scientific material	Theoretical material	date	week
		The meaning of educational guidance, origin and development		. ١
		Concepts of educational guidance, its justification and goals		. ٢
		Methods and types of educational guidance		. ٣
		Direct and indirect guidance		. ٤
		Group counseling		. ٥
		Individual guidance		. ٦

Course Description Form

		Concepts of educational guidance		.٧
		Educational counseling theories		.٨
		General foundations of educational guidance		.٩
		Ethics of counseling work		.١٠
		The mentor teacher		.١١
		The need for a school educational counselor		.١٢
		Professional competence of the educational counselor		.١٣
		The importance of information		.١٤
		Information sources		.١٥

	Scientific material	Theoretical material	date	week
		Information attributes		١٦
		Methods of acquiring information		١٧
		Interview and observation		١٨
		Counseling professional relationship		١٩
		The mentor's relationship with institutions		٢٠
		Relationships between individuals outside school		٢١
		Some problems facing educational counselors in schools		٢٢
		The mentor-student relationship		٢٣
		The mentor's relationship with management		٢٤
		Health concept		٢٥
		Mental health goals		٢٦
		Mental health obstacles		٢٧
		Test preparation by students		٢٨

Course Description Form

		General concepts of educational guidance		۲۹
		Testing		۳۰

Course Description Form

25. Course Name:

Mathematical Statistics

26. Course Code:

Math401

27. Semester / Year:

202^o/202¹

28. Description Preparation Date:

1/11/202^o

29. Available Attendance Forms:

Classroom and Google classroom

30. Number of Credit Hours :

(120 hour per year) / Number of Units (6 units)

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

Name: amaal kareem oleiwi

Email: amal_kareem@mu.edu.iq

32. Course Objectives

Course Objectives

Identify the concept of Mathematical •
Statistics, , its types and distributions .

33. Teaching and Learning Strategies

Strategy

-Brainstorming
-Feedback at lecture time
-Collaboration and feedback series

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	-Student's ability to distinguish and understand cognitively to diagnose Statistics distributions. -Practice different styles of distributions . -Prossessing thinking skills.	Introduction in Statistics	-Deductive -Induction -Discussion -Using Data Show and whiteboard.	-Oral discussion -Daily exams -Monthly exams -Homework assignments.
2	4	=	Probability Distributions	=	=
3	4	=	Moment Generating Functions	=	=
4	4	=	Transformations	=	=
5	4	=	Distribution Function	=	=
6	4	=	Order Statistics	=	=
7	4	=	Approximation	=	=
8	4	=	Large Numbers	=	=
9	4	=	Limited Central Theorem	=	=

Course Description Form

10	4	=	Limited Distributions	=	=
11	4	=	Binomial Distribution	=	=
12	4	=	Bernoulli Distribution	=	=
13	4	=	Gamma Distribution	=	=
14	4	=	Alpha Distribution	=	=
15	4	=	Revision	=	=
16	4	=	Practice	=	=
17	4	=	Practice	=	=
18	4	=	Practice	=	=
19	4	=	Practice	=	=
20	4	=	Practice	=	=
21	4	=	Practice	=	=
22	4	=	Practice	=	=
23	4	=	Practice	=	=
24	4	=	Cheby Equation	=	=
25	4	=	Normal Distribution	=	=
26	4	=	X^2 -distribution	=	=
27	4	=	T- Distribution	=	=
28	4	=	F- Distribution	=	=
29	4	=	Hypotheses Tests	=	=
30	4	=	Estimation	=	=

35. 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 (40) & (60 final exam)

36. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Mathematical Statistics Amir H. Hormez
Main references (sources)	Fundamentals of applied statistics Sultan chand&sons
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	-

Course Description Form

37.	Course Name:				
	Topology				
38.	Course Code:				
	Math400				
39.	Semester / Year:				
	Yearly – 2025/2026				
40.	Description Preparation Date:				
	16/9/2025				
41.	Available Attendance Forms:				
	Weekly				
42.	Number of Credit Hours (Total) / Number of Units (Total)				
	4/6				
43.	Course administrator's name (mention all, if more than one name)				
	Name: Prof. Qays Hatem Imran Email: qays.imran@mu.edu.iq				
44.	Course Objectives				
	Course Objectives	Providing students with general information about the basic concepts of general topology.			
45.	Teaching and Learning Strategies				
	Strategy				
46.	Course Structure				
Week	Hours	Unit or subject name	Required Learning Outcomes	Learning method	Evaluation method
1	4	Topological Spaces			
2	4	Metric topologies			
3	4	Neighbourhoods			

Course Description Form

4	4	Local base			
5	4	A base for a topology			
6	4	Derived sets			
7	4	Closure			
8	4	Interior of a set			
9	4	Exterior of a set			
10	4	Relative topology			
11	4	Continuity			
12	4	Closed and Open Functions			
13	4	Homeomorphism			
14	4	Separated Sets			
15	4	Connectedness			
16	4	Totally disconnected Spaces			
17	4	Compactness			
18	4	Locally compact spaces			
19	4	Lindelof space			
20	4	Viewing and Application			
21	4	Viewing and Application			
22	4	Viewing and Application			
23	4	Viewing and Application			

Course Description Form

24	4	Viewing and Application			
25	4	Viewing and Application			
26	4	T0-space, T1-space			
27	4	Hausdorff space or T2-space			
28	4	Regular space			
29	4	Normal space			
30	4	Product Topology			

47. 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

48. Learning and Teaching Resources

Required textbooks (curricular books, if any)	التبولوجيا العامة (د.سمير بشير الحديد)، التبولوجيا العامة (د.عربي الزوبعي وعطالله ثامر العاني)
Main references (sources)	general topology by Willard- introduction to general topology by Ho
Recommended books and references (scientific journals, reports...)	-----
Electronic References, Websites	Google Scholar

Course Description Form

13. Course Name:					
Measurement and evaluation					
14. Course Code:					
CREQ 401					
15. Semester / Year:					
Academic year (2025 -2026)					
16. Description Preparation Date:					
2025-9-10					
17. Available Attendance Forms:					
Attendance lectures					
18. Number of Credit Hours (Total) / Number of Units (Total)					
(60 Hours)per year / (4 Units)					
19. Course administrator's name (mention all, if more than one name)					
Name: marwa adnan olewi Email: marwaadnanbio@mu.edu.iq					
20. Course Objectives					
Course Objectives	<p>Preparing students for the application stage, preparing them psychologically and educationally for this stage, and how to prepare achievement choices and implement them on learners in schools during the application period.</p> <ul style="list-style-type: none"> - Training students to prepare achievement tests - Training student learners to implement all types of assessment and apply them scientifically to learners - Training student learners to prepare a table of specifications to agree between education content and educational objectives - Training educated students to know the characteristics of a good test, apply them to test know their results, and demonstrate their validity - Strengthening the role of scientific education in the educational curriculum highlighting the importance of the academic aspect in the qualification of graduate students 				
21. Teaching and Learning Strategies					
Strategy	<p>Among the modern strategies that include two basic aspects: the teacher's side, which includes the teaching side, and the learner's side, which includes learning. In the subject of measurement and evaluation, we use a wide variety of modern learning and teaching strategies in order to inform the learners of everything new and up to-date regarding the modern curriculum, in addition to accustoming the learners to using these strategies for the purpose of Applying it learners in schools during the application period</p>				
22. Course Structure					
Week	Hours	Required Learning	Unit or	Learning	Evaluation

Course Description Form

		Outcomes	subject name	method	method
30week	2 hours per week		Study plan attached	Various methods	Various methods

23. 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
 Grade distribution: (10 marks) First semester exam- (15 marks) mid-year- (10 marks) second semester exam -(5 marks) Daily , including daily participation assignments, daily tests and attendance -(60 marks) Final exam .

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Measurement and evaluation (available for free)
Main references (sources)	Measurement and evaluation in education and psychology (Abdel Salam Gouda)
Recommended books and references (scientific journals, reports...)	Summaries and lectures to enrich the university curriculum for fourth-year students in the subject of measurement and evaluation
Electronic References, Websites	View books on measurement and evaluation available on the social networking site

	Scientific material	Theoretical material	date	week
		Measurement and evaluation and its role in the educational process		.١٦
		The concept of measurement and evaluation		.١٧
		Measurement and evaluation purposes		.١٨
		Areas of measurement and evaluation		.١٩
		Types of educational calendar		.٢٠
		Achievement tests		.٢١

Course Description Form

		Types of achievement tests, their purposes and interpretation of their results		.٢٢
		Steps for preparing classroom tests		.٢٣
		Educational objectives, their types and levels		.٢٤
		Formulating educational objectives in a behavioral manner		.٢٥
		Analysis of the content of the study material		.٢٦
		Preparing a table of specifications		.٢٧
		Foundations for renewing the type of items that will be used in tests		.٢٨
		Objective tests		.٢٩
		Its advantages and types		.٣٠

	Scientific material	Theoretical material	date	week
		Arrangement of items in the test		١٦
		Preparing, extracting and printing test instructions		١٧
		Apply the test and analyze the test items		١٨
		Honesty and consistency		١٩
		Essay tests		٢٠
		Characteristics of essay tests		٢١
		Its types and the basics of writing it		٢٢
		Methods of correcting it		٢٣
		Performance tests, their areas of use, and the foundations of their preparation		٢٤
		Oral tests, their characteristics and areas of use		٢٥
		Its advantages and disadvantages		٢٦
		Degrees and ways to benefit from them		٢٧

Course Description Form

		Raw scores and derived scores		۲۸
		Standard scores and percentiles		۲۹
		Methods of interpreting grades		۳۰

Course Description Form

49.	Course Name:				
	Approximation Theory				
50.	Course Code:				
	Math405				
51.	Semester / Year:				
	2025-2026				
52.	Description Preparation Date:				
	10/9/2025				
53.	Available Attendance Forms:				
	Classroom and Google classroom				
54.	Number of Credit Hours :				
	(120 hour per year) / Number of Units (6 units)				
55.	Course administrator's name (mention all, if more than one name)				
	Name: Assist.Prof.. Dr. Mustafa Abbas Fadhel Email: mustafa@mu.edu.iq				
56.	Course Objectives				
	Course Objectives		<ul style="list-style-type: none"> •Identify the concept of Approximation theory, and its types 		
57.	Teaching and Learning Strategies				
	Strategy	<ul style="list-style-type: none"> -Brainstorming -Feedback at lecture time -Collaboration and feedback series 			
58.	Course Structure				
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	<ul style="list-style-type: none"> -Student's ability to distinguish and understand cognitively to diagnose Statistics distributions. -Practice different styles of distributions . -Prossessing thinking skills. 	Polynomials	<ul style="list-style-type: none"> -Deductive -Induction -Discussion -Using Data Show and whiteboard. 	<ul style="list-style-type: none"> -Oral discussion -Daily exams -Monthly exams -Homework assignments.
2	4	=	Least Squares Approximation (Discrete Case)	=	=
3	4	=	Least Squares Approximation (Continuous Case)	=	=

Course Description Form

4	4	=	Introduction to Orthogonal System	=	=
5	4	=	The Legendre Polynomials	=	=
6	4	=	Least Squares Approximations by Legendre Polynomials	=	=
7	4	=	The Chebyshev Polynomials	=	=
8	4	=	Series of Chebyshev Polynomials	=	=
9	4	=	Chebyshev Approximations	=	=
10	4	=	Bezier curves	=	=
11	4	=	B-splines	=	=
12	4	=	B-splines	=	=
13	4	=	Cubic Hermit Interpolation	=	=
14	4	=	Cubic Bessel Interpolation	=	=
15	4	=	Akima's Interpolation	=	=
16	4	=	School training period	=	=
17	4	=	School training period	=	=
18	4	=	School training period	=	=
19	4	=	School training period	=	=
20	4	=	School training period	=	=
21	4	=	School training period	=	=
22	4	=	School training period	=	=
23	4	=	School training period	=	=
24	4	=	Cubic Spline Interpolation	=	=
25	4	=	Cubic Spline Interpolation	=	=
26	4	=	Tensor Product of two linear Spaces of Functions	=	=
27	4	=	Tensor Product of two linear Spaces of Functions	=	=
28	4	=	The Calculation of Tensor Product Interpolant	=	=
29	4	=	Tensor Product Spline Interpolation	=	=
30	4	=	Tensor Product Spline Interpolation	=	=

59. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports etc (40) & (60 final exam)

60. Learning and Teaching Resources

Course Description Form

Required textbooks (curricular books, if any)	
Main references (sources)	<ol style="list-style-type: none">1. Francis Scheid. (1989) <i>Schaum's Outlines Numerical Analysis 2nd ed.</i> McGraw-Hill New York.2. Conte, S.D. and De Boor, C., 2017. <i>Elementary numerical analysis: an algorithmic approach.</i> Society for Industrial and Applied Mathematics.3. كتاب التحايل العددي التطبيقي: باب نظرية التقريب، تأليف أ.د. / إميل شكر الله
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

Course Description Form

58. Course Name:

Functional analysis

59. Course Code:

60. Semester / Year:

Yearly 2025-2026

61. Description Preparation Date:

2-9-2025

62. Available Attendance Forms:

Weekly

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

4 hours units: 6

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

Name: khader sahib tanak

Email: khader_tanaka@mu.edu.iq

65. Course Objectives

Course Objectives

66. Teaching and Learning Strategies

Strategy

Functional analysis is a branch of mathematical analysis that concerned with the study of function spaces. It includes the study of linear spaces, algebraic and analytical methods, the study of transformations such as the immediate transformations and its applications, and the study of functions defined on function spaces by calculating changes.

67. Course Structure

Week	Hours	Unit or subject name	Required Learning Outcomes	Learning method	Evaluation method
1	4	Linear spaces Definition of linear space Multiple examples of Linear Spaces			

Course Description Form

2	4	Properties of linear spaces with examples			
3	4	Subspaces Examples of subspaces			
4	4	Linear transformations Examples of linear transformations			
5	4	Standard linear spaces Examples of standard linear spaces			
6	4	linear space theorems			
7	4	Inequality of Caustic Shortz			
8	4	Cauchy-Schurtz inequality			
9	4	Nutrient spaces: generalizations of some concepts from metric spaces			
10	4	Norm spaces			
11	4	Generalizations of some concepts from metric spaces			
12	4	Metric spaces: Examples and theorems of metric spaces			
13	4	Convergence in norm spaces			
14	4	Convergences in linear spaces			
15	4	Convergence in linear and norm spaces			
16	4	Continuity in a standard linear space			
17	4	Limits in a standard linear space			

Course Description Form

18	4	Banach space Definition of a Banach space Examples of Banach spaces			
19	4	Banach space theorems			
20	4	Orthogonally product spaces			
21	4	Natural orthogonality Examples of natural orthogonality			
22	4	Theorems about natural orthogonality			
23	4	Orthogonality and natural orthogonality			
24	4	Examples and Theorems			
25	4	Inner product spaces			
26	4	Hilbert spaces			
27	4	Pre-Hilbert spaces			
28	4	Examples and Theorems			
29	4	Division spaces			
30	4	Examples Division spaces			

68. Course Evaluation

69. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:	
Complex analysis	
2. Course Code:	
ξ • ٢ Math	
3. Semester / Year:	
٢٠٢٥ – ٢٠٢٦	
4. Description Preparation Date:	
٢٠٢٥/٩/١	
5. Available Attendance Forms:	
Official working hours in the hall	
6. Number of Credit Hours (Total) / Number of Units (Total)	
120 hours (60 theoretical + 60 discussion), 6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Amer Khrija Abed	
Email: amer.khrija@mu.edu.iq	
8. Course Objectives	
Course Objectives	<p>Students know complex numbers and their properties and convert complex numbers to polar ones</p> <ul style="list-style-type: none"> - For students to become familiar with analytical functions and what is related to them in terms of purpose, continuity, and derivation. - To become familiar with the Cauchy-Riemann equations, their sufficient conditions, and harmonic functions. - For the student to become familiar with elementary functions: exponential, logarithmic, trigonometric, hyperbolic trigonometric, and inverse functions. - The student will be familiar with definite integration and linear integration, in addition to the theorems related to integration.
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	The Complex number	Definition of complex numbers and their algebraic properties	Theory through printed lectures from various sources and explaining them on the blackboard, while assigning students weekly assignments and discussing them.	- Conducting short and varied daily exams - Conducting monthly examinations - Writing scientific reports on important topics of the subject
2	4	Geometric representation	Representing a number on the coordinate plane and determining the angle of the number	=	=
3	4	Polar representation	Expressing a complex number using trigonometric functions	=	=
4	4	Exponential representation	Representing a complex number using the exponential function	=	=
5	4	Forces and roots	De Moivre's theorem, its result,	=	=

			and some examples		
6	4	Areas in the nodal plane	Some topological properties of complex numbers	=	=
7	4	Complex functions	Inequality, universal, inverse functions and transformations	=	=
8	4	Exponential functions, trigonometric functions	Characteristics of complex exponential functions and trigonometric functions	=	=
9	4	Limits, continuity	Definition of limits and continuity, their properties and theorems	=	=
10	4	Derivative, rules of derivation	Definition of the derivative and theorems of the rules of derivation with examples	=	=
11	4	Cauchy-Riemann equations	The text of the theorem, its proof and applications	=	=
12	4	Analytical functions	Definition of the analytical function, its properties, and its relationship to derivation	=	=
13	4	Harmonic functions	Definition of harmonic conjugates and Laplace equations	=	=
14	4	Complex integration	Definition of complex integral, types of curves and	=	=

			examples		
15	4	Exams		=	
16	4	Cauchy-Corsa theorem	Text of the theory and its proof with applied examples	=	=
17	4	Cauchy's integral formula	Text of the formula, its generalization and applications	=	=
18	4	Liouville's theorem, Maurer's theorem	Text of theorems with proof and application in trigonometry	=	=
19	4	application			
20	4	application			
21	4	application			
22	4	application			
23	4	application			
24	4	application			
25	4	Sequences and series	Review with definitions and some examples	=	=
26	4	Power series	definitions and methods of convergence tests	=	=
27	4	Poles and residuals,	abnormal points and their details, with solutions to examples and theorems	=	=
28	4	Calculating residuals	methods of calculating the residuals of a function, its theorems, and examples	=	=

29	4	Applications of angle preservatives,	theorems with examples	=	=
30	4	Exams			
11. Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Introduction to complex analysis , Dr. Atallah Thamer Al-Ani Dr. Ibtisam Kamal Al-Din 1999		
Main references (sources)			Complex variables and their applications. Brown R. Churchill 1985 - Complex functions/Schaum's summaries series - Alan Jeffrey, Complex Analysis and Applications,(2006).		
Recommended books and references (scientific journals, reports...)					
Electronic References, Websites			www. Freescience.info/math		

Viewing and application : Course name	.١٣
CREQ 402 : The courseSymbol	.١٤
It is and .. and	.١٥
and .. and	.١٦
Available attendance options ^١ and .	.١٧
Total number of study hours / Total number of credit hours	.١٨
units ξ /	

If more than one name is)Name of the course coordinator .١٩ (mentioned					
nibrasmosafr@mu.edu / Email Name:Mr. Nebras Musafir Shakir					
. andGoals .٢٠					
. and . and . and. and			. andObjectives of the study material the application stage and preparing them chologically and educationally for this .stage		
. and .٢١					
. and large and diverse set of learning and teaching strategies is used in the ervation and application material in order for students to become familiar .with it and with what pertains to the modern curriculum					
. and .٢٢					
on Evaluati	Method of learning		. and	. and	The
and Questi. ons and Evaluat. tion	Method The dialogue	. and	Knowledge of the te practical education, importance, and .foundations	Th ree	١
	Application	. and Students practically in every stage	. and		٢
	Dialogue method the discussion . and	The importance of this stage for the practicing .student, its foundations, and its stages	. and		٣
	Application	Types of study plans . and -Unit elements - The study unit -and Importance of the daily plan	The concept of plannin and its importance . and		٤
	. and	Its classifications -and . .	Behavioral		٥
	Method The lecture	and .Water	BehavioralGoals		٦
		. and .and The role of -Moral values and principl the educator in st ٧)Confronting the challenges of th	. and		٧

		century Examples of professional ethics		
		-Objectives of classroom question Principles of its -Agarand Teaching -Skills -formulation . guidelinesand	. and	is 8
		its -importance Its -Its concep - its patterns -dimensions factors that contribute to -Elemen the emergence classroomManagement. and . and	The andadministrati	is 9
		-What does he teach -Why does he tea How does he teach	The good lesson	10
		Practical lessons	. and	11
		. and	. and	12
		Practical lessons	Microteaching	irte en
		Practical lessons	. and	14
		. and	. and	15
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				27
				28
				29
				30

Course evaluation 23

according to the tasks assigned to the student, such as daily 100 Distribution of the score out of
preparation, daily oral exams, monthly exams, written exams, and reports, etc
.points 100 The first. and •
.degrees 100 —Central exam •
isScores 0 Weekly. and •
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• Scientific supervisor • —School Management Evaluation (Management(a evaluation form • Field visit in the application stage worth ٧ points • (after the application phase, a student is handed ١ points	
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ricula and Teaching Methods / Mohamed Mahmoud Heela-Al	. . Books and referencesThe supportand
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