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

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: Yearly

Description Preparation Date: / /2024

File Completion Date: / /2024

Signature:

Name: Assist. Prof. Dr. Amer Himza Ali

Head of Department

Date: 6/10/2024

Signature:

Name: Prof. Dr. Mohenned Alsaadawi

Scientific Associate

Date: 6/10/2024

The file is checked by: Assist. Prof. Dr. Mustafa Abbas Fadhel

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: / /2024

Signature:

Approval of the Dean

Assist.Prof. Dr. Taisir Abdulelah Kadhim

Date: 6/10/2024

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?

Yes, 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 Courses	Credit hours	Percentage	Reviews*
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	٣	2	٨
Foundations of Mathematics	Math101	٢	2	٦
Linear Algebra	Math102	٢	2	٦
General Physics	Math103	٢	-	٤
Computer Science	UREQ103	١	-	٢
Foundations of Education	CREQ100	٢	-	٤
Educational Psychology	CREQ101	٢	-	٤
Arabic Language	UREQ101	١	-	٢
English Language	MUR101	١	-	٢
Human rights and democracy	UREQ102	١	-	٢
Total		1٧	٦	40

Second Year

Course Name	Course Code	Number of Hours	Units

		Theoretical	Practical	
Advanced Calculus	Math200	٣	2	٨
Group Theory	Math201	٢	1	٥
Ordinary Differential Equations	Math٢02	٢	2	٦
Geometry and Axiomatic Systems	Math٢03	٢	1	٥
Computer Sciences	UREQ201	–	2	٢
Administration and Supervision	CREQ201	٢	-	٤
Developmental Psychology	CREQ202	٢	-	٤
Arabic Language	UREQ201	١	-	٢
English Language	MUR201	١	-	٢
Baath Party Crimes		١	-	٢
Total		16	8	40

Third year

Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	
Mathematical Analysis	Math300	٢	٢	٦
Numerical Analysis	Math٣٠١	٢	٢	٦
Probability	Math٣٠٢	٢	٢	٦
Rings	Math٣٠٣	٢	٢	٦
Partial Differential Equations	Math٣٠٤	٢	١	٥
Philosophy of Scientific Research	Math٣٠5	٢	–	٤
Curricula and Teaching Method	CREQ300	١	٢	٤
Educational Guidance	CREQ302	٢	–	٤
Total		16	11	41

Forth year

Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	

Topology	**Math400**	٢	٢	٦
Mathematical Statistics	**Math401**	٢	٢	٦
Complex Analysis	**Math402**	٢	٢	٦
Operations Research	**Math405**	٢	٢	٦
Graph Theory	**Math407**	٢	٢	٦
Graduation Research Work	**Math403**	–	٢	٢
Measuring and Amendment	**CREQ401**	–	٢	٤
Professional ethics	**MUR402**	١	–	٢
Practical Teaching	**CREQ402**	١	٢	٤
Total		15	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 Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof. Qays Hatem Imran	Mathematics	Topology			✓	
Assist. Prof. Dr. Amer Himza Ali	Mathematics	Topology			✓	
Assist. Prof. Dr. Hajem Ati Daham	Mathematics	Operations Research			✓	
Assist. Prof. Dr. Ahmed S. Jbara	Physics	Nanotechnology			✓	
Assist. Prof. Dr. Mustafa Abbas Fadil	Mathematics	Numerical Analysis			✓	
Dr. Ahmed A. Talib	Mathematics	Ordinary Differential			✓	
Dr. Alya'a Abdulkadhim Sabry	Physics	Nuclear Physics			✓	
Tech. Amer Khrija Abed	Mathematics	Topology			✓	
Tech. Shaker Razag Abd alkareem	Computer	Computer			✓	
Oras Basim Jamil	Mathematics	Numerical Analysis			✓	
Tech. Ekram Abd Ali	Mathematics	Dynamical Systems			✓	
Ahmed Salam Razzaq	Mathematics	Numerical Analysis			✓	

Hadeel Hadi Abo-Alsood	Mathematics	Cryptography			✓	
Anwaar Mousa	Computer	Computer			✓	
Tech. Marwa Adnan	Arabic	Methods of Teaching			✓	
Asst. Tech. Sattar Hussein Abed	Physics	Physics			✓	
Prof. Mohenned Alsaadawi	Parasitology	Immunity of Parasite			✓	
Asst. Tech. Nibras Mosafr Shakir	History	Methods of Teaching			✓	
Asst. Tech. Sarab Kazim Hassan	Mathematics	Dynamical Systems				✓
Tech. Mohammed Hassan Hamza	Mathematics	Encryption				✓
Dr. Ali Jawad Obada	Arabic	Arabic				✓
Dr. Hasan Jumaah Mrayeh	Mechanical Engineering	Refractories				✓
Asst. Tech. Shahad Mansoor	Arabic	Arabic				✓
Asst. Tech. Ahlam Adnan Jappar	Arabic	Arabic				✓
Asst. Tech. Abbas Athib Abdullah	Arabic	Accurate Analysis Quranic Text				✓
Asst. Tech. Nrjs Trky Jyad	History	History Modern				✓

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	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
	UREQ103	Computer Science	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
	CREQ100	Foundations of Education	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
	CREQ101	Educational Psychology	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
	UREQ101	Arabic Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
	MUR101	English Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
	UREQ102	Human rights and democracy	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
Second Year	Math200	Advanced Calculus	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
	Math201	Group Theory	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	

	Math٢02	Ordinary Differential Equations	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math٢03	Geometry and Axiomatic Systems	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	UREQ201	Computer Sciences	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ201	Administration and Supervision	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ202	Developmental Psychology	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	MUR201	English Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
		Baath Party Crimes	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
Third year	Math300	Mathematical Analysis	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math٣٠١	Numerical Analysis	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math٣٠٢	Probability	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math٣٠٣	Rings	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math٣٠٤	Partial Differential Equations	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math٣٠5	Philosophy of Scientific Research	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓

	CREQ300	Curricula and Teaching Method	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ302	Educational Guidance	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	MUR301	English Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
Forth year	Math400	Topology	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math401	Mathematical Statistics	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math402	Complex Analysis	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math405	Approximation theory	optional	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math407	Graph Theory	optional	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	Math403	Graduation Research Work	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ401	Measuring and Amendment	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	MUR401	English Language	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	MUR402	Professional ethics	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	CREQ402	Practical Teaching	Basic	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓

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

Course Description Form

1. Course Name:

Linear Algebra

2. Course Code:

Math 102

3. Semester / Year:

2024/2025 Year

4. Description Preparation Date:

10/9/2024

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

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 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**)**	=	=

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

Course Description Form

1. Course Name:
General Physics
2. Course Code:
Math 103
3. Semester / Year:
Academic Year (2024-2025)
4. Description Preparation Date:
7/ 9/ 2024
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: Dr. Alya'a Abdulkadhim Sabry Email: alyaa_ros@mu.edu.iq
8. Course Objectives

Course Objectives	**Teaching students information about physics and how to use mathematical laws and employ them in important physical problems, especially in the fields of mechanics, electricity, and magnetism.**

9. Teaching and Learning Strategies	
Strategy	**Using various means to deliver the scientific material to the student, including preparing electronic lectures, presenting the scientific material during the lecture, the method of discussion, forming groups to solve the exercises, students participating in the lecture by answering the questions asked, and other methods used.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30 weak	**2hours per weak**		**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 - (15 marks) Mid-year exam - (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)	**General Physics "Mechanics - Electricity and Magnetism" "Solved problems in mechanics, electricity and magnetism"**
Main references (sources)	**Relying mainly on methodological books because they meet the purpose and include all the curriculum components.**
Recommended books and references (scientific journals, reports...)	No thing
Electronic References, Websites	No thing

Course Description Form

1. Course Name:

Fundamental Mathematics

2. Course Code:

Math101

3. Semester / Year:

Yearly

4. Description Preparation Date:

10-9-2024

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: Dr. Mustafa Abbas Fadhel
Email: mustafa@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

13. Course Name:
Foundations of Education
14. Course Code:
CREQ 201
15. Semester / Year:
2024-2025
16. Description Preparation Date:
10/9/2024
17.Available Attendance Forms:
Came
18.Number of Credit Hours (Total) / Number of Units (Total)
60 hours annually 4 units per week
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 the historical basis education** **● Introducing them to the social basis of educatio** **● Introducing them to the economic basis education** **● Training them on the educational foundations principles in practice**
Introducing students to the basics education and preparing them to work the educational field	

21. Teaching and Learning Strategies	
Strategy	Using classical teaching methods such as explanati clarification and lecture, in addition to modern teaching metho such as discussion and dialogue between the stude themselves and applying educational foundations. View

22. Course Structure

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

30 weeks	Two hours	Knowledge education as concept a terminology		Delivering, dialogue a discussion	Evaluation questions

23. Course Evaluation

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

Exam 1 10
Daily reports 2 points
Attendance 3 points
Exam 2 15 points
Exam 3 10 points
Final exam/ 60 points

24. Learning and Teaching Resources

Required textbooks (methodology if any))	no
Main references (sources)	Illuminations in the Fundamentals Education/ Qasim Qahwan
Recommended books and references (scientific journals, reports…)	Family and Child Rearing/ Hoda Nashef
Electronic References, Websites	Websites related to educatio sciences and their foundations

Course Description Form

25. Course Name:	
Ordinary Differential Equations	
26. Course Code:	
Math 202	
27. Semester / Year:	
Academic Year (2024-2025)	
28. Description Preparation Date:	
7/ 9/ 2024	
29. Available Attendance Forms:	
Attendance lectures	
30. Number of Credit Hours (Total) / Number of Units (Total)	
(120 Hours) per year / (6 Units)	
31. Course administrator's name (mention all, if more than one name)	
Name: Dr. Alya'a Abdulkadhim Sabry Email: alyaa_ros@mu.edu.iq	
32. Course Objectives	
Course Objectives	**Introducing students to the types of equations in general and differential equations in particular, and studying the relationship between differentiation and integration and differential equations, then focusing on ordinary differential equations and studying them in detail by introducing them, methods of solving them, their types, and how to employ them in important issues, especially issues of daily life.**
33. Teaching and Learning Strategies	
Strategy	**Using various means to deliver the scientific material to the student, including preparing electronic lectures, presenting the scientific material during the lecture, the method of discussion, forming groups to solve the exercises, students participating in the lecture by answering the questions asked, and other methods used.**

34. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30 weak	**4 hours per weak**		**Study plan attached**	**Various methods**	**Various methods**

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

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

36. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Differential Equations - Part One -
Main references (sources)	**Ordinary differential equations solutions and applications** **Al-Murshed to solving ordinary differential equations**

Course Description Form

Recommended books and references (scientific journals, reports...)	No thing
Electronic References, Websites	No thing

Course Description Form

1. Course Name:
Secondary education and educational administration
2. Course Code:
CREQ 202
3. Semester / Year:
Academic yearn (202٤ −202٥)
4. Description Preparation Date:
٢٠٢٤/٩/١٠
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 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.**

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.

10. Course Structure

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

30weak	2 hours per weak		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- (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)	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**

Course Description Form

	Scientific material	Theoretical material	date	week
		Definition of management in general		١.
		Classroom, school and educational management		٢.
		Time management and scheduling of lectures or lessons		٣.
		Human Resource Management		٤.
		A contemporary vision of educational administration		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.
		Educational leadership		١١.
		The importance and necessity of leadership		١٢.
		Leadership and management		١٣.
		Leadership characteristics, styles and theories		١٤.
		Leadership characteristics, styles and theories		١٥.

Course Description Form

Lesson schedule - for the second semester

	Scientific material	Theoretical material	date	week
		The relationship of educational administration to successful administratior		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

1. Course Name:
Developmental Psychology
2. Course Code:
CREQ 201
3. Semester / Year:
2024-2025
4. Description Preparation Date:
٢٠٢٤/٢/٢٦
5. Available Attendance Forms:
Came
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours annually 4 units per week
7. Course administrator's name (mention all, if more than one name)
Name: shahad mansoor majeed Email: shahad.mansoor@mu.edu.iq
8. Course Objectives

Course Objectives Identify developmen psychology, its stages, theor and manifestations	..... • **Understand the general meaning of developme psychology** ..... • **Identify the most important principles and laws of gro** ..... • **Knowledge of theories of growth and division**

9. Teaching and Learning Strategies	
Strategy	Discussion method, group participation, student self-activity by collecting information about the material and presenting it in the classroom

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30 weeks	Two hours			Miscellaneous methods	Miscellaneous 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

12. Learning and Teaching Resources

Required textbooks (curricular books if any)	The psychology of growth in childhood a adolescence
Main references (sources)	Fundamentals of childhood and adolescen psychology
Recommended books and references (scientific journals, reports…)	No
Electronic References, Websites	No

13. Course Name:

Numerical Analysis

14. Course Code:

Math 301

15. Semester / Year:

2024/2025 Year

16. Description Preparation Date:

10/9/2024

17. Available Attendance Forms:

Classroom and Google classroom

18. Number of Credit Hours :

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

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

Name: Asst. Prof. Dr. Ahmed S. Jbara
Email: ahmedsbhe@mu.edu.iq

20. 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.

21. Teaching and Learning Strategies

Strategy	**-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	- 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**)**	=	=
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**)**	=	=
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**)**	=	=

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)	١. مقدمة في التحليل العددي، تأليف الدكتور احمد صالح الالوسي و عادل زينل البياتي. ٢. مبادئ التحليل العددي، تأليف الدكتور علي صادق سيفي و الدكتوره ابتسام 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/

1. Course Name:

Probability

2. Course Code:

Math 302

3. Semester / Year:

٢٠٢٤-٢٠٢٥

4. Description Preparation Date:

٨/٩/2024

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: Ass. Prof. Dr. Hajem Ati Daham
Email: hajem.daham@mu.edu.iq

8. Course Objectives

Course Objectives	**-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 discussio
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 whiteboar	Homework assignment

5	4	Organize and display metadata	Organize and display metadata		
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 resolt-Generating functions	The resolt-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	Intermittent Probability		

		distributions	distributions		
29	4	Normal distribution	Normal distribution		
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)	١-المشهداني,محمود حسن وهرمز,أمير حنا"الإحصاء" العراق/جامعة بغداد ١٩٨٩ لغرابي,سليم إسماعيل وسيفي,علي محمد صادق"مبادئ الإحصاء" العراق/جامعة بغداد ١٩٨٥
Main references (sources)	R.Hoggand A.Grage "Introduction to mathemati 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 2024-2025

4. Description Preparation Date:

١٠/٩/2023

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: Asst. Prof. Dr. Amer Himza
Email: amerhimzi@mu.edu.iq

8. Course Objectives

Course Objectives	On completion of this course; the student will be abl understand fundamentals and concepts of Sequences series then study the convergence. Also, study the Rim and Lubuge Integral

9. Teaching and Learning Strategies

Strategy	We use examples and explain writing on board and so use discuses for more understand. So we give homeworks and discuses it.

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

9	4		**Accumulation Points**		quiz
10	4		**Open and Closed Sets**		quiz
11	4		**Compact Sets**		quiz
12	4		**Bouneded 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 Bouneded Sets**		quiz
24	4		**Measure of unbounded Sets**		quiz
25	4		**Measureable 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

25.	Course Name:
	Ring theory
26.	Course Code:
	Math303
27.	Semester / Year:
	202٤/202٥
28.	Description Preparation Date:
	٩/٩/2024
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: Assit. Lec. Sarab Kazim Hassan Email: sarab.kadhim@mu.edu.iq
32.	Course Objectives

Course Objectives	• **Identify the concept Ring,Modulo,Representation, its types a applications**.
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 special theories and principles.** **-Practice different styles of mathematics proofs.** **-Prossessing thinking skills.**	**Definitions of Ring, commutative ring and ring with identity.**	**-Deductive** **-Induction** **-Discussion** **-Using Data Show and whiteboard**.	**-Oral discussion** **-Daily exams** **-Monthly exams** **-Homework assignments**.
2	4	=	**Divisors of zero,Integral domain**	=	=

3	4	=	**Subring,Field,Field 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 1st fundamental theorem**	=	=
18	4	=	**The 2nd and 3rd 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**	=	=
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 repersentation**	=	=

35. 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)

36. 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	-

Course Description Form

37. Course Name:
Partial differential equations
38. Course Code:
Math ٣٠٤
39. Semester / Year:
2024-2025
40. Description Preparation Date:
9/9/2024
41.Available Attendance Forms:
42.Number of Credit Hours (٤) / Number of Units (٦)
4/6
43. Course administrator's name (mention all, if more than one name)
Name: Assis. Sarab kazim Hassan Email: sarab.kadhim@mu.edu.iq
44. Course Objectives

Course Objectives	**The student understands the concept of partial differential equation and is able to find general solutions hat is specific to it depends on the rank, degree, and standard form it possesses**

45. 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 serie** **Wave equation in one dimension.**

46. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	A general introduct and some basic Definitions and concepts examples	A general introduct and some basic Definitions and concepts examples	deductive	Oral discussio
2	4	Discussion	Discussion	Induction	Daily exams
3	4	Solving	Solving	Discussion	Monthly exam

		partial differen equations	partial differen equations		
4	4	Discussion	Discussion	Use of colored pens and whiteboar	Homework assignment
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 confficients of higher order	Homogeneous linear equation with fixed confficients 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 tha range	Fourier integrals of half tha 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		
27	4	Heat equation	Heat equation		
28	4	Discussion	Discussion		
29	4	Discussion	Discussion		
30	Exam				

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)	
Main references (sources)	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

1. Course name: Curricula and teaching methods

2. Code The decision:CREQ 300

3. the chapter /Year:Semester 2024-2025

4. Date of preparation of thisDescription: 12/9/2024

5. AAvailable attendance formsAttendance in classrooms.

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:M.M Nebras Traveler Thankful Email:nibrasmosafr@mu.edu.iq

8. Goals The decision

- Introducing students to old and modern teaching methods. - Introducing students to the types of assessment and its uses ir 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//identi cat Students in This is amazing Stage on The curriculum And the com ari between The curriculum Hadith And the old And to view on Methods T ach Modern And knowledge Strategies Teaching A d differentiation between The method And the style and strategy And it is considered This is amazing Stage be inn Rehabilitation Educational Academic For students And prepare them For the st Application Next in Stage Fourth.

9. Strategies education And learning

Course Description Form

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

10. Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Watches	The week
Question Calendar	Method Dialogue discussion Method Learnir Cooperative	Concepts General For the material Curricula And methods Teaching Concept Science And its compone And its characteristics - Understood The curriculum And regulations Foundations building The curriculum(basis Cognitive The basis Social) Foundations building The curriculum(basis Philosophical Th basis Psychological) Types Curricula Academic(Curricu Separate And interconnected And method Activity Types Curricula Academic(Methodology Areas The spacious and units	- knowledge Curricula Teaching Modern. - knowledge road Teaching And methods Teaching Different And the differentiation Between the Get to knowFoundationsCurricula. - Setting up Students To wri the plan Annual And the plan Daily. - Recognition on Types Calendar And its uses in The process Educational. knowledge The book Schoo And its contents Curriculum development.	3	The week The week The week The week The week The week The week The week The week The week 0 Week 11 Week 12 Week 13 The week 4 Week 15 Chapter Tv The week The week The week The week The week The week

		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 Repo - Exam The month the second - Exams the chapter Academic the first Review General For the material t chapter the first Concept road Teaching And reaso - diversity Methods Teaching Style Teaching And its strategies Method The lecture and discussio And dialogue Investigative. Method solution Problems And education . and cooperative learning The way Exploratory Exam The month the first Techniques Educational Education Electronic Calendar And its types Questions Classroom Planning Annual And the daily Applications practical Applications practical			The week The week The week The week 0 Week 11 Week 12 Week 13 Week 14 Week 15

Course Description Form

		exam The month the second			

11. Course Evaluation

distribution Degree from100on according to Tasks The person in charge With it The student like Preparation Daily And exams Daily and oral And monthly and editorial and reports....etc

1- exam The month the first.....10grades.

2- Reports Weekly Editorial..... 2Two degrees per a report.

3- Enhance role Education The process in The hall(performance lesson with writing plan) ..... 1per to implement lesson.

4- exam The month the second or half Year..... 15degree.

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 tha found)
Strategies development Curricula And methods Teach Modern/ Dr. Majid Ayoub Al-Qaisi	the reviewer President(Sources)
Summaries And lectures Special The curriculum University students Stage Third in material Curricula and teaching methods	Books References chock that Recommended With it(Magazines Scientific, Reports....)
examining on Books Private With material Curricula and teach methods The one present on Sites communication Social.	the reviewer Electronic , Sites The Internet

Course Description Form

1. Course Name:
Psychological painting
2. Course Code:
CREQ302
3. Semester / Year:
Academic yearn (202 ٤−202٥)
4. Description Preparation Date:
٢٠٢٤/٩/١٠
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

٣٠ weak	2 hours per weak		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- (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		٠٧
		Educational counseling theories		٠٨
		General foundations of educational guidance		٠٩
		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

		General concepts of educational guidance		٢٩
		Testing		٣٠

Course Description Form

49. Course Name:

Mathematical Statistics

50. Course Code:

Math401

51. Semester / Year:

2024/2025

52. Description Preparation Date:

8/9/2024

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: Ass. Prof, Dr. Hajem Ati Daham
Email: hajem.daham@mu.edu.iq

56. Course Objectives

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

57. Teaching and Learning Strategies

Strategy	**-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	**-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	=	=
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	=	=

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

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

Course Description Form

61. Course Name:	
Topology	
62. Course Code:	
Math400	
63. Semester / Year:	
Yearly – 2024/2025	
64. Description Preparation Date:	
16/9/2024	
65.Available Attendance Forms:	
Weekly	
66.Number of Credit Hours (Total) / Number of Units (Total)	
4/6	
67. Course administrator's name (mention all, if more than one name)	
Name: Prof. Qays Hatem Imran Email: qays.imran@mu.edu.iq	
68. Course Objectives	
Course Objectives	Providing students with general information about the basic concepts of general topology.
69. Teaching and Learning Strategies	
Strategy	

70. 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**			

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**			
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**			

71. 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

72. Learning and Teaching Resources

Required textbooks (curricular books, if any)	التبولوجيا العامة (د.سمير بشير الحديد), التبولوجيا العامة (د.عريبي الزوبعي وعطاالله 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

Course Description Form

73.	Course Name:
	Approximation Theory
74.	Course Code:
	Math405
75.	Semester / Year:
	2024-2025
76.	Description Preparation Date:
	10/9/2024
77.	Available Attendance Forms:
	Classroom and Google classroom
78.	Number of Credit Hours :
	(120 hour per year) / Number of Units (6 units)
79.	Course administrator's name (mention all, if more than one name)
	Name: Lec. Dr. Mustafa Abbas Fadhel Email: mustafa@mu.edu.iq
80.	Course Objectives
Course Objectives	•**Identify the concept of Approximation theory, and its types**
81.	Teaching and Learning Strategies
Strategy	**-Brainstorming** **-Feedback at lecture time** **-Collaboration and feedback series**

82. 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.**	**Polynomials**	**-Deductive** **-Induction** **-Discussion** **-Using Data Show and whiteboard**.	**-Oral discussion** **-Daily exams** **-Monthly exams** **-Homework assignments**.
2	4	=	**Least Squares Approximation (Discrete Case)**	=	=

3	4	=	**Least Squares Approximation (Continuous Case)**	=	=
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**	=	=

83. 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)

Course Description Form

84. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	1. Francis Scheid. (1989) *Schaum's Outlines Numerical Analysis 2nd ed.* McGraw-Hill New York. 2. Conte, S.D. and De Boor, C., 2017. Elementary numerical analysis: an algorithmic approach. 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	

13. Course Name:	
Measurement and evaluation	
14. Course Code:	
CREQ 401	
15. Semester / Year:	
Academic yearn (202٤ −202٥)	
16. Description Preparation Date:	
٢٠٢٤/٩/١٠	
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: Ahlam Adnan Jabbar Email: ahlam.adnan@mu.edu.iq	
20. Course Objectives	
Course Objectives	**Preparing students for the application stage, preparing them psychologically and educationally for this stage, and how to prepare achievement choices and implement ther on learners in schools during the application period.** **- 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 educatio content and educational objectives** **- Training educated students to know the characteristics of a good test, apply them to tes know their results, and demonstrate their validity** **- Strengthening the role of scientific education in the educational curriculum and highligh the importance of the academic aspect in the qualification of graduate students**
21. Teaching and Learning Strategies	
Strategy	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 accustomi

	the learners to using these strategies for the purpose of Applying it learners in schools during the application period

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
30weak	2 hours per weak		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
		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
		Raw scores and derived scores		٢٨
		Standard scores and percentiles		٢٩
		Methods of interpreting grades		٣٠