

Academic Program Description Form

University Name: University of Basrah.

Faculty/Institute: College of education for pure sciences.

Scientific Department: Department of Mathematics.

Academic or Professional Program Name: Mathematics.

Final Certificate Name: Sciences in Mathematics.

Academic System: Annual system.

Description Preparation Date: 2025-2026

File Completion Date: 2025-2026



Signature:

A handwritten signature in blue ink, appearing to be "H. Al-hajjaj", enclosed within a light blue oval border.

Head of Department Name:

Dr. Haitham Abdulsada Al-hajjaj

Date: 2025

Signature:

A handwritten signature in blue ink, appearing to be "H. Kassim", with a long horizontal stroke extending to the right.

Scientific Associate Name:

Prof. Dr. Haider Kassim Fadil

Date: 2025

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Prof. Dr. Hussein Ali Al-Badran

Date: 2025

Signature:

A handwritten signature in blue ink, appearing to be "H. Al-Badran", with a long horizontal stroke extending to the right.

A handwritten signature in blue ink, appearing to be "M. Jassim", with a long horizontal stroke extending to the right.

Approval of the Dean

Prof. Dr. Majid M. Jassim

1. Program Vision

The College of Education for Pure Sciences seeks to be one of the leading higher education institutions at the University of Basrah in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving society in the fields of mathematics and its life applications.

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in mathematics and its applications and to develop the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively and emphasizing social and cultural values and responding to the requirements of the local market.

3. Program Objectives

- ❖ Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.
- ❖ Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations.
- ❖ Spreading the culture of human diversity in society, transferring mathematical knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.
- ❖ The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges to achieve best practices in the fields of education and learning.

- ❖ Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.
- ❖ Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of mathematics applications and interest in studying modern mathematics.
- ❖ Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment.

4. Program Accreditation

No

5. Other External Influences

No

6. Program Structure

Program Structure	Number of Courses	Academic Unit	Percentage	Reviews*
Institution Requirements	150	150		Core Course
College Requirements	Yes			
Department Requirements	Yes			
Summer Training	No			
Other				

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

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
2025-2026/First	——	Calculus	Theoretical	Practical
2025-2026/First	——	Fundamentals of Mathematics	Theoretical	Practical
2025-2026/First	——	Linear Algebra	Theoretical	Practical
2025-2026/First	——	Theoretical physics	Theoretical	——
2025-2026/First	——	Fundamentals of Education	Theoretical	——
2025-2026/First	——	Educational Psychology	Theoretical	——
2025-2026/First	——	Computer 1	Theoretical	——
2025-2026/First	——	Arabic Language	Theoretical	——
2025-2026/First	——	English Language	Theoretical	——
2025-2026/First	——	Democracy and Human Rights	Theoretical	——
2025-2026/First	——	Sport Education	——	Practical
2025-2026/First	——	Art Education	——	Practical
2025-2026/Second	——	Advanced Calculus	Theoretical	Practical
2025-2026/Second	——	Ordinary Differential Equations	Theoretical	Practical
2025-2026/Second	——	Systems of Axioms and Geometry	Theoretical	——
2025-2026/Second	——	Group Theory	Theoretical	——
2025-2026/Second	——	Educational administration and supervision	Theoretical	——
2025-2026/Second	——	Curriculum and School Books	Theoretical	Practical
2025-2026/Second	——	Teaching Thinking	Theoretical	——
2025-2026/Second	——	Computer 2	Theoretical	——
2025-2026/Second	——	Arabic Language	Theoretical	——
2025-2026/Second	——	English Language	Theoretical	——
2025-2026/Second	——	Baath Regime Crimes	Theoretical	——
2025-2026/Third	——	Mathematical Analysis	Theoretical	Practical
2025-2026/Third	——	Probability and Statistics	Theoretical	Practical

2025-2026/Third	——	Partial Differential Equations	Theoretical	Practical
2025-2026/Third	——	Algebra of Rings	Theoretical	Practical
2025-2026/Third	——	Numerical Analysis	Theoretical	Practical
2025-2026/Third	——	Counseling and Psychological Health	Theoretical	Practical
2025-2026/Third	——	Curricula and Teaching Methods	Theoretical	Practical
2025-2026/Fourth	——	Topology	Theoretical	Practical
2025-2026/Fourth	——	Complex Analysis	Theoretical	Practical
2025-2026/Fourth	——	Mathematical Statistics	Theoretical	Practical
2025-2026/Fourth	——	Applied mathematics	Theoretical	Practical
2025-2026/Fourth	——	Approximation theory	Theoretical	Practical
2025-2026/Fourth	——	Research Project	——	Practical
2025-2026/Fourth	——	Measurement and evaluation	Theoretical	——
2025-2026/Fourth	——	Practical education	Theoretical	Practical

8. Expected Learning Outcomes of the Program

Knowledge

A. Cognitive Objectives

1. The student should be able to recall and retain the information and principles presented in the course.
2. The student should understand the course topics and the mathematical problems related to them.
3. The student should be able to apply what they have learned in solving mathematical problems.
4. The student should be able to analyze the problem statement and organize the given information in order to utilize it effectively and obtain correct results.
5. The student should be able to construct problems related to the course topics and subsequently derive their correct solutions.

	<p>6. The student should develop conceptual insights into the course material and be able to identify and derive the appropriate formulas needed for problem-solving.</p> <p>7. Explaining the importance of applied mathematics and its relationship with other sciences and benefiting from it in other applied journals that affect reality and society.</p> <p>8. Informing students about the importance of studying theories and the extent to which the subject can be applied in engineering and physics</p> <p>9. Preparing the student scientifically so that he is able to possess basic information about the curriculum, teaching methods, and properly plan the lesson... etc.</p>
--	--

Skills	
<p>B. Program-Specific Skill Objectives</p>	<ol style="list-style-type: none"> 1. The student must demonstrate the required mathematical laws related to the course vocabulary. 2. The student should use the appropriate laws to solve each problem. 3. The student must be proficient in linking topics that can be linked within the course vocabulary. 4. The student should distinguish between the uses of theorems and laws during the solution. 5. Developing students' perceptions of the subject and crystallizing their ideas in realistic applied fields. 6. Expanding the student's understanding of the subject and thinking about using it in other fields. 7. That the student can prepare objectives and test questions, plan the lesson, and employ what he has learned to manage the class.

Ethics

1. The student should demonstrate interest in the material presented by the instructor.
2. The student should develop a clear appreciation of the importance of the subject matter being studied.
3. The student should be able to organize given data effectively in order to solve mathematical problems.
4. The student should be able to discuss and justify solutions to mathematical problems and propose additional possible alternatives.
5. The student's ability to share and exchange ideas should be strengthened.

Some ways to develop students' abilities to share ideas:

1. Creating a safe environment for expressing opinions:

Faculty members in the Department of Mathematics must create a safe environment in which students can express their opinions without fear of ridicule or criticism.

2. Encouraging discussion and debate:

Classroom discussion and debate can be encouraged by posing open-ended questions and motivating students to exchange ideas.

3. Use of interactive teaching techniques:

Interactive instructional techniques-such as discussion groups and brainstorming-can be used to enhance students' abilities to share and exchange ideas.

4. Providing opportunities for collaborative work:

Collaborative work opportunities can be provided through group-based projects.

5. Providing students with the opportunity to give illustrative presentations:

Students can be given the opportunity to deliver illustrative presentations to explain their ideas and projects.

6. Assessing students based on their ability to share and communicate ideas:

Students can be assessed on their ability to share ideas through tasks that require them to express their opinions and explain their ideas.

7. Providing opportunities for students to participate in conferences and workshops:

Opportunities can be provided for students to participate in conferences and workshops to share their ideas.

8. Using social media to share ideas:

Social media can be used to share ideas with other students and experts in the field of mathematics.

9. Providing opportunities for students to communicate with graduates of the Mathematics Department:

Opportunities can be provided for students to communicate with graduates of the Mathematics Department to learn about their experiences in sharing ideas in the field of work.

9. Teaching and Learning Strategies

This part of the strategy includes the teaching methods used that are in line with the nature of the mathematics student and that impose different educational methods that suit them and achieve the maximum benefit. In order to achieve this desired benefit, the department's education system relies on self-paced, interactive and applied learning methods by following different methods of teaching and learning methods:

Teaching and learning methods in the department

1. Lectures:

Lectures are one of the basic methods of the Mathematics Department, as they aim to provide the student with advanced mathematical concepts, theories, and methods. The lecture focuses on presenting scientific material in an analytical and systematic manner that helps students develop their abilities in logical thinking and mathematical reasoning. The lectures also encourage students to link theoretical concepts to scientific applications in various branches of mathematics, such as algebra, analysis, statistics, and equations. Students are expected to actively participate in class discussions and ask questions to enhance a deeper understanding of the material.

2. Discussion:

Discussion is an important part of the learning process in the Mathematics Department, as it gives students the opportunity to exchange ideas and discuss different solutions to mathematical problems. Each student is required to actively participate in the discussion by presenting his ideas or presenting his method of solution. Students are also encouraged to work collectively and compare solutions to develop critical thinking skills. Some sessions are devoted to reviewing difficult concepts or applying theories to real-life examples, with the aim of consolidating understanding and stimulating mathematical creativity among students.

3. Brainstorming

The brainstorming strategy is considered one of the modern instructional approaches employed in teaching courses within the Department of Mathematics. It aims to stimulate students' creative and logical thinking skills. This strategy is based on presenting an open-ended mathematical problem or question and encouraging students to generate as many ideas and possible solutions as they can, without criticism or restriction during the initial phase of idea generation.

This approach contributes to the development of higher-order thinking skills and fosters a spirit of collaboration and collective discussion among students. It also enhances students' self-confidence in presenting and justifying mathematical solutions. Furthermore, brainstorming helps bridge theoretical mathematical concepts with practical applications, thereby promoting deeper understanding and improving students' ability to solve problems using diverse methods.

The strategy is implemented in the classroom through small working groups under the supervision of a faculty member, who facilitates the dialogue, organizes ideas, and guides the discussion toward identifying the most appropriate and accurate solutions

4. Practical Application

A considerable number of the courses taught in the department include a practical component. Under this approach, students apply the concepts and theoretical material previously explained by the faculty member, working under their direct supervision and guidance.

5. Education based on technical resources

Computer-aided learning - audio-visual media - World Wide Web (www)

10. Assessment Methods

In the Department, student assessment methods are designed to measure the targeted learning outcomes that have been achieved through the previously implemented teaching strategies. Students are evaluated through the following methods:

Written theoretical examinations and practical tests are employed to measure all targeted learning outcomes that can be assessed through such evaluation methods. These assessments are not limited to measuring knowledge alone; rather, they also evaluate higher-order cognitive skills through the diversification of question formats and assessment styles. The assessment process includes:

- Submission of reports on each topic presented or studied.
- Evaluation through daily quizzes.
- Evaluation through midterm examinations.
- Evaluation through final examinations.

11. Teaching Staff

Faculty Members						
Academic Rank	Specialization		Requirements/ Special Skills (if any)		Preparing The Teaching Staff	
	Public	Private			Permanent Staff	Lecturer
Professor	Mathematics	Differential Topology	—	—	Permanent Staff	—
Professor	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Professor	Mathematics	Mathematical Analysis	—	—	Permanent Staff	—
Professor	Mathematics	Methods of Teaching Mathematics	—	—	Permanent Staff	—
Professor	Mathematics	Approximation Theory	—	—	Permanent Staff	—
Professor	Mathematics	Computational Mathematics	—	—	Permanent Staff	—

Assistant Professor	Mathematics	Functional Analysis	—	—	Permanent Staff	—
Assistant Professor	Mathematics	Differential Equations	—	—	Permanent Staff	—
Assistant Professor	Mathematics	Differential Equations and Dynamical Systems	—	—	Permanent Staff	—
Assistant Professor	Mathematics	Complex Analysis	—	—	Permanent Staff	—
Assistant Professor	Mathematics	Applied Statistics	—	—	Permanent Staff	—
Assistant Professor	Mathematics	Mathematical Analysis	—	—	Permanent Staff	—
Assistant Professor	Mathematics	Numerical Analysis	—	—	Permanent Staff	—
Assistant Professor	Mathematics	Topology	—	—	Permanent Staff	—
Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Lecturer	Mathematics	Algebraic Topology	—	—	Permanent Staff	—
Lecturer	Mathematics	Differential Geometry	—	—	Permanent Staff	—
Lecturer	Mathematics	Differential Equations	—	—	Permanent Staff	—
Lecturer	Mathematics	Life Mathematics	—	—	Permanent Staff	—
Lecturer	Mathematics	Mathematical Statistics	—	—	Permanent Staff	—
Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Lecturer	Mathematics	Approximation Theory	—	—	Permanent Staff	—
Lecturer	Mathematics	Functional Analysis	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Approximation Theory	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Educational and Psychological Guidance	—	—	Permanent Staff	—

Assistant Lecturer	Mathematics	Numerical Analysis	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Computational Mathematics	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Mathematical Statistics	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Applied Mathematics	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Numerical Analysis	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Topology	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Approximation Theory	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Approximation Theory	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Numerical Analysis	—	—	Permanent Staff	—
Assistant Lecturer	Mathematics	Graph Theory	—	—	Permanent Staff	—
Assistant Lecturer	Management and Economics	Statistics	—	—	Permanent Staff	—

Professional Development

Orienting New Faculty Members

Professional development for new members of the Department of Mathematics is essential to ensure that they acquire the skills and knowledge necessary to succeed in their professional duties. The following are some methods for developing their skills:

1. Providing Orientation Programs:

Orientation programs can be offered to new members of the Department of Mathematics to help them adapt to the new work environment and learn how to utilize the available resources.

2. Providing Training Courses:

Training courses can be offered to new members of the Department of Mathematics in various areas, such as teaching skills, research skills, and information technology skills.

3. Encouraging Attendance at Conferences and Workshops:

New members of the Department of Mathematics can be encouraged to attend conferences and workshops to keep up with the latest developments in the field of mathematics.

4. Providing Opportunities for Communication with Experts:

Opportunities can be provided for new members of the Department of Mathematics to communicate with experts in the field of mathematics through mentoring programs or participation in conferences and workshops.

5. Supporting Scientific Research:

Scientific research for new members of the Department of Mathematics can be supported by providing research grants or assisting them in publishing their studies in scientific journals.

6. Performance Evaluation and Feedback:

The performance of new members of the Department of Mathematics can be evaluated periodically, and feedback can be provided to help them enhance their skills and improve their job performance.

7. Volunteering in the Community:

Members of the Department of Mathematics can engage in community volunteering to share their expertise with others and develop their communication and teamwork skills.

8. Using Social Media:

Members of the Department of Mathematics can use social media to communicate with experts in the field of mathematics and share their ideas and experiences.

9. Joining Professional Associations:

Members of the Department of Mathematics can join professional associations in the field of mathematics to participate in events and activities organized by these associations.

10. Obtaining Professional Certificates:

Members of the Department of Mathematics can obtain professional certificates in various fields of mathematics to demonstrate their skills and expertise.

11. Continuing Learning:

Members of the Department of Mathematics should continue learning to enhance their knowledge and keep up with developments in the field.

12. Admission Criterion

The Department has specific policies regarding the admission of new students and those transferring from other departments, in accordance with the regulations and laws in force by the Ministry of Higher Education and Scientific Research. With regard to newly admitted students, the Department follows the general admission criteria established by the University and the College, based on the ministerial secondary school examination scores for that academic year, as well as the competitive standards among applicants to the scientific departments within the College. However, there are certain requirements that must be met by applicants wishing to study Mathematics in the College. These requirements include:

- 1- The student must hold an Iraqi secondary school certificate, or its equivalent, in the scientific stream.
- 2- Students are distributed among the scientific departments of the College of Education for Pure Sciences based on competition among applicants, according to their scores in the ministerial secondary school examination, their stated preferences, and the admission plan of the Department of Mathematics for that academic year.
- 3- The student must submit the required documents and certificates within a specified period of time.
- 4- A student holding a secondary school certificate from outside Iraq must provide proof of completing twelve years of primary and secondary education at a recognized school, and must submit an official equivalency certificate issued by the Iraqi Ministry of Education.

The Department annually admits top-ranking graduates from institutes, as well as guest students and transfer students from other universities. The distribution of academic credit units for such students is determined in accordance with the courses they have previously completed and their equivalency to the credit units offered at the transferring institution. The required credit units for these students are calculated through a formal course and credit equivalency process. Students are required to complete any credit units corresponding to courses they have not previously studied, while they are exempted from courses that have already been successfully completed at their former institution.

13. The Most Important Sources of Information About the Program.

- ☐ The college and university websites.
- ☐ University requirements.
- ☐ Local academic trends.
- ☐ Global academic requirements.

14. Program Development Plan

1. Participation in scientific conferences inside and outside the country.
2. Participation in scientific workshops and seminars inside and outside the country.
3. Establishing academic partnerships (twinning programs) with international universities.
4. Scientific missions.

Universities today face increasing challenges in keeping pace with the rapid developments in the field of mathematics. Therefore, it is essential to periodically review and develop academic programs to ensure that students acquire the necessary knowledge and skills to succeed in the labor market.

Academic Program Development Plan

To develop the academic program of the Department of Mathematics, the following steps should be undertaken:

1. Evaluation of the Current Program:

- Data Collection: Data should be collected regarding the current program, including feedback from students, faculty members, and graduates of the department.
- Data Analysis: The collected data should be systematically analyzed to identify the strengths and weaknesses of the existing program.

2. Defining Development Objectives:

- General Objectives: The broad goals of program development should be clearly identified, such as keeping pace with advancements in the field of mathematics or enhancing the competencies and skills of the department's graduates.
- Specific Objectives: Clearly defined, measurable objectives should be established, such as introducing new courses, revising the content of existing courses, or improving instructional methodologies.

3. Curriculum Development:

- Reviewing Course Content: The content of existing courses should be systematically reviewed to ensure alignment with labor market needs and contemporary academic standards.
- Introducing New Courses: New courses should be incorporated to address the rapid developments in the field of mathematics.
- Revising Teaching Methods: Instructional approaches should be updated to incorporate modern pedagogical strategies that enhance student learning and engagement.

4. Faculty Development:

- Providing Training Opportunities: Faculty members should be offered training opportunities to familiarize them with the latest technologies and innovative teaching methodologies.
- Encouraging Scientific Research: Faculty members should be encouraged to conduct scholarly research and publish their work in reputable scientific journals.
- Supporting Participation in Conferences and Workshops: Active participation in conferences and workshops should be supported to ensure that faculty members remain informed about the latest developments in the field of mathematics.

Curriculum Skills Map

Please place a check mark in the boxes corresponding to the individual program learning outcomes that are subject to assessment.

				Required Program Learning Outcomes															
Year / Level	Course Code	Course Title	Core or Elective	Cognitive Objectives				Program-Specific Skill Objectives				Affective and Value-Based Objectives				General and Transferable Skills (Other Skills Related to Employability and Personal Development)			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
The First		Calculus	Core	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
		Foundations of Mathematics	Core	•	•	•	○	•	•	•	•	•	•	•	○	•	•	•	•

[illegible]

The Third		Mathematical Analysis	Core	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●
		Probability and Statistics	Core	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●
		Partial Differential Equations	Core	●	●	●	○	●	●	●	○	●	●	●	●	○	○	○	○
		Algebra of Rings	Core	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Numerical Analysis	Core	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●
		Counseling and Psychological Health	Core	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Curricula and Teaching Methods	Core	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●

The Fourth		Topology	Core	●	●	●	●	●	●	○	○	●	●	●	●	●	●	●	●
		Complex Analysis	Core	●	●	●	●	●	●	○	○	●	●	●	●	●	●	●	●
		Mathematical Statistics	Core	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Applied mathematics	Elective	●	●	●	●	●	●	●	○	●	●	○	○	●	●	●	●
		Approximation theory	Elective	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Research Project																	
		Measurement and evaluation																	
		Practical education																	

- Please place a check mark in the boxes corresponding to the individual learning outcomes of the program that are subject to assessment.

**Ministry of Higher Education and
Scientific Research
University of Basrah
College of Education for Pure Sciences
Mathematics Department**



Course Description Template for the Mathematics Department

(Academic Year 2025–2026)

**Ministry of Higher Education and
Scientific Research
University of Basrah
College of Education for Pure Sciences
Mathematics Department**



Course Description Template for the Mathematics Department

The First Stage

(Academic Year 2025–2026)

Course Description Template

1. Academic Course:
Calculus
2. Course Code:
3. Semester / Year:
Annual / 2025–2026
4. Date of Course Description Preparation:
5/ 11/ 2025
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
5 h week, 150 h full year
7. Course Instructor(s):
Name: Muna oda mezban Email: muna.mezban@uobasrah.edu.iq Name: Duaa Wafaa Kamil Email: duaa.kamil@uobasrah.edu.iq
8. Course Objectives:
1– Providing students with the skill of applying differentiation and integration, such as finding the domain of a function and its corresponding domain, how to graph and subtract functions, types of functions, the purpose of a function and its continuity, the derivative of functions and their integrals. 2– Expanding the student's skill by solving home exercises 3 – Clarifying the basic concepts in calculus.

9. Teaching and Learning Strategies

1- Educational strategy, collaborative concept planning.

2- Brainstorming education strategy.

3- Education Strategy Notes Series

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	5h	1- A general overview of the course and vocabulary in general	1- Functions	Explaining scientific material by understanding theories and presenting mathematical examples	Scientific reports and daily and monthly examinations.
2	5h				
3	5h	2- Study the definition of the function, its domain, and its corresponding domain			
4	5h				
5	5h	3- Drawing functions, their withdrawal, and installing functions			
6	5h				
7	5h	4- Types of functions and finding the inverse of functions			
8	5h				
9	5h	5- Trigonometric and inverse trigonometric functions			
10	5h				
11	5h	6- Study the purpose and continuity of functions			
12	5h				
13	5h	7- Introducing the student to the law of the derivative of functions and the derivative using the definition			
14	5h				
15	5h	8- Derivative of trigonometric, inverse trigonometric and hyperbolic functions	2- The goal is continuity		
vacation					
16	5h	9- Explaining the applications of the derivative, such as (increasing and decreasing, the critical point, local maximum and minimum points, concavity and	3- Derivative		
17	5h				

18	5h	convexity, as well as inflection points, L'Hopital's rule, and the mean value theorem)	4- Derivative applications		
19	5h				
20	5h	10- Integration and integration methods	5- Integration and its applications		
21	5h	11- Integration of trigonometric and inverse trigonometric functions			
22	5h				
23	5h	12- Integration of special functions			
24	5h				
25	5h	13- Some integration methods such as (partial integration and other methods)			
26	5h	14- Definite integration and finding spaces	6- Finding the specified spaces		
27	5h				
28	5h				
29	5h				
30	5h				
vacation					

11.Course Assessment:

Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)	Calculus
Main References (Sources)	George B. Thomas (2009). Calculus. Twelfth Edition.
Supporting Books and References (Scientific Journals, Reports, etc.)	Adams, Robert A. (1999). Calculus: A complete course. Addison-Wesley. ISBN 978-0-201-39607-2 . Apostol, Tom M. (1967). Calculus, Volume 1, One-Variable Calculus with an Introduction to Linear Algebra. Wiley. ISBN 978-0-471-00005-1 .

	<p>Apostol, Tom M. (1969). Calculus, Volume 2, Multi-Variable Calculus and Linear Algebra with Applications. Wiley. ISBN 978-0-471-00007-5.</p> <p>محمد مطاوع خشان وايمان حلمي خشان. مقدمة في حساب التفاضل والتكامل...</p> <p>محركات البحث العلمي والتقنيات العلمية</p>
Electronic References and Internet Websites	<p>https://www.google.com/</p> <p>https://www.youtube.net/</p>

Course Description Template

1. Academic Course:
Foundations of mathematics
2. Course Code:
3. Semester / Year:
2025-2026
4. Date of Course Description Preparation:
1/10/2025
5. Available Modes of Attendance:
Attendance in classrooms is according to the schedule
6. Total Hours / Total Units:
120 (4 X 30 weeks)
7. Course Instructor(s):
Name: Dr. Ansam Ahmed Abdulrahman Email: ansam.abdulrahman@uobasrah.edu.iq
8. Course Objectives:
Definition of Foundation of Mathematics and its source Methods to understand logic mathematics and set theory and relations and function . <ul style="list-style-type: none">• The ability to communicate with others within the work team to motivate and highlight the spirit of ability.• The ability to process information, such as understanding graphs and collecting information.• The ability to acquire new knowledge, learn from previous experiences, and be open to new solutions and innovations.

9. Teaching and Learning Strategies					
<ul style="list-style-type: none"> Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework 					
10. Course Structure:					
Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
4	12	The student learns the concept of mathematical logic and algebra of sets	Basic concepts	Lecture	Introductory
4	12	The student learns about the concept of relationships, Cartesian multiplication of sets, and types of relationships	Relationships	Lecture	Constructivist
4	12	Recognizes the equivalence relationship and the formation of equivalence rows	Equivalence relationship	Lecture	Constructivist
3	9	The student recognizes the difference between partial and total order relationships	Types of relationships	Lecture	Constructivist
4	12	The student learns how to form a division group and its applications	division set	Lecture	Constructivist
3	9	The student learns the definition of application and its distinction from relationship	Mapping	Lecture	Constructivist
2	6	The student learns about the types of applications and the definition of each of them	Type of mapping	Lecture	Constructivist
2	6	The student learns about the structure of the application and the inverse of the application	Composition of mappings	Lecture	Constructivist
4	12	The student learns how to form natural numbers and algebra of natural numbers	The origin of natural numbers	Lecture	Constructivist
11.Course Assessment:					
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:

Prescribed Textbooks (if any)	
Main References (Sources)	Foundations of Mathematics Dr. Hadi Jabir Mustafa, Dr. Riad Shakir Naoum, Dr. Nader George Mansour
Supporting Books and References (Scientific Journals, Reports, etc.)	The Foundation of Mathematics Kenneth Kunen, 2007.
Electronic References and Internet Websites	

Course Description Template

1. Academic Course:
Linear Algebra
2. Course Code:
3. Semester / Year:
Yearly
4. Date of Course Description Preparation:
16\11\2025
5. Available Modes of Attendance:
Only attendance
6. Total Hours / Total Units:
120 hours in the year/ 4 hours in a week
7. Course Instructor(s):
Name: Dr. Ahmed K. Shanan Email: ahmed.shanan@uobasrah.edu.iq
8. Course Objectives:
<ol style="list-style-type: none">1. Using correct mathematical language through the study of linear algebra.2. Understanding the axiomatic structure of a modern mathematical topic and learning how to construct simple proofs.3. Solving problems related to linear algebra in the fields of chemistry, economics, and engineering.
9. Teaching and Learning Strategies
<ol style="list-style-type: none">1. Learning strategy: Collaborative concept planning.2. Learning strategy: Brainstorming.

3. Learning strategy: Observation chain.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4 hours	Matrices	Matrices	Explaining the scientific material through lectures and discussions	Daily and monthly tests
2	4 hours	Square matrices and their types	Square matrices	Explaining the scientific material through lectures and discussions	Daily and monthly tests
3	4 hours	Basic operations on matrices and properties of matrices	Basic operations on matrices	Explaining the scientific material through lectures and discussions	Daily and monthly tests
4-5	8 hours	Special matrices: periodic matrix, indeterminate matrix, irrational matrix, orthogonal matrix, symmetric	Special matrices	Explaining the scientific material through lectures and discussions	Daily and monthly tests

		matrix, Hermit's matrix, and Hermit's inverted matrix			
6	4 hours	Matrices in regular form, matrix order, and elementary operations on matrices	Matrix order	Explaining the scientific material through lectures and discussions	Daily and monthly tests
7	4 hours	Matrix Inverse and Some of Its Properties; Methods for Finding the Inverse of a Matrix: Adjacent Matrices and Gaussian Methods	Matrix Inverse	Explaining the scientific material through lectures and discussions	Daily and monthly tests
8	4 hours	Test on Matrices, Basic Operations on Them, Special Matrices, Matrix Order, and Matrix Inverse	First month test, first semester	Explaining the scientific material through lectures and discussions	Daily and monthly tests
9-12	12 hours	Linear equations and linear systems; homogeneous and non-	Linear systems	Explaining the scientific material through lectures and	Daily and monthly tests

		homogeneous linear systems; methods for solving linear systems: substitution and Cramer's method; methods for solving linear systems: matrix inverse and Gaussian-Jordan method		discussions	
13-14	8 hours	Introduction to vectors and their geometric representation in space R^2 and R^3 ; Equivalence and parallelism of vectors; Addition and subtraction of vectors using parallelograms and triangles; Vector multiplication: dot product and cross product; Calculating the distance	Vectors	Explaining the scientific material through lectures and discussions	Daily and monthly tests

		<p>between two vectors;</p> <p>Studying the concept of perpendicularity of vectors;</p> <p>Finding the angle between two vectors</p>			
15	4 hours	Performing a test on methods for solving linear systems: the topic of vectors	Second month test, first semester	Explaining the scientific material through lectures and discussions	Daily and monthly tests
16	4 hours	Vector spaces and subspaces with some examples	Vector spaces and subspaces	Explaining the scientific material through lectures and discussions	Daily and monthly tests
17-18	8 hours	Algebra of subspaces	Algebra of subspaces: intersection of subspaces, union of subspaces, addition of subspaces, and .direct addition	Explaining the scientific material through lectures and discussions	Daily and monthly tests
19	4 hours	Linear composition	Linear composition	Explaining the scientific	Daily and monthly

		with their examples		material through lectures and discussions	tests
20-21	8 hours	Generating set, dependencies, and linear correlations	Generating set with examples, dependencies, and linear correlations with examples	Explaining the scientific material through lectures and discussions	Daily and monthly tests
22	4 hours	dimension, bases, and natural bases with examples	dimension, bases, and natural bases	Explaining the scientific material through lectures and discussions	Daily and monthly tests
23	4 hours	Linear transformations with examples	Linear transformations	Explaining the scientific material through lectures and discussions	Daily and monthly tests
24	4 hours	Conduct a test on vector spaces, subspaces, algebraic operations on them, linear configuration, generative sets, and linear	first month test, Second semester	Explaining the scientific material through lectures and discussions	Daily and monthly tests

		.transformations			
25-27	12 hours	Image and kernel of linear transformation with examples; standard matrix of linear transformation with examples	Image and kernel	Explaining the scientific material through lectures and discussions	Daily and monthly tests
28-29	8 hours	Eigenvalues and eigenvectors, their calculation methods, and diagonal matrices with examples	Eigenvalues and eigenvectors, their calculation methods, and diagonal matrices with examples	Explaining the scientific material through lectures and discussions	Daily and monthly tests
30	4 hours	Performing a test in the image, kernel, and standard matrix for linear transformation of eigenvalues, eigenvectors, and diagonal matrix	Second month test, Second semester	Explaining the scientific material through lectures and discussions	Daily and monthly tests
11.Course Assessment:					
The distribution of marks is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second .semester. 50 marks for the final exam					
12.Learning and Teaching Resources:					

Prescribed Textbooks (if any)	Linear Algebra winter 2022
Main References (Sources)	الجبر الخطي، الدكتور نزار حمدون شكر
Supporting Books and References (Scientific Journals, Reports, etc.)	<p>1- عمران قوبا، الجبر الجزء الثاني -الجبر الخطي، منشورات المعهد العالي للعلوم التطبيقية والتكنولوجيا، الجمهورية العربية السورية، 2017.</p> <p>2- W. Keith. Nicholson, Linear Algebra with Applications, 2018</p>
Electronic References and Internet Websites	https://www.pinterest.com/pin/640918590689696481/

Course Description Template

1. Academic Course:
Principles of Education and Learning
2. Course Code:
3. Semester / Year:
annual
4. Date of Course Description Preparation:
4/1/2025
5. Available Modes of Attendance:
.Attendance is in person only and according to the schedule posted in the department
6. Total Hours / Total Units:
3 hours per week
7. Course Instructor(s):
Name: Noor Abbas Kadhum Email: Name: Email:
8. Course Objectives:
1- The course on the Principles of Education aims to understand the foundations and principles of the educational process in order to develop it, and to provide learners with practical theories and concepts. 2- To form positive attitudes toward the teaching profession, raise awareness of societal issues and the role of education in addressing them, in

addition to preparing competent individuals capable of conducting scientific research.

To develop students' critical and creative thinking skills, and to enhance -3 their understanding of economic, political, and cultural challenges and their .relation to education

9. Teaching and Learning Strategies

- The strategies of the subject of Principles of Education and Learning include a wide range of methods such as:

1- Cooperative learning

2- Brainstorming

Problem-based learning, imaginative play, direct instruction -3

10.Course Structure:

Week	Hou rs	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessme nt Method
3+1	9	Definition of students: to understand the principles of education and teaching, and to comprehend the civilizational foundation of the concept of education, and for students to be aware of the goals of education, its foundations, and the necessity of education	_ Education: concept, foundations, and objectives _ What is education _ Goals of education _ Foundations of education The necessity of _ education	Attendance and theoretical	Exams, attendanc e, and daily participati on

4+6	9	Introducing students to the importance of education, its principles, significance, and understanding its types	_ The Importance of Education _ Principles of Education _ The Importance of Studying the Principles of Education 1- The Social and Cultural Foundations of Education 2-The Historical Foundations of Education	Attendance and theoretical	Exams, daily interaction, and participation
7+9	9	_ Introducing students to the foundations of philosophical, psychological, political, and economic education and their fields Understanding the _ economics of education	_ Philosophical Foundations of Education _ Psychological Foundations of Education _ Political Foundations of Education _ Economic Foundations of Education _ Areas of Interest of the Economic Foundations of Education Economics of _ Education	Attendance and theoretical	Exams, daily interaction, and participation

10+14	9	<p>Introducing students to the duality of education and upbringing (the home school and the tribal school), knowing the definition of learning, distinguishing between education and upbringing, the historical origins of education, and education in ancient civilizations. Also, the education system in ancient Iraq, introducing students to Chinese education and its examination system, as well as introducing them to education in ancient Egypt, and familiarizing them with the educational systems across civilizations (Greek education, its characteristics, and objectives). Additionally, introducing students to the education system in Sparta and</p>	<ul style="list-style-type: none"> _ Education and Teaching Duality _ Development of Education _ Education and Teaching _ Definition of Learning _ Distinguishing between Teaching and Education _ Historical Roots of Education _ Education System in Ancient Iraq _ Chinese Education _ Education in Ancient Egypt _ Education System Across Civilizations - Greek Education - Education System in Sparta Education System in - Athens 	Attendance and theoretical	Exams, daily interaction, and participation
-------	---	--	---	----------------------------	---

15+19	9	<p>its stages, and the education system in Athens, its stages, and objectives</p> <p>Introducing students to Roman education and its types of schools, familiarizing them with education in the Middle Ages (Christian education and its objectives, and Islamic education), introducing them to education during the Renaissance, explaining the meaning of philosophy, its principles, functions, types, objectives, applications, and criticisms, introducing them to the philosophy of realistic education, its objectives and criticisms, and</p>	<p>_ Education Across Civilizations</p> <p>- Roman Education</p> <p>_ Education in the Medieval Era</p> <p>_ Islamic Education</p> <p>_ Education in the Renaissance</p> <p>_ Education and Philosophy</p> <p>_ Origins of Educational Philosophies, Their Types, Goals, and Educational Applications</p> <p>_ Education from the Perspective of Realists</p> <p>_ Goals of Realistic Education</p> <p>Pragmatic Philosophy _ (Practical), Its Basic Principles, and Goals</p>	Attendance and theoretical	Exams, daily interaction, and participation
-------	---	--	--	----------------------------	---

20+24	9	<p>introducing them to the philosophy of pragmatic education, its basic principles, objectives, and criticisms</p> <p>Introducing students to the Greek philosophers (the philosopher Socrates and his most important educational views), the philosopher Plato and his most important educational views, and the philosopher Aristotle and Thales and their most important educational views; introducing them to the Arab Muslim philosophers (Ibn Khaldun and his educational views, Ibn Sina and his educational views); and introducing them to prominent figures of Western educational thought</p>	<p>_ Opinions of Philosophers and Thinkers on Education</p> <p>_ Greek Philosophers</p> <p>1- Philosopher Socrates</p> <p>2- Philosopher Plato</p> <p>3- Philosopher Aristotle</p> <p>Thales</p> <p>_ Arab Muslim Philosophers</p> <p>1- Ibn Khaldun</p> <p>2- Ibn Sina</p> <p>_ Opinions of Philosophers and Thinkers on Education</p> <p>_ Figures of Western Educational Thought</p> <p>1- Jean-Jacques Rousseau</p> <p>2- John Dewey</p>	Attendance and theoretical	Exams, daily interaction, and participation
-------	---	---	--	----------------------------	---

		(Jean-Jacques Rousseau and his educational views, John Dewey and his educational views, Pestalozzi and his educational views, and Makarenko and his educational views and publications	3- Pestalozzi Makarenko4 -		
25+28	9	Introducing students to educational institutions, including (family, school), introducing them to specialized educational institutions, introducing them to the concept of science and its characteristics, introducing them to the concept of scientific research and its steps, introducing them to research methodologies and their types, and the steps of historical,	_ Educational institutions and their media _ The relationship between the family and the school _ Means of education _ The concept of science and its characteristics _ The concept of scientific research _ Its steps _ Scientific research methods _ Its types 1- Historical research 2- Descriptive research	Attendance and theoretical	Exams, daily interaction, and participation

		descriptive, and experimental .research	Experimental research3 -		
--	--	---	--------------------------	--	--

11.Course Assessment:

Distribution as follows: 25 marks for monthly and daily exams for the first semester. 25 .marks for monthly and daily exams for the second semester. 50 marks for the final exams

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)	
Main References (Sources)	<p>- Farman, Shatha Adel, Ibrahim, Manal Mohammed, Abdul Reda, Mowafaq Abdul Zahra (2023), Foundations of Education for Departments of Educational and Psychological Sciences, 1st Edition, Noor Al-Hasan Office for Printing and Typing, Dar Al-Kutub wa Al-Watha'eq, Baghdad</p> <p>2- Al-Halbousi, Saadoun Salman Najm (2003), Studies in the Philosophy of Education and Curricula, Al-Ja Valetta Company – Malta, Dar Al-Huda for Printing and Publishing for Distribution, Ain M'lila</p> <p>3- Al-Amayreh, Mohammed Hassan (2000), Principles of Historical, Social, Psychological, and Philosophical Education, Amman, Dar Al-</p>

	<p>Maseera for Publishing, Distribution, and Printing</p> <p>4- Hamada, Abdul Mohsen (1995), Introduction to the Principles of Education, 4th Edition, Kuwait, Kuwait Times Karim; Mohammed Ahmed and Shibl Badran, Discussion on the Philosophical Foundations of Education (Alexandria, Al-Jumhuriya Press, 1997)</p> <p>5- Afifi, Mohammed Al-Hadi, On the Principles of Education (Cairo, Anglo-Egyptian Library, 1985)</p> <p>6- Al-Omrani, Mohammed Abdul Ghani Ismail, Principles of Education (Sana'a, Dar Al-Kitab Al-Jami'i, 2014)</p> <p>7- Al-Rubaie, Farhan Ubaid, Mohammed Farhan, and Naseer Mohammed, Education and Teaching: Foundations and Principles (unpublished typeset version)</p> <p>Morsi, Mohammed Mounir, Principles of Education, Cairo, Alam Al-Kutub, 2009</p> <p>Sharif, Al-Sayed Abdelkader, Philosophical and Social Foundations of Education (Cairo (University, Faculty of Early Childhood, 2005</p>
Supporting Books and References (Scientific Journals, Reports, etc.)	
Electronic References and Internet Websites	<p>Wikipedia, the free encyclopedia (World Wide Web)</p> <p>/https://ar.wikipedia.org/wiki</p>

Course Description Template

1. Academic Course:
Introduction of Computer Science
2. Course Code:
3. Semester / Year:
Annual :2025-2026
4. Date of Course Description Preparation:
19/11/2025
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
4 hours a week, 60 hours in the full year
7. Course Instructor(s):
Name: Prof. Dr. Hameeda Oda Mezban Email: hameeda.mezban@uobasrah.edu.iq
8. Course Objectives:
<p>To qualify and training students in Microsoft Word for writing thesis and research papers in the future, and to teach them how to create spreadsheets using Microsoft Excel, as well as to teach them how to use MATLAB for solving various mathematical equations across all branches of mathematics.</p> <p>Ultimately, this aims to train students and develop their scientific abilities in using computers as an educational tool, enabling them to benefit from the vast capabilities offered in word processing. It also seeks to strengthen their desire to use application programs and instill a positive attitude towards information technology, preparing them to</p>

perform suitable job tasks using this software in various scopes.

9. Teaching and Learning Strategies

1. Theoretical lectures and practical applications in the computer lab.
2. Using the projector screen to deliver lectures on topics that require it.
3. Evaluating the student's understanding at the end of the practical lecture through practical assignments in the lab.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1-3	6	Using Windows 10	Introduction and requirements for installing Windows 10- Desktop components- Taskbar – Icons – Desktop background – Control panel	6 hours of attendance inside the lab	Questions and discussions with daily exams
9-4	6	Microsoft office- Word	Introduction- Opening Microsoft Word - Program Interface - File Tab - Insert Tab - Home Tab - Design Tab - Page Layout Tab	6 hours of attendance inside the lab	Questions and discussions with daily exams
15-10	12	Microsoft office- Excel	Introduction- Opening Microsoft Excel - Program Interface - File Tab - Insert Tab - Home Tab	12 hours of attendance inside the lab	Questions and discussions with daily exams
Midterm exams (two weeks)					
Two-week break					
			Introduction - Running MATLAB		

16-30	30	MATLAB	<ul style="list-style-type: none"> - Introduction to the MATLAB Language - The MATLAB Desktop - Components of the MATLAB Window - MATLAB Language Symbols - Arithmetic Statements - Office Functions - Arrays and Array Operations - Finding Subarrays - Array Functions - Array Size - Multidimensional Arrays- Cell Arrays - Time Series - Input/Output Statements - Conditional Statements - Looping and Iteration Statements- Graphs 	30 hours of attendance inside the lab	Questions and discussions with daily exams
11.Course Assessment:					
Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams					
12.Learning and Teaching Resources:					

<p>Prescribed Textbooks (if any)</p>	<p>1) أساسيات الحاسوب وتطبيقاته المكتبية (الجزء الأول) ، د. زياد محمد عبود، د. غسان حميد عبد المجيد، د. أمير حسين مراد، م. بلال كمال أحمد الدار الجامعية للطباعة والنشر والترجمة، بغداد - العراق، 2014</p>
<p>Main References (Sources)</p>	<p>2) سلسلة يسر المصطفى للعلوم "أساسيات الحاسوب والانترنت" أوفيس 3) دورة الماتلاب خطوة بخطوة. 4) الماتلاب للمهندسين.</p>
<p>Supporting Books and References (Scientific Journals, Reports, etc.)</p>	<p>5) تعليم استخدام word 2016، أحمد باسم مهدي، 2020 6) دورة في كتاب اكسل 2016، نضال الشامي المشاع الإبداعي، 2017. 7) مواقع الانترنت المختصة بتعليم وشرح مادة الورد والاكسل والماتلاب.</p>
<p>Electronic References and Internet Websites</p>	<p>(8) m http://www.howstuffworks.com http://www.microsoft.com</p>

Course Description Template

1. Academic Course:
English language
2. Course Code:
3. Semester / Year:
2024-2025
4. Date of Course Description Preparation:
1/10/2024
5. Available Modes of Attendance:
Presence
6. Total Hours / Total Units:
30 HOURS / 2 Units
7. Course Instructor(s):
Name: DR. KHALID ABDULALAH ABDULZAHRA Email: khalid.utub@uobasrah.edu.iq
8. Course Objectives:
<ol style="list-style-type: none">1. Use English grammatical structures accurately, with a focus on:<ul style="list-style-type: none">• Simple and progressive forms of present and past tenses.• Distinction between stative and dynamic verbs.• Correct usage of irregular verbs in past contexts.• Appropriate application of narrative tenses (simple past vs. past progressive) in descriptive and academic contexts.

2. Understand and apply mathematical and technical vocabulary in English, including:

- Numerals (cardinal and ordinal numbers) and their correct spelling, pronunciation, and usage.
- Fractions and compound numbers, following standard English conventions (e.g., hyphenation).
- Basic terminology related to geometry and algebra (e.g., circle, parabola, ellipse, hyperbola, focus, vertex, asymptote).

3. Read and comprehend academic and descriptive English texts, particularly those related to scientific and everyday contexts, by:

- Identifying main ideas and supporting details.
- Making inferences and drawing conclusions from passages.
- Recognizing text organization and purpose (e.g., comparison, definition, description).

4. Develop foundational academic communication skills, enabling them to:

- Describe mathematical concepts and everyday situations clearly in written and spoken English.
- Interpret and produce sentences that reflect precise meaning in both general and technical contexts.

5. Recognize and use the Greek alphabet as commonly employed in mathematical and scientific notation, including correct names, symbols, and English equivalents.

6. Build confidence in using English as a medium for learning mathematics, preparing them for advanced coursework, textbooks, and international academic resources.

9. Teaching and Learning Strategies

1. Content and Language Integrated Learning.

2. Task-Based Language Teaching.

3. Contrastive Analysis & Explicit Grammar Instruction.
4. Multisensory & Visual Learning.
5. Collaborative Learning & Peer Interaction.
6. Repetition with Variation (Spiral Curriculum).

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
3	3	Introduction to Academic English & Course Overview.	Goals of the course.	Lecture+ discussion	Exam and daily questions
3	3	Cardinal and Ordinal Numerals.	Spelling, pronunciation , Hyphen rules.	Lecture+ discussion	Exam and daily questions
3	3	Fractions and Mathematical Expressions in English.	Reading and saying fractions.	Lecture+ discussion	Exam and daily questions
3	3	The Greek Alphabet in Mathematics.	Names, symbols, and English equivalents.	Lecture+ discussion	Exam and daily questions
3	3	Simple Present vs. Present Progressive.	Form and function of both tenses. Stative vs. dynamic verbs.	Lecture+ discussion	Exam and daily questions

3	3	(Educational texts)Stative Verbs and Non-Progressive Meanings.	Verbs of perception, emotion, possession.	Lecture+ discussion	Exam and daily questions
3	3	Simple Past Tense – Regular and Irregular Verbs.	Spelling patterns and pronunciation.	Lecture+ discussion	Exam and daily questions
3	3	Past Progressive vs. Simple Past.	Interrupted actions and background descriptions.	Lecture+ discussion	Exam and daily questions
3	3	(Educational texts) Reading Comprehension & Academic Vocabulary.	Strategies: skimming, scanning, identifying main ideas.	Lecture+ discussion	Exam and daily questions
3	3	Integration & Application.	Review of numerals, tense, Greek letters, and academic reading.	Lecture+ discussion	Exam and daily questions

11.

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:

Prescribed Textbooks (if any)	Non
Main References (Sources)	Understanding and using English Grammar third edition

	Betty Schramper Azar
Supporting Books and References (Scientific Journals, Reports, etc.)	
Electronic References and Internet Websites	1- https://www.bbc.co.uk/learningenglish 2- https://learnenglish.britishcouncil.org 3- https://www.duolingo.com 4- https://www.esl-lab.com

**Ministry of Higher Education and
Scientific Research
University of Basrah
College of Education for Pure Sciences
Mathematics Department**



Course Description Template for the Mathematics Department

The Second Stage

(Academic Year 2025–2026)

Course Description Template

1. Academic Course:
ADVANCED CALCULUS
2. Course Code:
3. Semester / Year:
2024-2025
4. Date of Course Description Preparation:
1/10/2024
5. Available Modes of Attendance:
Presence
6. Total Hours / Total Units:
150 HOURS / 8 Units
7. Course Instructor(s):
<p>Name: DR. KHALID ABDULALAH ABDULZAHRA</p> <p>Email: khalid.utub@uobasrah.edu.iq</p> <p>Name: Angham Ahmed Jabar</p> <p>Email: angham.jabar@uobasrah.edu.iq</p>
8. Course Objectives:
<p>1– Acquiring the necessary mathematical knowledge for the prescribed subjects and understanding the meanings behind each mathematical concept.</p> <p>2 – Developing an understanding of the nature of the subject of calculus as an integrated system of basic mathematical concepts, which will provide an important basis for</p>

understanding other mathematical disciplines.

3– Clarifying the applications of the topics covered by the course.

4– Students can obtain good and advanced skills in the field of applied mathematics.

5– The student gains application experience in the topics covered in the course.

9. Teaching and Learning Strategies

1– Theoretical lecture.

2– Use the display screen.

3– Guiding the student to websites.

4– Guiding the student to the sources on which the lectures were organized.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
4	20	The student learns the basic concepts of conic sections and rotation of axes.	Conic sections. Rotation of axes	Lecture+ discussion	Exam and daily questions
4	20	The student learns the basic concepts of polar coordinates and their relationship to Cartesian coordinates.	Polar coordinates	Lecture+ discussion	Exam and daily questions
4	20	The student learns the basic concepts about vectors, their properties and applications.	Vectors	Lecture+ discussion	Exam and daily questions
6	30	The student learns the basic concepts of partial derivative and its applications.	Partial derivative	Lecture+ discussion	Exam and daily questions

5	25	The student learns the basic concepts of definite double and triple integrals and their applications.	Repeated integrals	Lecture+ discussion	Exam and daily questions
4	20	The student learns the basic concepts of series.	Numerical series	Lecture+ discussion	Exam and daily questions
3	15	The student learns applications of series.	Applications	Lecture+ discussion	Exam and daily questions

11.Course Assessment:

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:

Prescribed Textbooks (if any)	CALCULUS and Analytic Geometry by Finny and Thomas
Main References (Sources)	1. CALCULUS AND ANALYTIC GEOMETRY G. B. Thomas and R. L. Finney 2. CALCULUS H. Anton, I. Bivens and S. Davis 3. ADVANCED CALCULUS M. R. Spiegel
Supporting Books and References (Scientific Journals, Reports, etc.)	
Electronic References and Internet Websites	1- https://www.desmos.com/calculator/dxkknajdqb 2- https://www.integral-calculator.com/ 3- https://www.symbolab.com/solver/calculus-calculator

Course Description Template

1. Academic Course:
Ordinary Differential Equations
2. Course Code:
3. Semester / Year:
Annual :2025-2026
4. Date of Course Description Preparation:
19/11/2025
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
8 h week
7. Course Instructor(s):
<p>Name: Dr. Takia Ahmed J. Al-Griffi</p> <p>And Dr. Mohammed Sabah Abdul-Wahab</p> <p>Email: takia.ahmed@uobasrah.edu.iq</p> <p>And eduppg.mohammed.sabah@uobasrah.edu.iq</p>
8. Course Objectives:
<p>1. To provide students with the skill of applying ordinary differential equations, such as defining differential equation, its order and degree, and methods for solving first-order and first-degree differential equations.</p> <p>2. Methods for solving first-order and higher-order differential equations.</p> <p>3. Methods for solving higher-order differential equations.</p> <p>4. To expand students' skills by solving homework exercises.</p> <p>5. To clarify the basic concepts in ordinary differential equations.</p>

9. Teaching and Learning Strategies

1-Educational strategy, collaborative concept planning.

2- Brainstorming education strategy.

3-Education Strategy Notes Series

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	8	The student learns the concept of the ordinary differential equation, the order of the equation, the degree of the equation, the general solution, the unique solution, and the special solution.	Basic concepts	Lecture	Introductory
2	8	The student learns how to distinguish between ordinary and partial differential equations, linear and nonlinear, homogeneous and nonhomogeneous.	Basic concepts	Lecture	Introductory
3	8	The student learns how to form a differential equation from the general solution.	Basic concepts	Lecture	Introductory
4	8	The student learns to solve by separation of variables, homogeneous equation, differential equations with linear coefficients, and complete differential equations.	Methods for solving first-order and first-degree differential equations	Lecture	The constructor
5	8	The student learns the concept of the integration factor and its use in solving incomplete differential equations.	Methods for solving first-order and first-degree differential equations	Lecture	The constructor
6	8	First order linear equation, Bernoulli's equation	First-order linear differential equations	Lecture	The constructor
7	8	Solving second-order differential equations transformable to first-order equations	Solving second-order differential equations	Lecture	The constructor

			transformable to first-order equations		
8	8	Solving first-order differential equations but of higher degrees	Solving first-order differential equations but of higher degrees	Lecture	The constructor
9	8	Simultaneous differential equations	Simultaneous differential equations	Lecture	The constructor
10	8	The student learns the concept of general linear differential equations of order n with constant coefficients, the concept of the Wronskian determinant and independence of solutions, and the concept of the differential operator.	Solving general linear differential equations of order n with constant coefficients	Lecture	Introductory
11	8	Solving linear differential equations by reducing them to the first order	Solving general linear differential equations of order n with constant coefficients	Lecture	The constructor
12	8	Solving homogeneous linear differential equations with constant coefficients	Solving general linear differential equations of order n with constant coefficients	Lecture	The constructor
13	8	Finding the particular solution of a non-homogeneous linear differential equation using: The method of indeterminate coefficients, the operator method, and the method of varying constants	Solving general linear differential equations of order n with constant coefficients	Lecture	The constructor

14	8	Finding the particular solution of a non-homogeneous linear differential equation using: The method of indeterminate coefficients, the operator method, and the method of varying constants	Solving general linear differential equations of order n with constant coefficients	Lecture	The constructor
15	8	The student learns about Euler's equation and how to solve it.	Euler Equation	Lecture	The constructor
Midterm exams (two weeks)					
Two-week break					
16	8	The student learns the concept of the Laplace transform and the inverse Laplace transform.	Laplace transform	Lecture	Introductory
17	8	Properties and theorems of the Laplace transform	Laplace transform	Lecture	The constructor
18	8	Solving linear differential equations with the Laplace transform	Laplace transform	Lecture	The constructor
19	8	Solving initial value problems with the Laplace transform	Laplace transform	Lecture	The constructor
20	8	Solving systems of ordinary differential equations using the Laplace transform	Laplace transform	Lecture	The constructor
21	8	The student learns the concept of special functions.	special functions	Lecture	Introductory
22	8	The student learns the concept of special functions.	special functions	Lecture	The constructor
23	8	The student learns the concept of normal points and singular points of the differential equation.	The series	Lecture	Introductory
24	8	Solving differential equations using series	The series	Lecture	The constructor
25	8	Solving differential equations using series	The series	Lecture	The constructor
26	8	Solving differential equations using series	The series	Lecture	The constructor

27	8	Frobenius method for solving differential equations	The series	Lecture	The constructor
28	8	Frobenius method for solving differential equations	The series	Lecture	The constructor
29	8	Solving differential equations using matrices.	The matrices	Lecture	The constructor
30	8	Solving differential equations using matrices.	The matrices	Lecture	The constructor

11.Course Assessment:

Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)	أ.م. خالد احمد السامرائي و أ.م. يحيى عبد سعيد " طرق حل المعادلات التفاضلية " وزارة التعليم العالي والبحث العلمي، جامعة بغداد، 1979
Main References (Sources)	Albert L. Rabenstein "Introduction to Ordinary Differential Equations", Academic Press, INC., 1972.
Supporting Books and References (Scientific Journals, Reports, etc.)	R. K. Nagle, E.B. Satt and A.D. Snider "Fundamentals of differential Equations& Boundary Value Problems", Addison Wesley, Longman, 2000 محركات البحث العلمي والقنوات العلمية
Electronic References and Internet Websites	https://www.google.com/ https://www.youtube.net/

Course Description Template

1. Academic Course:
Engineering and Systems Axioms
2. Course Code:
3. Semester / Year:
2026-2025
4. Date of Course Description Preparation:
18-11-2025
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
3 hours weekly
7. Course Instructor(s):
Name: Saffa Abdu Alshheed Email: saffa.hameed@uobasrah.edu.iq Name: Mudhar Abdu wahid Abdul hussain Email: mudhar.hussain@uobasrah.edu.iq
8. Course Objectives:
1– Familiarizing students with the foundations of engineering and axioms systems. 2– Understand the components of each intuitive system 3 – Know the importance of engineering in the educational process.
9. Teaching and Learning Strategies

- 1- Educational strategy, collaborative concept planning.
- 2- Brainstorming education strategy.
- 3- Education Strategy Notes Series

10.Course Structure:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3h	1- General access to the course and vocabulary in general	1- System of Axioms	Explain the scientific material by understanding the theories and putting forward mathematical examples	Scientific reports and daily and monthly examinations.
2	3h				
3	3h				
4	3h	2- Study of the definition of the axiomatic system			
5	3h				
6	3h	3- The basics of building the intuitive system			
7	3h				
8	3h		2- Types System of Axioms		
9	3h	4- Types of intuitive systems and their relationship (Fano system and UNK system)			
10	3h		3- characteristics of every axiomatic system		
11	3h				
12	3h	5- Recognize the characteristics of every axiomatic system			
13	3h				
14	3h				
15	3h	definition			
vacation		6- Study of non-Euclidean geometry and knowledge of its			
16	3h				

17	3h	properties.			
18	3h				
19	3h	7- Introducing the student to	4-Non-Euclidean geometry		
20	3h	Hathloul geometry and			
21	3h	knowing the theorems of this geometry			
22	3h				
23	3h	8- Introducing the student to			
24	3h	imperfect geometry and	5- Hathloul geometry		
25	3h	knowing the theorems for this geometry			
26	3h				
27	3h				
28	3h				
29	3h		6- Imperfect geometry		
30	3h				
vacation					

11.Learning and Teaching Resources:

Prescribed Textbooks (if any)	Lectures prepared by the subject teacher
Main References (Sources)	مفاهيم الاساسية في الهندسة
Supporting Books and References (Scientific Journals, Reports, etc.)	Scientific search engines and scientific channels
Electronic References and Internet Websites	https://www.google.com/ https://www.youtube.net/

Course Description Template

1. Academic Course:
Group theory
2. Course Code:
3. Semester / Year:
2025_2026
4. Date of Course Description Preparation:
2025_2026
5. Available Modes of Attendance:
Attendance
6. Total Hours / Total Units:
Three hour per week
7. Course Instructor(s):
<p>Name: Asst.Lecturer Nooraldeen Adnan Hatoo</p> <p>Email: norldenadnan@uobasrah.edu.iq</p> <p>Name: Tahani Abdul majeed abdul qader</p> <p>Email: Email : tahani.qader@uobasrah.edu.iq</p>
8. Course Objectives:
<ol style="list-style-type: none"> 1. Understanding the algebraic fundamentals of group theory in terms of definitions and basic theoretical structures. 2. Developing the ability to formulate proofs and applications. 3. Analyzing the properties of different groups, such as periodic,

commutative, and non-commutative groups.

4. Identifying subgroups and related groups and studying their role in understanding the structure of larger groups.

5. Applying fundamental group theory theorems such as Lagrange's theorem and the fundamental isomorphism theorems.

6. Employing group theory in diverse mathematical and scientific applications and understanding its relationship to the structure of symmetric systems.

9. Teaching and Learning Strategies

1. Facilitate guided classroom discussions to clarify abstract concepts and exchange mathematical perspectives among students.

2. Poses open-ended questions that encourage students to discover properties and relationships within groups, rather than receiving ready-made answers.

3. Implement a student-centered learning approach by empowering students to pose problems and propose solutions during the lesson.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method

11.Course Assessment:					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)			Modern Abstract Algebra Group Theory		
Main References (Sources)			Modern Abstract Algebra Group Theory		
Supporting Books and References (Scientific Journals, Reports, etc.)			Topics in algebra		
Electronic References and Internet Websites			<u>Lecture Notes in Abstract Algebra – Group Theory</u>		

Course Description Template

1. Academic Course:
Curricula and school textbooks
2. Course Code:
3. Semester / Year:
annual
4. Date of Course Description Preparation:
4/1/2025
5. Available Modes of Attendance:
.Attendance is in person only and according to the schedule posted in the department
6. Total Hours / Total Units:
9 hours per week
7. Course Instructor(s):
Name: Noor Abbas Kadhum Email: noor.kadhum@uobasrah.equ.iq Name: Email:
8. Course Objectives:
1- Skill Development: Enhances the student's skills in research, critical thinking, and creativity, and helps in acquiring knowledge and applying it in relevant situations. 2- Personal Growth: Contributes to the development of high ethical values and building a well-rounded and balanced personality in the student.

Continuous Learning: Provides a broad and balanced curriculum and helps -3 the student gradually develop their knowledge, preparing them for future .employment

9. Teaching and Learning Strategies

- Developing academic content

- Using diverse and interactive teaching methods

Updating assessment tools to suit different learners and the developments of the modern - era

10.Course Structure:

Week	Hou rs	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessme nt Method
3+1	9	Introducing students to understanding the meaning of the curriculum, familiarizing them with the old curriculum, how it was prepared, and its drawbacks, as well as acquainting them with the modern concept of the curriculum and its features and characteristics	Curricula, The - traditional concept of the curriculum, The modern concept of the curriculum, Factors that contributed to the development of the curriculum concept and components of the curriculum	Attendance and theoretical	Exams, attendanc e, and daily participati on

4+6	9	<p>Introducing students to the comparison between the old curriculum and the modern curriculum according to various fields in terms of the nature of the curriculum, the subject matter, the teaching method, the student, and the teacher, as well as introducing them to the psychological basis of the curriculum, the philosophical (intellectual) foundations, the socio-cultural foundations, the developmental psychological foundations, and the cognitive foundations</p>	<p>Balancing between the old curriculum and the modern curriculum, curriculum foundations, characteristics of development, and their relation to the curriculum</p>	<p>Attendance and theoretical</p>	<p>Exams, daily interaction, and participation</p>
-----	---	--	---	-----------------------------------	--

7+9	9	Introducing the student to the developmental needs in childhood (from birth to twelve) and their relation to the curriculum, and the role of the school curriculum in meeting these demands, as well as the developmental needs in adolescence (from 12 to 18) and their relation to the curriculum	Growth needs and their relationship with the curriculum, growth problems and their relationship with the curriculum, learners' needs and their relationship with the curriculum, individual differences and their relationship with the curriculum, the concept of learning and the learner's readiness	Attendance and theoretical	Exams, daily interaction, and participation
10+14	9	Introducing students to the elements of the old and modern curriculum in terms of educational objectives and their types, general and specific objectives, behavioral objectives, sources of deriving educational objectives, classification of educational	Curriculum Components	Attendance and theoretical	Exams, daily interaction, and participation

		<p>objectives, and their levels according to Simpson's classification in terms of the cognitive domain, affective-emotional domain, and psychomotor domain. Also, familiarizing them with the content in terms of facts, concepts, principles, generalizations, rules, laws, theories, trends, values, and skills, as well as criteria for selecting content and organizing it, the teacher's guide and its relation to content and educational activities, criteria for selecting educational activities, evaluation and types of evaluation, and the conditions for good evaluation</p>			
--	--	---	--	--	--

15+19	9	Introducing the student to the types of these curricula in terms of the subject-matter curriculum, the activity curriculum, and the core curriculum, and their types in terms of the separate subject-matter curriculum, its advantages and disadvantages, the integrated subject-matter curriculum, the broad fields curriculum, the activity curriculum, its foundations and characteristics, the core curriculum, its characteristics, advantages, and disadvantages	Types of Curricula	Attendance and theoretical	Exams, daily interaction, and participation
20+24	9	Introducing the student to curriculum evaluation, the concept of evaluation, the objectives of	Curriculum Evaluation	Attendance and theoretical	Exams, daily interaction, and participation

		curriculum evaluation, the standards of curriculum evaluation, and the steps of curriculum evaluation in terms of determining objectives, identifying areas, preparing for evaluation, implementation, and the principles on which evaluation is based			
25+28	9	Introducing students to the concept of curriculum development, its definitions, reasons for curriculum development, principles, and basic models, as well as introducing them to the concept of the textbook, its importance, types, functions, methods of authorship, evaluation, and	Curriculum development and its models, The concept of the textbook •	Attendance and theoretical	Exams, daily interaction, and participation

		development			
11.Course Assessment:					
Distribution as follows: 25 marks for monthly and daily exams for the first semester. 25 .marks for monthly and daily exams for the second semester. 50 marks for the final exams					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)					
Main References (Sources)			<p>- Zaytoon, Hassan Hussein (2001): Teaching Design, A Systematic Vision, Alam Al-Kutub, 2nd edition, Cairo</p> <p>2- Saadeh, Joudat Ahmed, Abdullah Mohamed Ibrahim (2008): The Contemporary School Curriculum, 5th edition, Dar Al-Fikr for Publishing and Distribution, Amman</p> <p>3- Salim Mohamed Saber et al. (2006): Curriculum Development and Planning, Dar Al-Fikr, Amman, 1st edition</p> <p>4- Ashour, Rateb Qasim (2004): The Curriculum Between Theory and Practice, 1st edition, Dar Al-Maseera for Publishing and Distribution, Amman</p>		

	Ali, Mohamed El-Sayed (2011): Modern -5 Trends and Applications in Curricula and Teaching Methods, 1st edition, Dar Al-Maseera for Publishing and Distribution, Amman
Supporting Books and References (Scientific Journals, Reports, etc.)	
Electronic References and Internet Websites	Wikipedia, the free encyclopedia (World Wide Web) /https://ar.wikipedia.org/wiki

Course Description Template

1. Academic Course:
Advance Computer
2. Course Code:
3. Semester / Year:
2025-2026
4. Date of Course Description Preparation:
30/10/2025
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
60 h full year
7. Course Instructor(s):
Name: Zahraa Adnan Jameel Email: zahraa.adnan@uobasrah.edu.iq
8. Course Objectives:
1– The student learns how to use the MATLAB program so that he can solve equations and mathematical problems in a way that qualifies him for higher level in the future. 2– Expanding the student’s skill by solving home exercises 3 – Clarifying the basic concepts in MATLAB.

9. Teaching and Learning Strategies

- 1- Educational strategy, collaborative concept planning.
- 2- Brainstorming education strategy.
- 3- Education Strategy Notes Series

10.Course Structure:

Week	Hou rs	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessmen t Method
Weekly 1-3	6	MATLAB	<ul style="list-style-type: none">- Introduction- Run the MATLAB program- Introduction to the MATLAB language- Desktop MATLAB program-MATLAB window components- MATLAB language symbols-The arithmetic sentence- Input and output statements	6 hours in the lab	Questions discussion, and daily exam
Weekly 4-9	12	MATLAB	Conditional control statements and repetition If conditional for loop while loop Sequences and series	12 hours in the lab	Questions discussion, and daily exam

Weekly 10-17	16	MATLAB	Matrices Writing matrices in MATLAB Arithmetic operations on matrices Printing array types in MATLAB Operations on vectors Operations that can be performed on matrices in MATLAB	16 hours in the lab	Questions discussion, and daily exam
Weekly 18-25	16	MATLAB	Functions Subprogramme	16 hours in the lab	Questions discussion, and daily exam
Weekly 26-30	10	MATLAB	Plot 2D drawing 3D drawing	10 hours in the lab	Questions discussion, and daily exam

11.Course Assessment:

Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)	Department library
Main References (Sources)	College library
	MATLAB: A Practical introduction to

Supporting Books and References (Scientific Journals, Reports, etc.)	<p>programming and problem solving, Stormy Attaway 2009</p> <p>Scientific search engines and scientific channels</p>
Electronic References and Internet Websites	<p>https://www.google.com/</p> <p>https://www.youtube.net/</p>

Course Description Template

1. Academic Course:
English
2. Course Code:
3. Semester / Year:
2025-2026
4. Date of Course Description Preparation:
1/10/2025
5. Available Modes of Attendance:
Attendance in classrooms is according to the schedule
6. Total Hours / Total Units:
30 (1 X 30 weeks)
7. Course Instructor(s):
Name: Dr. Ansam Ahmed Abdulrahman Email: ansam.abdulrahman@uobasrah.edu.iq
8. Course Objectives:
<ul style="list-style-type: none">• Develop students' language skills in reading, writing, listening, and speaking.• Develop the ability to effectively communicate with individuals from diverse cultural and national backgrounds.• Improve understanding of topics like technology, science, and tourism, and facilitate the discussion of these topics in English.• Understanding English university textbooks related to their field of study.• Preparing students for careers that rely on the English language.
9. Teaching and Learning Strategies
<ul style="list-style-type: none">• Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure:					
Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
3	1	Tenses		Lecture	
2	1	Auxiliary Verbs		Lecture	
2	1	Modals		Lecture	
2	1	Relative Clauses		Lecture	
2	1	Articles and nouns		Lecture	
2	1	Countable and uncountable		Lecture	
2	1	Singular and Plural Nouns		Lecture	
2	1	Adjectives and adverbs		Lecture	
2	1	Comparatives and Superlatives		Lecture	
2	1	Conjunction		Lecture	
2	1	Prepositions		Lecture	
2	1	Passive		Lecture	
2	1	Paragraph: The Origins of Trigonometric Functions		Lecture	
2	1	Paragraph: Origins of Conic Sections		Lecture	
2	1	Paragraph: A Short History of the Discovery of Pythagoras Theorem		Lecture	
11.Course Assessment:					
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:					
Prescribed Textbooks (if any)					
Main References (Sources)			English Vocabulary in Use: Vocabulary Reference and Practice: with Answers BY MCHAE. MC. CARTHY		
			Basic English Grammar BY ANNE SEATON. Y. H. MEW		

**Ministry of Higher Education and
Scientific Research
University of Basrah
College of Education for Pure Sciences
Mathematics Department**



Course Description Template for the Mathematics Department

The Third Stage

(Academic Year 2025–2026)

Course Description Template

1. Academic Course:
Mathematical Analysis
2. Course Code:
3. Semester / Year:
Annual
4. Date of Course Description Preparation:
2025/10/1
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
120 Hours / 6 Units
7. Course Instructor(s):
Name: Murtada Jassim Mohammed Email :murtada.mohammed@uobasrah.edu.iq Name: Email:
8. Course Objectives:
<p>Scientifically prepare the student to possess fundamental knowledge that develops their cognitive abilities in mathematics, enabling them to delve into various branches of mathematics (Algebra, Statistics, Geometry, Complex Analysis, Topology, etc.).</p> <p>Emphasis on abstract mathematical proof, as Mathematical Analysis is an abstract study of the concepts of differential and integral calculus.</p> <p>Stressing the unity of subject matter in mathematical knowledge, in addition to clarifying each concept, its relation to other concepts, and the relationship between</p>

different concepts and theorems.

Teaching and Learning Strategies

A - Knowledge and Understanding

A1 – For the student to understand the concept of measure and its applications.

A2 – For the student to understand the concept of Lebesgue measure and operations on it.

A3 – For the student to understand the concept of different spaces and the relationship between them.

A4 – For the student to understand the concept of convergence in metric spaces.

A5 – For the student to understand the concept of infinite series, limits, continuity, differentiation, and integration.

A6 – For the student to understand the concept of compactness and connectedness.

A7- For the student to understand the relationship between Riemann and Lebesgue integration and the space of Lebesgue integrable functions.

B – Subject-Specific Skills

B1 – The student is able to perform logical mathematical proof.

B2 – The student is able to distinguish between different spaces and their norms.

B3 – The student is able to distinguish between measurable and non-measurable sets and functions.

B4 – The student is able to answer "why" type questions, in addition to linking different concepts.

Teaching and Learning Methods

1 – Narration (Delivery).

2- Lecture.

3- Exploration.

Assessment Methods

Formative Assessment through daily quizzes/exams.

Continuous Assessment through mid-term exams.

Final Assessment through final examinations.

C- Thinking Skills

C1 – Logical thinking through the use of induction and deduction.

C2 – Creative thinking through finding different ways to prove some mathematical properties and theorems.

Teaching and Learning Methods

Inductive thinking skills.

Logical thinking skills.

Assessment Methods

Diagnostic Assessment.

Continuous Assessment.

Final Assessment.

General and Transferable Skills (Other skills related to Employability and Personal Development)

D1- Producing scientific bulletins containing some scientific concepts.

D2 – Writing research papers (reports after the end of each semester).

D3 – Reviewing other mathematics subjects from previous academic stages.

9. Teaching and Learning Strategies

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
3	12	Basic concepts, Real numbers and their relation to rational numbers, Archimedean property, Complete ordered field, Density theorem for rational and irrational numbers	Basic Concepts:	Explaining scientific material by understanding theories and presenting mathematical examples	Scientific reports and daily and monthly examinations.
2	8	Students recognize the concept of metric and semi-metric spaces, Euclidean spaces, and boundedness.	Complete Metric Space		
2	8	Students identify separable and non-separable spaces.	Separable Spaces		
3	12	Students understand real sequences, convergence in metric spaces, Cauchy sequences, and complete metric spaces.	Convergence in Metric Spaces		

3	12	Students study special infinite series and convergence tests, limits of functions, continuity, sequential and uniform continuity, and the intermediate value theorem	Infinite Series, Limits, and Continuity		
2	8	Students learn about compact sets and key theorems related to compactness, continuity, and connectedness.	Compactness and Connectedness		
2	8	Students study derivatives, differentiable function spaces, properties of derivatives, Rolle's Theorem, and the Mean Value Theorem.	Differentiation		
2	8	Students examine pointwise and uniform convergence, bounded convergence, and relationships between these types, as well as series of functions and power series.	Sequences and Series of Functions		
2	8	Students explore Riemann integrals, criteria for integrability, properties of the Riemann integral, and the Riemann–Stieltjes integral.	Integration		
3	8	Students study the concept of measure, measurable sets, and Lebesgue-measurable functions.	Lebesgue Measure – Measurable Sets and Functions		
3	8	Students understand the concept of Lebesgue integration through examples, its properties,	Lebesgue Integration and Functions of Bounded		

		the relationship between Riemann and Lebesgue integration, and the notion of functions of bounded variation and their relation to absolute continuity.	Variation		
11.Course Assessment:					
Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)			1- Rudin, W., 1964. Principles of mathematical analysis (Vol. 3). New York: McGraw-Hill. 2- Mathematical Analysis by Tom Apostol-		
Main References (Sources)			The Central Library and the College Library, in addition to the department repository, contain a high-level selection of books and specialized resources in the field of Mathematical Analysis.		
Supporting Books and References (Scientific Journals, Reports, etc.)			Introduction to Mathematical Analysis, Dr. Adel Ghassan Naoum		
Electronic References and Internet Websites			- Virtual library services provide accessible resources from international university libraries. https://www.google.com/ https://www.youtube.net/		

Course Description Template

1. Academic Course:
Probability and statistic
2. Course Code:
3. Semester / Year:
year
4. Date of Course Description Preparation:
2025-2026
5. Available Modes of Attendance:
6. Total Hours / Total Units:
120
7. Course Instructor(s):
Name: Jasim Mohammed Ali Fatima Hameed Ali Email: jasim.ali@uobasrah.edu.iq fatima.hameed@uobasrah.edu.iq
8. Course Objectives:
Introduction to Probability Random Variables and Probability Distributions

Mathematical Expectation and Variance

Moments

Joint Distributions

Conditional Probability and Conditional Distributions

Independence

Some Special Probability Distributions

9. Teaching and Learning Strategies

Lecture

Collaborative Learning

Discussion

Solving applied external exercises for each chapter

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1-5	20	Chapter one	Introduction to Probability	Lecture Discussion Collaborative Learning	Daily quizzes, discussions, and homework
6-10	20	Chapter two	Random Variables and Probability Distributions	Lecture Discussion Collaborative Learning	Daily quizzes, discussions, and homework

11-15	20	Chapter three	Mathematical Expectation and Variance	Lecture Discussion Collaborative Learning	Daily quizzes, discussions, and homework
16-20	20	Chapter four	Joint Distributions	Lecture Discussion Collaborative Learning	Daily quizzes, discussions, and homework
21-25	20	Chapter five	Conditional Probability and Conditional Distributions	Lecture Discussion Collaborative Learning	Daily quizzes, discussions, and homework
26-30	20	Chapter six	Some Special Probability Distributions	Lecture Discussion Collaborative Learning	Daily quizzes, discussions, and homework
11.Course Assessment:					
Daily quizzes Questions asked during class Homework Midterm and final exams					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)			Introduction to mathematical statistics by Hogg and Craig		

Main References (Sources)	Probability and mathematical statistics by Prasanna Sahoo Probability, random variables, and stochastic processes by Athanasios Papoulis
Supporting Books and References (Scientific Journals, Reports, etc.)	Applied probability and stochastic processes by Woldzimserz Bryc
Electronic References and Internet Websites	Introduction to mathematical statistics by Hogg and Craig

Course Description Template

1. Academic Course:
Partial Differential Equations
2. Course Code:
Math309
3. Semester / Year:
2026-2025
4. Date of Course Description Preparation:
2025-11-13
5. Available Modes of Attendance:
My presence only
6. Total Hours / Total Units:
4 hours per week, 120 hours per academic year
7. Course Instructor(s):
Name: Asst. Prof. Dr. Faeza Lafta Hasan Email: faazah.hasan@uobasrah.edu.iq
8. Course Objectives:
<ol style="list-style-type: none">1. To equip students with the fundamental concepts of partial differential equations, such as the definition of a differential equation, its order, degree, and methods for solving first-order and first-degree differential equations.2. Methods for solving higher-order differential equations.3. Methods for solving higher-order differential equations.4. To equip students with the skill of formulating mathematical models and solving applied problems in partial differential equations.5. To enhance students' skills in solving homework exercises.

9. Teaching and Learning Strategies

- 1- Cooperative concept-mapping strategy.
- 2- Brainstorming strategy.
- 3- Sequential observation strategy

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4	Identify the concept of the PDE, order, degree, general/particular solutions	Basic Concepts	Lecture	Diagnostic
1	4	Distinguish ODEs vs PDEs; linear/nonlinear; homogeneous/nonhomogeneous	Basic Concepts	Lecture	Diagnostic
1	4	Form PDE from general solution	Basic Concepts	Lecture	Diagnostic
2	8	Solve linear PDEs of the first order by using Lagrange method	PDEs of the first order, and first degree	Lecture	Formative
2	8	Solve PDEs using Charpit method and transformations methods	PDEs of the first order, and first degree	Lecture	Formative
3	12	Solve higher order homogeneous linear PDEs with constant coefficients	Higher order linear PDEs	Lecture	Formative
2	8	Find particular solutions for higher order PDEs with $f(x,y)$	Higher order linear PDEs	Lecture	Formative
1	4	Solve nonhomogeneous higher order PDEs	Higher-order nonhomogeneous PDEs	Lecture	Formative
2	8	Solve second order PDEs with variable coefficients	Second order PDEs	Lecture	Formative
3	12	Fourier series of odd/even functions	Fourier Series	Lecture	Formative
3	12	Heat equation solutions	Heat Equation	Lecture	Formative
2	8	Wave equation solutions	Wave Equation	Lecture	Formative

2	8	Legendre polynomials and functions	Legendre Equation	Lecture	Formative
2	8	Bessel functions	Bessel Functions	Lecture	Formative
3	12	Laplace equation solutions	Laplace Equation	Lecture	Diagnostic

11.Course Assessment:

The distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for the final exam.

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)	د. عطا الله ثامر العاني "مقدمة الى المعادلات التفاضلية الجزئية" وزارة التعليم العالي والبحث العلمي، جامعة بغداد، 1990.
Main References (Sources)	1. Peter J. Olver "Introduction to partial Differential Equations", 2014
Supporting Books and References (Scientific Journals, Reports, etc.)	2. Mark A. Pinsky " Partial Differential Equations and Boundary-Value Problems with Applications ", American Mathematical Society Providence, Rhode Island, 2010
Electronic References and Internet Websites	Scientific search engines and scientific channels

Course Description Template

1. Academic Course: Rings Algebra
2. Course Code: 324 ر ض ج ح
3. Semester / Year: annual
4. Date of Course Description Preparation: 1/9/2025
5. Available Modes of Attendance:
6. Total Hours / Total Units: 120 hours, 4 hours per week for 30 weeks
7. Course Instructor(s):
Name: Dr. Yasir Ahmed Abdulameer Email: yasir.ahmed@uobasrah.edu.iq
8. Course Objectives:
<ol style="list-style-type: none">1. The course aims to introduce students to the fundamental theoretical framework upon which the practical application depends.2. The course integrates the theoretical aspects with other relevant topics.3. To achieve the curriculum and the required skills for developing scientific thinking and self-directed learning in students.4. To familiarize students with the meaning of a cycle, its properties, uses, and applications in daily life, and to enable them to apply its theories in society and in

deriving new knowledge.

9. Teaching and Learning Strategies

1. Lecture format.
2. Discussion format.
3. Guidance via Telegram channels or online meetings (Google Classroom, Google Meet).

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
3 weeks	12 hours	Understanding the meaning of a ring, its properties, and how it works	Definition of a ring and its properties	Lecture and discussion style	Daily and monthly tests and homework
Weeks2	8 hours	Learn about subloops and their properties	subrings	Lecture and discussion style	Daily and monthly tests and homework
3 weeks	12 hours	The meaning of the perfect loop, its properties and importance	ideals	Lecture and discussion style	Daily and monthly tests and homework

3 weeks	12 hours	The meaning, properties, and importance of a quotient ring	Quotient rings	Lecture and discussion style	Daily and monthly tests and homework
6 weeks	24 hours	The meaning and importance of homomorphism	Ring homomorphism	Lecture and discussion style	Daily and monthly tests and homework
4 weeks	16 hours	How to obtain specific types of ideals	Special types of ideals and polynomial loops	Lecture and discussion style	Daily and monthly tests and homework
7 weeks	28 hours	How to expand the field and study models	Expanding the field and models	Lecture and discussion style	Daily and monthly tests and homework
2 weeks	8 hours	Other types of partial modules	Sub modules	Lecture and discussion style	Daily and monthly tests and homework

11.Course Assessment:

1. Daily and monthly tests.
2. Assigning students academic tasks for which they will be rewarded.
3. Assigning students reports related to the course topics.

12.Learning and Teaching Resources:	
Prescribed Textbooks (if any)	1. Introduction to abstract and linear algebra by David M. Burton 2. مقدمة في الجبر المجرد تأليف د. ليلى سلمان و د. محمد عبد الرزاق
Main References (Sources)	1- نظرية الحلقات تأليف د. عادل غسان نعيم و د. باسل الهاشمي. 2- مفردات منهج الحلقات تأليف د. بثينة نجاد شهاب و د. حاتم يحيى خلف
Supporting Books and References (Scientific Journals, Reports, etc.)	Modules and Rings by F. kasch
Electronic References and Internet Websites	

Course Description Template

1. Academic Course:
Numerical analysis
2. Course Code:
3. Semester / Year:
annual
4. Date of Course Description Preparation:
2025-8-15
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
Weekly: theoretical = 2 hours, practical (laboratory) = 2 hours Semester grade = (35% theoretical) + (15% laboratory): Annual pursuit grade = 50% Final exam score = 50%: total number of units = 6
7. Course Instructor(s):
Name: Nouri Yasser Abdel Hassan Email: noori.hassan@uobasrah.edu.iq
8. Course Objectives:
Increasing and consolidating mathematical concepts to prepare the student to benefit from numerical analysis in practical applications (engineering, physical, chemical, etc).

9. Teaching and Learning Strategies

A- Educational strategy, collaborative concept planning.

B- Brainstorming education strategy.

C- Education Strategy Notes Series

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
4	8	Recognize some basic mathematical concepts and definitions and calculate absolute error and relative error	Elementary mathematical concepts, errors and their analysis	Lecture + practical application	Introductory + structural
5	10	Approximating solutions to nonlinear equations with one variable using different numerical iterative methods such as the fixed point method, the classification method, the pseudoposition method, the Newton-Raphson method, the secant method, and the Halley method.	Numerical solutions of nonlinear equations	Lecture + practical application	Introductory + structural

5	10	Finding the approximate solutions to systems of linear equations using direct and indirect methods.	Numerical solutions of systems of linear equations	Lecture + practical application	Introductory + structural
1	2	Identify the level of knowledge and educational attainment	Test1	Written	Course one
4	8	Learn about Egrange and Newton's formulas for inclusion and use inclusion techniques to solve many mathematical problems	Interpolation and approximation of functions	Lecture + practical application	Introductory + structural
5	10	Approximating differential and integral functions numerically	Numerical calculus	Lecture + practical application	Introductory + structural
5	10	Finding solutions to ordinary differential equations numerically and identifying the relationship of numerical analysis to physical problems as differential equations	Numerical solutions of differential equations	Lecture + practical application	Introductory + structural
1	2	Identify the level of knowledge and educational attainment	Test2	Written	Course Two

11.Course Assessment:	
12.Learning and Teaching Resources:	
Prescribed Textbooks (if any)	1. Introduction to Numerical Analysis: Hildbrand F.B. 2. Introduction to numerical analysis: Dr. Kazem Muhammad Hussein Al-Lami
Main References (Sources)	1. Numerical Analysis: Burden R.L. 2. Principles of numerical analysis: Dr. Muhammad Ali Sadiq Seifi & Dr. Ibtisam Kamal Al-Din
Supporting Books and References (Scientific Journals, Reports, etc.)	
Electronic References and Internet Websites	

Course Description Template

1. Academic Course:
Counseling and Mental Health
2. Course Code:
3. Semester / Year:
annual
4. Date of Course Description Preparation:
4/1/2025
5. Available Modes of Attendance:
.Attendance is in person only and according to the schedule posted in the department
6. Total Hours / Total Units:
6 hours per week
7. Course Instructor(s):
Name: Noor Abbas Kadhum Email: Name: Email:
8. Course Objectives:
1. The student should be able to effect positive changes in societal behavior. 2. The student should be able to use what they have learned to develop positive future plans. 3-The student should be able to effectively connect related topics within the

.course content					
9. Teaching and Learning Strategies					
1- Brainstorming teaching strategy. 2- Cooperative learning. .3-Problem-based learning, imaginative play, and direct instruction					
10.Course Structure:					
Week	Hou rs	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessme nt Method
+1 2+3+4	4	Introducing students to the meaning of guidance and its justifications, and the importance of its presence in educational institutions. Also introducing them to the foundations of psychological guidance, the goals of a successful counselor, the objectives of guidance, and guidance methods	1. Educational Guidance 2. Justifications and Importance of Educational Guidance in Schools 3. Foundations of Psychological Guidance and Counseling 4. Objectives of Guidance 5. Educational Guidance Curricula 6. Characteristics of an Educational Counselor Guidance Methods7- .	Attendance and theoretical	Exams, daily interaction, and scientific reports

5+6+7+8	4	Introducing students to the meaning of guidance methods, their types, advantages, and disadvantages, comparing them, and the role of the advisor in the university and the goals they achieve	1- Individual guidance 2- Group guidance 3- Direct guidance 4- Indirect guidance 5- Educational guidance and its role in the university The goals that the -6 educational counselor seeks to achieve in the university	Attendance and theoretical	Exams, daily interaction, and scientific reports
9+10+11+12	4	Introducing students to the role of the teacher and their tasks in guidance and counseling in schools, and familiarizing them with the problems that occur in schools and the role of counseling in solving them	1- The teacher's role in the guidance process 2- Problems that occur in schools and the role of guidance in solving them 3- Academic delay Bullying among -4 students	Attendance and theoretical	Exams, daily interaction, and scientific reports

13+14+ 15+16	4	Introducing students to the role of counseling in solving problems that occur in schools, and helping them on how to choose the appropriate specialization and how to overcome exam anxiety	1- Dropping out of school 2- Cheating on exams 3- Theft 4- Choosing the right major 5-Exam anxiety	Attendance and theoretical	Exams, daily interaction, and scientific reports
17+18+ 19+20	4	Introducing students to the meaning of mental health, informing them of the signs that indicate an individual enjoys mental health, introducing them to the goals of mental health, and highlighting the importance of mental health in various life areas (family, school, community, industry	1- Mental Health 2- Goals of Mental Health 3- The Importance of Mental Health in Life Areas 4-Concepts Related to Mental Health	Attendance and theoretical	Exams, daily interaction, and scientific reports

21+22+ 23+24+ 25	5	Introducing students to manifestations of healthy psychological adjustment and its types, and familiarizing them with mental health and adaptation in various areas of life	1- Signs of Psychological Adjustment 2- Types of Psychological Adjustment 3- Mental Health and Adaptation 4- School and Mental Health 5-Signs of Teacher Burnout	Attendance and theoretical	Exams, daily interaction, and scientific reports
26+27+ 28	5	Neurosis and its causes, symptoms, diagnosis, and treatment, and their definition of anxiety and its meaning, its types and classification, its causes and symptoms, diagnosis and treatment, and their definition of phobic neurosis (phobia), and the difference between normal fear and pathological fear, its causes and symptoms, diagnosis,	1- Neurosis 2- Anxiety 3-Phobic neurosis (phobia)	Attendance and theoretical	Exams, daily interaction, and scientific reports

		and treatment			
29	6	Guiding Mathematics Department students on classroom learning psychology (active learning, cooperative learning, brainstorming, problem-solving	Classroom Learning Psychology	Attendance and theoretical	Exams, daily interaction, and scientific reports
30	6	Guiding Mathematics Department Students on Classroom Teaching Psychology (Motivation, Individual Differences, Classroom Management, (Teaching Methods	Classroom Learning Psychology	Attendance and theoretical	Exams, daily interaction, and scientific reports

11.Course Assessment:

Distribution as follows: 25 marks for monthly and daily exams for the first semester. 25 .marks for monthly and daily exams for the second semester. 50 marks for the final exams

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)

Main References (Sources)	<p>Principles of Psychological Counseling for Counselors and Specialists (2008) by Mohamed Ahmed Khaddam, Mashaqbeh, Amman</p> <p>Principles of Guidance and Psychological -2 Counseling (2010) by Sami Mohamed Milhem, Amman, Dar Al-Maseera</p> <p>Personality Psychology (1990) by Hanaa -3 Aziz Dawood, Nazem Hashem Al-Obaidi, University of Baghdad</p> <p>Psychological Counseling and Educational -4 Guidance (1991) by Mostafa Mahmoud Al-Imam, Anwar Hussein Abdul Rahman, University of Baghdad</p> <p>Fundamentals of Psychology (1982) by -5 Ahmed Ezzat Rajeh, Alexandria</p>
Supporting Books and References (Scientific Journals, Reports, etc.)	<p>Psychological Guidance and Counseling - 1 2005, Hamed Abdel Salam Zahran, Cairo, Alam Al-Kutub</p> <p>The Reference in Mental Health 2009, - 2 Adeeb Mohammed Al-Khalidi, Baghdad, Ababil Office</p>
Electronic References and Internet Websites	Online Psychology Websites and Scientific Associations

Course Description Template

1. Academic Course:
Curricula and methods of teaching mathematics
2. Course Code:
CES311
3. Semester / Year:
Annual 2025-2026
4. Date of Course Description Preparation:
1-9-2025
5. Available Modes of Attendance:
My presence only
6. Total Hours / Total Units:
hours per week: 60 hours per academic year 2
7. Course Instructor(s):
Name: Abdul Wahid Mahmood Mohamed Email: Abdulwahid.mohamed@uobasrah.edu.iq
8. Course Objectives:
<ol style="list-style-type: none">1. The student should understand the concept of Science, Technology, and Society (STS).2. The student should understand the concept of curriculum, both historically and in modern times.3. The student should learn the psychological, social, and cultural foundations of curriculum development.4. The student should understand the meaning and classification of educational objectives.5. The student should understand teaching terminology and

methods.

6. The student should understand practical demonstrations, field trips, and educational games.

7. The student should understand e-learning, blended learning, and the flipped classroom strategy.

8. The student should understand how to formulate questions and the types of assessment.

9. The student should understand classroom management skills and the types of planning.

9. Teaching and Learning Strategies

1. Collaborative learning. 2. Lecture. 3. Exploration. 4. Brainstorming.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4 hours	1. The student learns about science and technology.	Science and Technology	Lecture + Discussion	Daily and monthly exams
2					
3					
4	8 hours	2. The student learns the fundamentals of the curriculum.	Basic Concepts in the Curriculum	Discussion	
5					
6				Lecture + Discussion	=
7	6 hours		Principles of Curriculum Development		=
8		3. The student learns the school curriculum.		Brainstorming	
9					
10	6 hours	4. The student learns	Curriculum		=

11	14 hours	about the course content.	Content	Discussion	=
12				–	
13			Teaching Methods and Educational Technologies	Collaborative Learning	
14	8 hours	5. The student learns about teaching methods and educational technologies.			=
15				Lecture-Discussion	
16					
17	4 hours		The Concept of Special Education -	Discussion	=
18			The Concept of Disability -		
19		6. The student learns about teaching methods for students with special needs.	Challenges Faced	Discussion	
20	4 hours				=
21				Collaborative Learning	
22					
23	8 hours	The student learns about types of assessment and classroom questions.	Assessment - Classroom Questions		
24					
25					
		The student understands the basics of a textbook.	Textbook		
			Lesson Planning		
		The student understands types of lesson planning.			
11.Course Assessment:					
The distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester.					

.50 marks for the final exam

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)

Curriculum and Methods of Teaching Mathematics

Main References (Sources)

Booklet on Curriculum and Methods of Teaching Mathematics, prepared by the subject teacher

Supporting Books and References (Scientific Journals, Reports, etc.)

1. Abu Zeina, Farid Kamel. (2003). School Mathematics Curricula and Teaching Methods. Kuwait and the UAE: Al-Falah Library; Amman: Hanin Library.
2. Bell, Frederick H. (1986). Methods of Teaching Mathematics. Translated by Muhammad Amin Al-Mufti and Mamdouh Suleiman. Vol. 2, 2nd ed., Arab House for Publishing and Distribution, Cairo.
3. Al-Hassani, Ghazi Khamis. (1998). Modern Trends in Teaching. 1st ed., Sana'a, Yemen.
4. Al-Hassani, Ghazi Khamis. (2011). Curricula and Methods of Teaching Mathematics. 1st ed., University of Baghdad, Iraq.
5. Al-Sadiq, Ismail Muhammad Al-Amin Muhammad. (2001). Methods of Teaching Mathematics - Theories and Applications. 1st ed., Arab Thought House, Cairo.
- 6- Al-Kubaisi, Abdul Wahid Hamid

	<p>(2008) *Methods of Teaching Mathematics: Its Techniques (Examples and Discussions)*, 1st ed., Arab Community Library for Publishing and Distribution, Amman.</p> <p>7- William Obeid (2009) *Teaching and Learning Strategies in the Context of a Culture of Quality: Conceptual Frameworks and Applied Models*, 1st ed., Dar Al-Masirah for Publishing, Distribution, and Printing, Amman.</p>
Electronic References and Internet Websites	

**Ministry of Higher Education and
Scientific Research
University of Basrah
College of Education for Pure Sciences
Mathematics Department**



Course Description Template for the Mathematics Department

The Fourth Stage

(Academic Year 2025–2026)

Course Description Template

1. Academic Course:
Topology
2. Course Code:
3. Semester / Year:
2025-2026
4. Date of Course Description Preparation:
1/9/2025
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
4 hours for each weak
7. Course Instructor(s):
Name: Dr. Mudhar Abbas Majeed
Email: mudhar.majeed@uobasrah.edu.iq
8. Course Objectives:
<p>1. The student will acquire an understanding of the basic principles of topological spaces and continuous functions between them, as well as topological properties and methods for generalizing certain mathematical concepts explored in the third-year mathematical analysis course.</p> <p>2. The student will be ready to engage with advanced topics such as algebraic topology and differential topology at the graduate level.</p>
9. Teaching and Learning Strategies
<ul style="list-style-type: none"> • Interactive Learning: Utilizing interactive learning methods, such as group discussions and collaborative activities. Students can work in small groups to solve problems, which enhances shared understanding and encourages the exchange of ideas. • Practical Application: Integrating practical applications into the curriculum through projects or experiments related to topological spaces. • Use of Multimedia: Employing multimedia, such as educational videos and interactive

simulations, to clarify difficult concepts. These media can help present ideas visually and make learning more interactive and engaging.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4	Concept of Topology, open and closed sets with basic examples.	The concept of Topology.	Explaining the scientific material through understanding theories and presenting mathematical examples.	Scientific reports and exams are handed in daily and monthly.
2	4	Usual topology and finite-complement topology.			
3	4	Base and subbase for a topological space with examples.	Base and subbase for a given topology.		
4	4	Neighborhood and, union and intersection a family of topologies.			
5	4	Interior points, exterior points, and boundary point with some examples.			
6	4	Limit points, subspace(relative topology).	The sets and points in topological spaces.		
7	4	Product topology via the base and subbase with illustrative examples.			
8	4	Continuity between topological spaces and important theorem about continuity.			
9	4	Open and closed maps and homeomorphism.	Product topology.		
10	4	Topological property, quotient and identification topology.			
11	4	Separation axioms, topological and hereditary			
			Continuity and homeomorphism.		

		properties, T_0 , T_1 , and T_2 spaces.			
12	4	Regular and normal spaces, T_3 and T_4 spaces.	Separation axioms.		
13	4	Completely regular and completely normal spaces, and Eurozone's characteristic theorem.			
14	4	Metric space, construction of metric topology with examples.			
15	4	Some basic theorems and the relation between metric and Hausdorff spaces.	Metric spaces.		
16	4	Compact spaces, basic definitions and examples, Hien-Borel theorem.			
17	4	Some of fundamental theorems and compactness property.			
18-24	Fourth-year students' application for 6 weeks.		Compact spaces.		
25	4	The importance of compactness property in Hausdorff spaces.			
26	4	Connected spaces, basic definitions and examples.			
			Connected spaces		

27	4	The basic theorems that demonstrate the necessary conditions for connected spaces.			
28	4	Locally connected spaces, basic definitions and examples, its relation with connected spaces.			
29	4	Path connected spaces, definitions and examples, product of paths.			
30	4	The relation between the connected and path connected spaces.			

11.Course Assessment:

20% for the exam grade for each semester= 40% for two semesters.
10% for daily testing and discussions.
50% final exam.

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)	أساسيات التوبولوجيا العامة . وليام بيرفن، ترجمة د. عطا الله ثامر العاني، جامعة الموصل، 1985.
Main References (Sources)	Martin D. Crossley, Esseential Topology, Springer- Verlag London Limited,2005.
Supporting Books and References (Scientific Journals, Reports, etc.)	1- J. N. Sharma, Topology, Krishna Prakashan Mandir, 1977. 2-Dugunji J. , <i>Topology</i> , Boston, Allyn & acon,Inc., 1964. 3- Kosinowski C. , <i>A first course in algebraic topology</i> , Cambridge University Press, 1980.
Electronic References and Internet Websites	https://dokumen.pub/foundations-of-general-topology-1nbsped-0125509502-9780125509503.html .

Course Description Template

1. Academic Course:
Complex Analysis
2. Course Code:
Math 413
3. Semester / Year:
2025-2026
4. Date of Course Description Preparation:
2025-2026
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
4 hours for each weak
7. Course Instructor(s):
Name: Asst. Prof. Dr. Sarem H. Hadi Email: sarim.hadi@uobasrah.edu.iq
8. Course Objectives:
<ul style="list-style-type: none">• Understanding the essential basics for defining the set of complex numbers and their relationship to the set of real numbers.• Recognizing the importance and utility of complex analysis.• Expanding on some concepts and ideas studied in calculus and in mathematics courses 311 and 312.• Understanding the concept of analytic functions and their relationship to the Cauchy-Riemann equations.• Understanding the concept of integrating complex functions.• Being able to apply theorems and facts about analytic functions to the integration of complex functions.<ul style="list-style-type: none">• Understanding the concept of Laurent series.

9. Teaching and Learning Strategies

- **Interactive Learning:** Utilizing interactive learning methods, such as group discussions and collaborative activities. Students can work in small groups to solve problems, which enhances shared understanding and encourages the exchange of ideas.
- **Practical Application:** Integrating practical applications into the curriculum through projects or experiments related to complex analysis.
- **Use of Multimedia:** Employing multimedia, such as educational videos and interactive simulations, to clarify difficult concepts. These media can help present ideas visually and make learning more interactive and engaging.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4	• Properties of Algebra for Complex Numbers , Absolute Value and Conjugate Numbers	Complex numbers	Explaining the scientific material through understanding theories and presenting mathematical examples.	Scientific reports and exams Daily and monthly
2	4	• Polar Form of a Complex Number			
3	4	• Exponential Form of a Complex Number			
4	4	• Root of a Complex Number			
5	4	• Limit of Complex Functions			
6	4	• Continuity of Complex Functions			
7	4	• Derivatives of Complex Functions	Analytic functions		
8	4	• Cauchy-Riemann Equations			
		• Sufficient Condition for the Differentiability of Complex Functions			
		• Analytic Functions			
		• Harmonic Functions			
		• Complex Exponential Function			
		• Complex Logarithmic Function			
		• Complex Powers	Trigonometric functions		
		• Complex Trigonometric Functions			

9	4	• Complex Hyperbolic Functions			
10	4	• Path of the Curve (Perimeter of the Shape)			
11	4	• Path Integral			
12	4	• Indefinite Integral	Curve		
13	4	• Cauchy-Goursat Theorem	integratio		
14	4	• Cauchy Integral Formula	n		
15	4	• Liouville's Theorem			
16	4	• Taylor Series and Laurent Series.	Series and		
17	4	• Classification of Singular Points	sequences		
17	4	• Cauchy's Residue Theorem			
Fourth-Year Students' Teaching Practicum for 40 Days					
25	4	• Zeros and Poles of a Function	Types of		
26	4	• Calculation of Improper Integrals	outliers		
27	4	• Calculation of Improper Trigonometric Integrals	Dependen		
30-28	4	• Angle-Preserving Functions and Their Physical Applications.	t integrals		
			Angle-preserving functions		
11.Course Assessment:					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)			Ruel V. Cherchill and James W. Brow, McGraw-Hill International.		
Main References (Sources)			A First Course in Complex Analysis with Applications (2003), Dennis G. Zill and Patrick D. Shanahan, Jones and Bartlett Publishers, London.		
			لتحليل المركب وتطبيقاته، وليام ر دريك		

Supporting Books and References (Scientific Journals, Reports, etc.)	<p>Scientific search engines and scientific channels.</p> <p>سلسلة شوم, باللغة العربية</p>
Electronic References and Internet Websites	<p>https://www.youtube.com/watch?v=G_eDWnCIQQ</p> <p>https://www.noor-book.com/book/review/644419</p>

Course Description Template

1. Academic Course:
Mathematical Statistics
2. Course Code:
402 M
3. Semester / Year:
2025-2026
4. Date of Course Description Preparation:
2025-2026
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
4 hours for each weak
7. Course Instructor(s):
Name: Ameera Jaber Mohaisen
Email: ameera.mohaisen@uobasrah.edu.iq
8. Course Objectives:
1- Study some techniques to find distributions of functions of random variables . 2- Understanding the concept of statistical inference (estimation & testing hypotheses) . 3- Create scientifically where the student will be able to acquire basic information develops mental abilities in statistics . 4- Student can delve into the mathematical statistics in the master and Ph.D. stage.
9. Teaching and Learning Strategies
1- Interactive Learning: Utilizing interactive learning methods, such as group discussions and collaborative activities. Students can work in small groups to solve problems, which enhances shared understanding and encourages the exchange of ideas. 2- Practical Application: Integrating practical applications into the curriculum through projects or experiments related to the mathematical statistics.

3- **Use of Multimedia:** Employing multimedia, such as educational videos and interactive simulations, to clarify difficult concepts. These media can help present ideas visually and make learning more interactive and engaging.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4	Introduction , discrete probability distributions and its related	The distribution of random variables functions	Explaining the scientific material through understanding theories and presenting mathematical examples.	Scientific reports and exams Daily and monthly
2	4	Continuous probability distributions and its related			
3	4	Relation between the distributions (t) and (F) with statistical tables			
4	4	Sample mean , central limit theorem , sample variance sampling from normal distribution , distribution of the sample proportion			
5	4	Introduced distribution of order statistics and	Order statistics		
6	4	Applications of order statistics	Point estimation theory		
7	4	Introduction (general concept and definitions) , properties of good point estimator , unbiasedness			
8	4	Consistency (closeness), efficiency , mean square error , sufficient			
9	4	Rao-Blackwell theorem, Fisher-Neyman criterion , completeness			
10	4	Uniqueness, Rao-Cramer			
11	4	Maximum likelihood method , moments method	Methods of estimation,		

12	4	Least square method, Bayesian method			
13	4	Introduction(general concepts and definitions)	Interval estimation theory		
14	4	Confidence interval for means			
15	4	Confidence interval for proportion for large samples, confidence interval of difference between two means			
16	4	Confidence interval for variance of normal distribution			
17	4	Introduction(general concepts and definitions) simple hypothesis versus simple alternation , composite hypothesis, Test of hypothesis , sample from normal distribution , critical region	Test of hypothesis		
Fourth-Year Students' Teaching Practicum for 40 Days					
25	4	Type I and type II errors, significance level of the test (size of the critical region).			
26	4	Neyman-Pearson theorem.			
27	4	Likelihood ratio test (construction best critical region)	Test of hypothesis		
30-28	4	Sequential test of hypothesis, hypothesis test about population mean			
11.Course Assessment:					

12.Learning and Teaching Resources:	
Prescribed Textbooks (if any)	Introduction to Mathematical Statistics, Robert V. Hogg / Allen T. Craig , 7 th Edition , Macmillan Publishing Co. , Inc. New York, 2013.
Main References (Sources)	Introduction to the theory of Statistics , A. M. Mood , F. A. Graybill , D. C. Boes , 3 rd Edition , McGraw – Hill , 1974 .
Supporting Books and References (Scientific Journals, Reports, etc.)	
Electronic References and Internet Websites	

Course Description Template

1. Academic Course:
Applied Mathematics
2. Course Code:
3. Semester / Year:
2025-2026 (Annual)
4. Date of Course Description Preparation:
1-10-2025
5. Available Modes of Attendance:
List of Attendance(Attendance only)
6. Total Hours / Total Units:
4h week/ 120h fully year
7. Course Instructor(s):
Name: Prof. Dr. Abdul-Sattar Jaber Ali Al-Saif
Email: abdulsattar.ali@uobasrah.edu.iq
8. Course Objectives:
Applied mathematics involves formulating problems that lead to differential equations (ordinary or partial), classifying and characterizing equations and problems of different types, and examining exact and approximate methods for solving these problems. explains how differential equations play important roles in life, pointing out also how they're useful in the universe, and its benefits in society (industrial, .economic,...). Through this course, the students can obtain good and high skills in this field
9. Teaching and Learning Strategies
1- Educational strategy, collaborative concept planning. 2- Brainstorming education strategy. 3- Education Strategy Notes Series

10.Course Structure:					
Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4	introduction (math. preliminaries)		theoretical lecture	Scientific reports + Preliminary and formative assessments
2	4	Concepts and definitions			
3	4	Review for differential equs.			
4	4	Classifications of 2 nd -order P.D.Es		theoretical lecture	
5	4	Canonical forms			
6	4	Modeling (introduction)with			
7	4	Single differential equation			
8	4	Boundary value problems		theoretical lecture	
9	4	separation of variables method		theoretical lecture	
10	4	Laplace transformation method		theoretical lecture	
11	4	Fourier transformation method			
12	4	Modeling (introduction) with		theoretical lecture	
13	4	System differential equations		theoretical lecture	
14	4	Methods of solution		theoretical lecture	
15	4	Existing and unique DEs		theoretical lecture	
16	4	Stability of differential equations		theoretical lecture	
17	4	Physical applications			
18	4	Solving physical problems& systems			
19	4	Chemistry applications			
20	4	Solving Chemistry problems& systems			
	4	Biological applications			
	4			Training	
	4	training at school			
	4	training at school			
	4	training at school			

21		training at school			
22	4	training at school			
23	4	training at school		theoretical lecture	
24	4			theoretical lecture	
25	4	solving Biological problems& systems			
26	4	Other applications		theoretical lecture	
27	4	numerical solution for single Model		theoretical lecture	
28	4	numerical solution for coupled Model			
29	4		Exam	Written	
30					final
vacati					
11.Course Assessment:					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)			Applied Mathematics		
Main References (Sources)			1- Mark A. P. "Partial diff. equs. and boundary-value problems with applications" 2011 2- Glenn F., Peter F., and Arthur J."Modelling with Differential and Difference Equations" Cambridge University Press, 2006		
Supporting Books and References (Scientific Journals, Reports, etc.)			1-Mark A. P. "Partial differential. equations. and boundary-value problems with applications" 2011 2-Glenn F., Peter F., and Arthur J."Modelling with Differential and Difference Equations" Cambridge University Press, 2006 3-Erich Z." Partial differential equations and applied mathematics" 1989 4-Nakhle H." Partial diff. equations. with Fourier series and boundary value problems " 2000 5-Evans G., Blackledge J. and Yardley P." Analytic method for partial diff. equations. " 2001 6-Duffy D. G." Transform methods for solving partial different 7-D. N. Burghes and M. S. Borrie "Modelling with differential e		

Electronic References and Internet Websites	https://www.google.com/ https://www.youtube.net/
--	--

Course Description Template

1. Academic Course:
Approximation theory
2. Course Code:
3. Semester / Year:
Annual
4. Date of Course Description Preparation:
8 /11/2025
5. Available Modes of Attendance:
Attending only
6. Total Hours / Total Units:
4 h week, 120 h full year
7. Course Instructor(s):
<p>Name: Prof Dr. Ali J. Mohammad</p> <p>Email: alijasmoh@gmail.com</p> <p>Name: Asst. teacher Iman A. Abdul Samad</p> <p>Email: iman.aziz@uobasrah.edu.iq</p>
8. Course Objectives:
<p>– Providing students with the skill of applying Approximation theory , such as how to approach diffi function with simpler functions with positive linear operators such as Bernstein operator, Szasz operat Baskakov operator and Beta operator and study the amount of error resulting from this approximation well as study a number of definition and theorems related to the approximation , such as the koro theorem</p> <p>2– Expanding the student’s skill by solving home exercises</p>

3 – Clarifying the basic concepts in calculus

9. Teaching and Learning Strategies

- 1- Educational strategy, collaborative concept planning.
- 2- Brainstorming education strategy.
- 3- Education Strategy Notes Series

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	4h	Overview of the course and vocabulary in general Study some definitions such as Vector space, sub space, norm ,normed vector space and Taylor polynomial And solve some example and exercises and give homework			
2	4h	Study of the Bernstein sequence and it's weight			
3	4h	function properties.			
4	4h	Prove of convergence of Bernstein sequence using korovkin theorem.			
5	4h	Study of the Szasz			
6	4h	sequence and it's weight			
7	4h	function properties.			

8	4h	Prove of convergence of Szasz sequence using korovkin theorem.			
9	4h	Study of the Baskakov			
10	4h	sequence and it's weight			
11	4h	function properties.			
12	4h	Prove of convergence of Baskakov sequence using korovikn theorem.			
13	4h	Study of the Beta			
14	4h	sequence and it's weight			
15	4h	function properties.			
vacation		Prove of convergence of Beta sequence using korovkin theorem.			
16	4h	Study Bernstein			
17	4h	sequences in close interval $[a,b]$			

Fourth-Year Students' Teaching Practicum for 40 days

	4h				
25	4h	Study the moment			
26	4h	function of Bernstein			
27	4h	sequence and Szasz			
28		sequence and study the moment function of			

29 30	4h 4h	Baskakov sequence and Beta. Study The Notations O and o .			
11.Course Assessment:					
Distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. 50 marks for final exams					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)					
Main References (Sources)			<ul style="list-style-type: none"> • P. P. Korovkin: Linear Operators and Approximation Theory, Hindustan Publishing Corp (India) Delhi, 1960, Translated from Russian Edition 1959. • G.G. Lorintz: Bernstein Polynomials, Univ. of Texas, Austin, Texas, 1986. • V. Gupta, T. M. Rassias, P. N. Agrawal and A. M. Acu: Recent Advances in Constructive Approximation Theory, Springer International Publishing AG, part of Springer Nature 2018 		
Supporting Books and References (Scientific Journals, Reports, etc.)					
Electronic References and Internet Websites			https://www.google.com/ https://www.youtube.net/		

Course Description Template

1. Academic Course:
measurement and evaluation.
2. Course Code:
CES411
3. Semester / Year:
Annual 2025-2026
4. Date of Course Description Preparation:
1-9-2025
5. Available Modes of Attendance:
My presence only
6. Total Hours / Total Units:
hours per week: 60 hours per academic year 2
7. Course Instructor(s):
Name: Abdul Wahid Mahmood Mohamed Email: Abdulwahid.mohamed@uobasrah.edu.iq
8. Course Objectives:
A1- The student will learn the basic concepts of measurement and evaluation. A2- The student will learn the types of measurement. A3- The student will learn the characteristics of a good test. A4- The student will learn how to construct achievement tests. A5- The student will learn about statistical test analysis, observation, and evaluation. A6- The student will learn about non-parametric methods.

9. Teaching and Learning Strategies					
Strategies: 1- Collaborative learning 2- Lecture 3- Exploration 4- Brainstorming					
10.Course Structure:					
Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
1	6 hours	.1The student learns the concept of measurement and evaluation.	Basic Concepts in Measurement and Evaluation	Learning Methods	Daily and monthly exams
2					
3					
4				Lecture	
5					
6	8 hours	.2The student learns about the types of achievement tests.	Achievement Tests	Discussion	=
7					
8					
9				Lecture +	
10				Discussion	
11	12 hours	.3The student learns how to construct an achievement test.	Constructing Achievement Tests		=
12					
13				Brainstorming	
14	8 hours				
15					
16		.4The student learns the characteristics of a good test.	Characteristics of a Good Test	Lecture	
17					
18					
19					
20					
	16 hours	.5The student learns how to calculate item difficulty and discrimination.	Statistical Analysis of Tests	Discussion +	Coopera

21				tive	
22				Learning	
23					
24	10 hours	6- The student learns about non-parametric statistics.	Non-Parametric Methods		
25					

11.Course Assessment:

The distribution is as follows: 25 marks for monthly and daily exams for the first semester. 25 marks for monthly and daily exams for the second semester. .50 marks for the final exam

12.Learning and Teaching Resources:

Prescribed Textbooks (if any)	Measurement and Evaluation Book
Main References (Sources)	Measurement and Evaluation Booklet - Prepared by the Course Instructor
Supporting Books and References (Scientific Journals, Reports, etc.)	<p>Al-Imam, Mustafa, et al. (1991): - Assessment and Measurement, Dar Al-.Hikma Press, Baghdad</p> <p>Al-Dulaimi, Ihsan Alawi, and Adnan - Mahmoud Al-Mahdawi (2000): Measurement and Evaluation in the Educational Process, Dar Al-Kutub Wal-.Watha'iq, Baghdad</p> <p>Duran, Roni (1985): Fundamentals of - Measurement and Evaluation in Science Teaching, translated by Muhammad Saeed et al., Al-Yarmouk .University, National Press, Jordan</p> <p>Al-Zahir, Zakaria Muhammad, et al. - (1999): Principles of Measurement and Evaluation in Education, 1st ed., Al-</p>

	<p>Thaqafa Library for Publishing and .Distribution, Amman</p> <p>Allam, Salah Al-Din (2000): - Educational and Psychological Measurement and Evaluation, Dar Al-.Fikr Al-Arabi, Cairo</p> <p>Malham, Sami Muhammad (2000): - Measurement and Evaluation in Education and Psychology, 1st ed., Dar .Al-Masirah, Amman</p>
Electronic References and Internet Websites	<p>Al-Muzaini, Osama (2010): Measurement and Evaluation (Net) - www.site.iugaza.edu.ps/omozini/files/2010/02/mesur.doc</p>

Course Description Template

1. Academic Course:
Practical Teaching
2. Course Code:
3. Semester / Year:
2025-2026
4. Date of Course Description Preparation:
10-11-2025
5. Available Modes of Attendance:
In class
6. Total Hours / Total Units:
30 hours / 60 credits
7. Course Instructor(s):
<p>Name: Dr. Ali Hasan Ali</p> <p>Email: ali.hasan@uobasrah.edu.iq</p> <p>Name:</p> <p>Email:</p>
8. Course Objectives:
<p>This course aims to prepare pre-service mathematics teachers to effectively integrate pedagogical knowledge, teaching strategies, and classroom practices. The course provides students with opportunities to apply theoretical concepts in real or simulated teaching environments through micro-teaching sessions.</p>

- 1- Understand the professional role and responsibilities of a mathematics teacher within the school environment.
- 2- Apply modern teaching strategies and methods appropriate for teaching mathematics at different grade levels.
- 3- Design a complete daily lesson plan that includes objectives, instructional procedures, teaching aids, and assessment methods.
- 4- Utilize appropriate teaching aids and educational technologies to simplify and explain mathematical concepts.
- 5- Conduct a Micro-Teaching lesson (10–15 minutes) in front of peers and the instructor while following proper lesson structure.
- 6- Demonstrate effective verbal and non-verbal communication skills in the classroom.
- 7- Implement different assessment techniques to evaluate students' understanding and use feedback to improve teaching.
- 8- Identify and address common learning difficulties and errors in mathematics.
- 9- Develop self-confidence and strengthen the professional teaching identity of the student teacher.
- 10- Adhere to ethical and professional standards in teaching, including time management and respectful interaction.

9. Teaching and Learning Strategies

This course employs a variety of instructional strategies to ensure active engagement and the development of practical teaching skills. The following strategies will be used throughout the course:

Lecture and Discussion

Used to introduce theoretical concepts related to teaching methods, lesson planning, and classroom management.

Demonstration

The instructor models effective teaching skills and techniques that the student teachers are expected to practice.

Micro-Teaching Sessions

Each student delivers a short teaching segment (10–15 minutes) to peers and receives constructive feedback.

Collaborative Learning

Students work in groups to plan lessons, develop teaching aids, and discuss classroom challenges.

Peer Observation and Feedback

Students observe each other's teaching performances and provide structured feedback to promote reflection and improvement.

Case Studies and Problem-Solving

Real classroom scenarios are analyzed to help students understand how to deal with practical teaching challenges.

Lesson Planning Workshops

Practical sessions where students prepare daily and weekly lesson plans under instructor supervision.

Use of Technology in Teaching

Integrating educational software, visual aids, and interactive tools to enhance the teaching of mathematical concepts.

Reflective Practice

Students write short reflective reports after teaching sessions to analyze strengths, weaknesses, and areas for improvement.

10.Course Structure:

Week	Hours	Intended Learning Outcomes	Unit or Topic Title	Learning Method	Assessment Method
------	-------	----------------------------	---------------------	-----------------	-------------------

11.Course Assessment:					
12.Learning and Teaching Resources:					
Prescribed Textbooks (if any)			Practical Teaching by Prof. Dr. Abdulwahid Mahmood Mohammed Al-Kanaani		
Main References (Sources)			1- Zaytun, Hasan. (2006). Teaching Skills: A Vision for Implementing		

	<p>Instruction (3rd ed.). Cairo: Alam Al-Kutub.</p> <p>2- Mahmoud, Salah. (2005). Teaching and Learning Teaching Skills in the Information Age. Cairo: Alam Al-Kutub.</p> <p>3- Al-Wakeel, Helmi, & Al-Mufti, Muhammad. (2007). Foundations of Curriculum Construction and Its Organization (2nd ed.). Amman: Dar Al-Maseera for Publishing and Distribution.</p> <p>4- Abadi, Jawad, et al. (2010). Practical Education Guide. Palestine: Ministry of Education and Higher Education.</p> <p>5- Al-Husseini, Abdul Rahman Muhammad. (2009). Administrative Patterns of Teachers in Leading the Classroom. Saudi Arabia: Ministry of Education.</p> <p>6- Atiyah, Mohsen Ali, & Al-Hashimi, Abdul Rahman. (2008). Practical Education and Its Applications in Preparing the Teacher of the Future. Amman, Jordan: Dar Al-Manahij for Publishing and Distribution.</p> <p>7- Al-Hilya, Muhammad Mahmoud. (2002). Design and Production of Educational Learning Media (2nd ed.). Amman: Dar Al-Maseera for Publishing, Distribution and</p>
--	---

	<p>Printing.</p> <p>8- Zagazig University, Faculty of Science. (2011). Professional Ethics Charter. Egypt.</p> <p>9- Abu Tubaykh, Hisham Naeem. (2008). The Extent to Which Principals of Lower Basic Schools Adhere to the Ethics of the Teaching Profession in Gaza from the Teachers' Perspective. Published Master's Thesis, Faculty of Education, Department of Foundations of Education, Palestine.</p>
Supporting Books and References (Scientific Journals, Reports, etc.)	
Electronic References and Internet Websites	