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

Academic Program and Course Description Guide

2024

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

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

Academic Program Description Form

University Name: Wasit University

Faculty/Institute: COLLEGE OF EDUCATION FOR PURE SCIENCES

Scientific Department: . MATHEMATICS DEPARTMENT

Academic or Professional Program Name: Bachelor degree in Mathematical science .

Final Certificate Name: Educational Bachelor in Mathematical Science

Academic System:

Description Preparation Date: 1/9/2024

File Completion Date:

Signature:

Head of Department Name:

Dr. Aqeel Jassim Noor

Date: 1/9/2024

Signature:

Scientific Associate Name:

Ass. Prof. Dr, Mahdi alwan Al-Quraishi

Date: 10/9/2024

Assist Prof. Dr.Mahdi Alwan Al-Quraishi
Asst Dean for Academic Affairs
& Graduate Studies

The file is checked by: Dr. Saja Hussain Dilfy

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 10/9/2024

Signature:

10/9

Approval of the Dean

Prof.
Dr.Ali H. Shuaa Al-Taie
Dean of Education College
for Pure Science

1

1. Program Vision

The Mathematics Department aspires to leadership and excellence in various fields of mathematics, aiming to achieve quality standards and programmatic accreditation that distinguish it academically and scientifically at the local, Arab, regional, and global levels. It seeks to elevate the performance level across various fields of mathematics to rank among the top educational departments in Iraq in scientific analysis. Additionally, it is imperative to keep pace with the advancements in higher education by providing the best services and facilities for academic staff, offering training and development opportunities for technicians and administrators, and involving students in activities that enhance their skills, fostering creativity and innovation.

2. Program Mission

The Mathematics Department aims to prepare individuals to become educators and mentors equipped with theoretical and applied knowledge in various fields of mathematics, possessing critical thinking skills and scientific research abilities in different branches of mathematics to ensure sustainable human development in accordance with the requirements of the era.

The department seeks to produce graduates with logical scientific thinking and scientific research skills in various branches of mathematics. Additionally, it strives to provide nationally-supported outputs with sciences and knowledge contributing to the development of our beloved country. This is achieved through offering the best modern scientific techniques for educational services to students at the university and higher education levels, and working on developing skills that enable them to integrate into all fields quickly. Moreover,

the department aims to enhance the level of educational and administrative processes by providing the best performance, speed, and accuracy in achievement. It supports scientific research activities and cognitive interaction to maintain continuous communication with scientific and cultural developments worldwide, meeting the evolving needs of the community to achieve comprehensive human development.

3. Program Objectives

1. Preparing teaching staff to support middle, secondary, and preparatory schools, equipped with the necessary teaching skills for mathematics through departmental scientific programs and activities.
2. Training academic personnel in the field of postgraduate studies, specifically Master's degrees in various branches of mathematics, to meet the requirements of the job market and support the educational and pedagogical process in our beloved Iraq.
3. Preparing qualified students to teach students in middle and preparatory schools.
4. Equipping students with pedagogical methods specialized in teaching.
5. Ensuring that graduating students are proficient in the fundamental concepts of mathematics.
6. Ensuring that students are qualified to pursue higher studies to supply universities and institutes with teaching staff.
7. Activating mechanisms for mutual cooperation and openness to various local, regional, and international universities and educational

institutions in a manner that encompasses all components of the educational system.

4. Program Accreditation

No

5. Other external influences

Is there a sponsor for the program?

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	38	168	%100	Specialized+optinal
College Requirements	21	60	%35.8	Specialized
Department Requirements	17	101	%61.3	Specialized+optinal
Summer Training	1	3	%1.8	Specialized
Other	1	2	%1.1	Specialized

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours		
			Theoretical	Practical	Tutorial
first stage		Mathematical Foundations	3		2
first stage		Calculus	2		2
first stage		Linear Algebra	2		2
first stage		Introduction to Computer Science		2	
first stage		Theoretical Physics	2		
first stage		Educational Psychology	2		
first stage		Human Rights and Democracy	1		
first stage		Arabic Language	2		
first stage		Foundations of Education	2		
first stage		English Language	1		
Second stage		Advanced Calculus	3		2
Second stage		Ordinary Differential Equations	2		2
Second stage		Abstract Algebra	2		1
Second stage		Systems of Axioms and Geometry	2		1
Second stage		Curriculum and Textbook	2		
Second stage		Advanced Computer Science		2	
Second stage		Developmental Psychology	2		
Second stage		Educational Management	2		
Second stage		English Language	1		
Second stage		Arabic Language	1		
Second stage		Crimes of the Ba'ath Party	1		
Third stage		Mathematical Analysis	2		2
Third stage		Statistics and Probability	2		2
Third stage		Partial Differential Equations	2		1
Third stage		Ring Theory	2		2
Third stage		Numerical Analysis	2	2	
Third stage		Curriculum and Teaching Methods	3		
Third stage		Guidance and Mental Health	2		
Fourth stage		General Topology	2		2
Fourth stage		Complex Analysis	2		2
Fourth stage		Mathematical Statistics	2		2

Fourth stage		Graduation Project			**2**
Fourth stage		Fuzzy Mathematics	**2**		**2**
Fourth stage		Applied Mathematics	**2**		**2**
Fourth stage		Measurement and Evaluation	**2**		
Fourth stage		Observation and Application	**1**	**2**	

8. Expected learning outcomes of the program

Knowledge	
A1: Technical knowledge in the field of mathematics sciences. A2: Understanding computer programs and practical applications related to mathematical applications. A3: Teamwork and communication skills. A4: Equipping students with teaching skills, educational guidance, and classroom management.	A1: Providing students with a deep understanding in various fields of mathematics, both theoretical and applied, such as calculus, matrices, differential equations, numerical analysis, topology, and others. A2: Equipping students with a comprehensive understanding of computer programs used in mathematics, such as MATLAB, Mathematica, CAP, and Maple. A3: Developing students' teamwork and collaboration skills through forming groups to participate in solving assignments given by instructors. A4: Supplying students with necessary information about teaching strategies, methods, and techniques, and imparting teaching skills such as planning, execution, evaluation, and time management.
Skills	
B1: Developing problem-solving skills in mathematics. B2: Enhancing the mathematical skills possessed by the student. B3: Mastering modern teaching techniques.	B1: It includes the ability of students to solve mathematical problems and explore new ideas and modern methods for solving mathematical problems. B2: We aim to develop students' cognitive abilities by offering diverse subjects within the mathematics department and by linking mathematical concepts with other disciplines such as engineering, medicine, finance, and others. B3: Modern teaching techniques encompass a variety of strategies and technologies aimed at enhancing the learning experience and promoting student engagement.
Ethics	

J1: Adherence to professional ethics. J2: Commitment to electronic values. J3: Integrity and ethics. J4: Knowledge and learning	J1: Students are encouraged to understand and apply professional ethical values in the field of information technology and computer science, such as honesty, respect, responsibility, privacy protection, and security. J2: Students should refrain from spying on others, maintain confidentiality of information, and refrain from harming others by spreading harmful viruses. J3: The program emphasizes the promotion of ethical values and integrity in the field of computer science, teaching students the importance of ethical rules and proper conduct in the field of technology. J4: The program enhances the value of knowledge and learning by providing an educational environment that encourages the acquisition of knowledge and the development of skills in various areas of computer science.

9. Teaching and Learning Strategies

The strategies and teaching methods adopted in implementing the program include:

1. Lecture method supported by the use of technology in learning.
2. Discussion method.
3. Active learning, including problem-based learning.
4. Cooperative learning.

10. Evaluation methods

1. Monthly exams.
2. Daily quizzes.

3. Group projects.
4. Reports.
5. Progress report cards

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof. Dr. Ali Hussein Shuaa	mathematics	Applied mathematics			yes	
Prof. Dr. Ali Khalaf Hussain	Mathematics				yes	
Prof. Dr. Basim Nasih Aboud	Mathematics	Numerical Analysis			yes	
Assoc. Prof. Dr. Zaher Walee Freih	Mathematics	Algebraic Topology			yes	
Assoc. Prof. Dr. Nasreen Najm Abd	Mathematics	Applied Mathematics			yes	
Assoc. Prof. Dr. Ahmed Shahab Hamad	Mathematics	Numerical Analysis			yes	
Assoc. Prof. Haitham Aboud Shahad	Mathematics	Abstract Algebra			yes	
Lect. Dr. Nada Mareeh Azeeb	Mathematics	Functional Analysis			yes	
Lect. Dr. Aqeel Jasim Noor	Mathematics	Pure Mathematics			yes	
Lect. Dr. Saad Mahdi Jaber	Mathematics	General Topology			yes	
Lect. Walid Mahmoud Waleed	Mathematics	Mathematics			yes	

Lect. Saad Abdulhasan Younis	Mathematics	Mathematics			yes	
Lect. Aqeel Rahim Husun	Accounting	Financial Accounting			yes	
Lect. Thaer Najm Aboud	Accounting	Financial Accounting			yes	
Asst. Lect. Saad Ubaid Jameel	Statistics	Applied Statistics			yes	
Asst. Lect. Musar Faseeh Jabbar	Mathematics	Integral Equations			yes	
Asst. Lect. Ali Khalifa Haji	Mathematics	Mathematics			yes	
Asst. Lect. Ghofran Muna Ajeimi	Mathematics	Mathematics			yes	
Asst. Lect. Zainab Jaafar Abdulrazzaq	Mathematics	Mathematics			yes	
Asst. Lect. Nasreen Nasser Khalf	Educational and Psychological Sciences	General Psychology			yes	
Asst. Lect. Nora Kareem Saleh	Educational and Psychological Sciences	General Teaching Methods			yes	
Asst. Lect. Kawthar Qasim Sahan	Arabic Language	Arabic Language			yes	

Professional Development

Mentoring new faculty members

1- Development and Training Programs

2- Guidance and Mentoring Programs

3- Participation in Professional Learning Communities

4- Academic Counseling

Professional development of faculty members

1- Needs Analysis

2- Implementation of Training Programs and Workshops

3- Application of Modern Teaching Strategies

4- Monitoring and Performance Evaluation

5- Feedback Evaluation and Support

12. Acceptance Criterion

1. **central admission**
2. **Parallel Admission**
3. **Admission for Top Teachers**

13. The most important sources of information about the program

- Sectorial Committee
- Ministerial Committees for Curriculum Development
- University and College Website
- Ministry of Higher Education and Scientific Research Website

14. Program Development Plan

Applying accreditation standards for educational colleges.

Program Skills Outline															
				Required program Learning outcomes											
Year/ Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First	101 MFM	Mathematical Foundations	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	102 MC	Calculus	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	103 MLA	Linear Algebra	Basic	√	√	√	√	√	√	√	√	√	√	√	√
	106 MCO	Introduction to Computer Science	Basic					√	√	√	√	√	√	√	√
	104 MPH	Theoretical Physics	Basic					√	√	√	√	√	√	√	√
	109 MEP	Educational Psychology	Basic									√	√	√	√
	107 MHR	Human Rights and Democracy	Basic									√	√	√	√
	108 MAR	Arabic Language	Basic									√	√	√	√
	105 MFE	Foundations of Education	Basic									√	√	√	√
	112MEL	English Language	Basic									√	√	√	√
	213MAC	Advanced Calculus	Basic	√	√	√	√	√	√	√	√	√	√	√	√

Second	**216MODE**	Ordinary Differential Equations	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	214MGT	Abstract Algebra	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	215MSAG	Systems of Axioms and Geometry	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	217MFSR	Curriculum and Textbook	**Basic**					√	√	√	√	√	√	√	√
	218MCO	Advanced Computer Science	**Basic**					√	√	√	√	√	√	√	√
	221MDP	Developmental Psychology	**Basic**									√	√	√	√
	219MEA	Educational Management	**Basic**									√	√	√	√
	222MEL	English Language	**Basic**									√	√	√	√
	223MAL	Arabic Language	**Basic**									√	√	√	√
	220MCBI	Crimes of the Ba'ath Party	**Basic**									√	√	√	√
Third	**323MMA**	Mathematical Analysis	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	325MPS	Statistics and Probability	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	326MPDE	Partial Differential Equations	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

	327MRG	Ring Theory	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	324MNA	Numerical Analysis	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	329MCT	Curriculum and Teaching Methods	**Basic**					√	√	√	√	√	√	√	√
	328MPC	Guidance and Mental Health	**Basic**									√	√	√	√
Fourth	**431MGT**	General Topology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	432MCA	Complex Analysis	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	433MMS	Mathematical Statistics	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	435MRP	Graduation Project	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	438MFM	Fuzzy Mathematics	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	437MAM	Applied Mathematics	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√
	434MME	Measurement and Evaluation	**Optional**									√	√	√	√
	436MPE	Observation and Application	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

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

1. اسم المقرر
Foundation of Mathematics
2. رمز المقرر
3. الفصل / السنة
annual
4. تاريخ إعداد هذا الوصف
2024/9/1
5. أشكال الحضور المتاحة
Presence
6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)
120
7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)
الاسم: Dr .Daher Waly Freh الآيميل : heralbaydli@uowasit.edu.iq
8. اهداف المقرر

اهداف المادة الدر	**Definition of** Foundation of Mathematics **and its source** **Methods to understand logic mathematics and set theory and relations and function .**

9. استراتيجيات التعليم والتعلم	
الاستراتيج	● Explain the Foundation of Mathematics & short questions ● Making the tests monthly ● Solving the problem & guidance the students

10. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	2+2	inition & example	**Logic And**	theorey	question
2	=	Important proposition	**Proof**	=	=
3	=	Conditionals andm		=	=
4	=	Biconditionals	=	==	=
5	=	ntifiers	gic And Proof	=	=
6	=	Type1: Direct Proof	gic And Proof	=	=
7	=	Type2:Proof By Contradiction Type3:Two- Direction Proof Type4:Proof By Contrapositive	gic And Proof		
8	=	Type3: Proof involve Quantifires	gic And Proof	=	=
9	=	Type4:Proof By Cases	gic And Proof	=	=
10	=	Basic notation of set theory example	gic And Proof	=	=

11	=	Set operation	gic And Proof	=	
		Extended Set operation			=
12	=	Venn diagram	gic And Proof	=	=
		Cartesian products and relation	gic And Proof		
13	=	Equivalence relation	Relation	=	=
	=	Equivalence classes Upper and lower	Relation	=	=
14	=	bounds	Relation	=	=
15	=	Relation	Relation	=	=
16	=	Functions and relations	Relation	=	=
17	=	Constructions of function Surjective and	=	=	=
18	=	injective function	=	=	
19	=	Induced set function	=		=
	=		Function	=	
20	=		Function		=
	=		Function	=	
21			Function		
			Function		
			=		

11. تقييم المقرر
The degree is (100)
12. مصادر التعلم والتدريس

الكتب المقررة المطلوبة (المنهجية أن وجدت)	Introduction of foundation mathematics
المراجع الرئيسة (المصادر)	Introduction to set theory
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير....)	مقدمة في اسس الرياضيات
المراجع الإلكترونية ، مواقع الانترنيت	

Course name: .1	
Calculus	
Course code: .2	
Semester/year: .3	
Annual system / first stage	
the date this description was prepared: .4	
2024/9/1	
Available forms of attendance: .5	
Actual mandatory attendance	
Number of study hours (total)/number of units (total) .6	
150 hour	
Name of the course administrator (if more than one name is mentioned) .7	
Assist Prof Dr Nisreen Najm Alokbi	
Course objectives .8	
Make the student able to: 1. Qualifying and training the student and teaching him regular differentiation and integration 2. Qualifying and training the student and teaching him the importance of mathematical applications of differentiation and integration 3. Preparing and teaching the student to benefit from calculus in the academic subjects of the advanced stages, including advanced calculus in the second stage and solving ordinary and differential equations in the second and third stages. 4. Helping the student in linking calculus to other topics in other stages	
Teaching and learning strategies .9	
● Explanation and clarification through lectures ● Self-education through homework ● Graduation projects ● Solving difficult problems using scientific material ● Use of e-learning	**The strategy**

Course structure.10

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	week

Daily and monthly exams and group discussions	Explanation + discussion	Functions and their Algebra	Recognize a function as being linear/quadratic and learning how to do algebra on functions	15	1-3
Daily and monthly exams and group discussions	Explanation + discussion	Limits and Continuity	Determine the existence of, estimate numerically and graphically, and find algebraically the limits of functions Recognize and determine infinite limits and limits at infinity and interpret with respect to asymptotic behavior. Determine continuity at a point or on intervals and distinguish between the types of discontinuities at a point.	15	4-6

Daily and monthly exams and group discussions	Explanation + discussion	Differentiation	Determine the derivative of a function using the limit definition. Interpret the derivative as the slope of a tangent line to a graph, the slope of a graph at a point, and the rate of change of a dependent variable with respect to an independent variable Determine the derivative and higher derivatives of a function explicitly using differentiation formulas. Determine derivatives implicitly.	25	-11
Daily and monthly exams and group discussions	Explanation + discussion	Applications of Differentiations	Solve related rates problems. Determine absolute extrema for a continuous function on a closed interval. Use these and other appropriate techniques to solve optimization problems.	15	-14

			Use the first and second derivatives to analyze and sketch the graph of a function, including asymptotes, intervals on which the graph is increasing, decreasing, concave up, or concave down, and any local extrema and inflection points.		
Daily and monthly exams and group discussions	Explanation + discussion	Trigonometric and Hyper trigonometric Functions	Apply the following competencies to a wide variety of functions, including trigonometric.	15	15-17
Daily and monthly exams and group discussions	Explanation + discussion	Inverse Trigonometric Functions, Exponential and Logarithmic Functions	Apply the following competencies to a wide variety of functions, including inverse trigonometric, exponential, and logarithmic.	15	18-20
Daily and monthly exams and group discussions	Explanation + discussion	Integrations	Determine antiderivatives and indefinite integrals and integrate by substitution. Use the Fundamental	20	20-23

			Theorem of Calculus to evaluate definite integrals.		
Daily and monthly exams and group discussions	Explanation + discussion	Methods of Integrations	Apply different ways of Integration.	15	24-26
Daily and monthly exams and group discussions	Explanation + discussion	Applications of Integrations	Use definite integrals to find areas of planar regions.	15	27-30

Course evaluation.11

- Daily and monthly tests and use of brainstorm
- Open group discussion method

learning and teaching resources.12

Calculus, International edition (Thomas) part 1.

Calculus, (Anton, Bivens, Davis), 10th Edition.

Calculus and analytic geometry by (George B- Thomas).

Calculus by (Ross L.Finney, George B- Thomas,Jr.) part 1.

1. Course Name: Linear algebra

2. Course Code:

3. Semester / Year: 2023/2024

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms: Self attendance

6. Number of Credit Hours (Total) / Number of Units (Total) : 120 hours per year and 6 units per week

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

Name: Dr.Aqeel Jassim Noor
Email: aqeel.noor@uowasit.edu.iq

8. Course Objectives

Course Objectives	• **The students acquire special skills in solving proble related to matrices and linear systems** • **The students acquire skills in solving problems rela to vector space** **The students acquire general skills in teach mathematics**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	**Mathematical Induction**	**Mathematical Induction**	Using t pen a board a data sho	Exams and quick exams a assignments
2	4	**Matrices** Algebraic Operations and	**Matrices**		
3	4				

4	2 2	Some Properties on Matrices The Matrices which has Inverse Examples and Application.			
5	2 2	**The Rank of Matrices**	**e Rank of Matrices**		
6	4	The Definition of the			
7	4	Rank of Matrix Some Fundamental Theorems about the Rank of Matrix Examples and Application.			
8	4	**Determinant**	**Determinant**		
9	4	Definition of the			
10	4	Determinant of the Matrix and Some			
11	4	Fundamental			
12	4	Theorems about the Determinants			
13	4	Examples and Application.			
14	4	**Linear Equations**	**Linear Equations**		
15	4	Introduction to			
16	4	Linear Equations Systems of Linear Equations			
17	8	Solutions of the			
19	4	Systems of Linear Equations			
20	4	Examples and			
21	4	Application.			
22	4	**Vector Space**	**Vector Space**		
23	4	Define the Vectors			
24	4	on the Field Addition of the Vectors			
25	4	Numerical Product for the Vectors un directional Product Subvetors Space			
26	4	Linear Connection Linear independent			
27	4	Basis and Distance Intersection and Addition for Vectors Spaces			
28	2 2	Inner Product and Egledean's Space for Vectors Space			

29 30 31 32	2 2 2 2 2 2 2 2	Examples and Application. Linear Mapping and Linear Transformation The Matrix as Linear Representation The Kernel of the Linear Mapping The Image of the Linear Mapping Examples and Application. **eigen Value and Eigen Vectors** Find the Roots of Eigen Polynomials, Eigen Vectors and Similar Matrices Partial Matrix Theorem Examples a Applicatio	**Linear Mapping** **eigen Value and Eigen Vectors**		

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Introductory for linear algebra with applications
Recommended books and references (scientific journals, reports…)	First course in Matrices
Electronic References, Websites	https://matrixcalc.org ps://www.symbolab.com/solver/system-of-equations-calculator

1. Course Name:

General physics

2. Course Code:

3. Semester / Year:2024- 2023

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms:

My attendance is mandatory

6. Number of Credit Hours (Total) / Number of Units (2)

60 hours 2 hours

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

PHD. Lecturer
ALI ABED JABER email :alia624@uowasit.edu.iq

8. Course Objectives

Course Objectives	Students are familiarized with the general and specific principles of classical mechanics in motion and its types, along with the interpretation of the laws related to it. • Providing students with the scientific skills to deal with mechanical problems and how to benefit from and deal with them in different situations. • Explain and illustrate real-life examples of classical mechanics. • Urging students to possess scientific information related to mechanics and apply it now and in the future when faced with any problem. • Urging students to acquire various modern teaching skills in explaining mechanical topics and thus acquiring Experience in dealing with various physics topics

9. Teaching and Learning Strategies

Strategy	• Giving scientific lectures on understanding classical mechanics • Oral and short exams through discussion examples related to the topic • Written exams to refine what students have learned. • Classical mechanics describes the motion of very small (microscopic) bodies from the beginning

	Projectiles include machines and astronomical objects such as planets, galaxies, spaceships, and stars. • Study Newton's laws of motion • The study of the behavior of most “natural” things.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Gaining knowledge in understanding the meaning of movement in one dimension and how to apply it to movement in two or three dimensions	Measurements and movement in one dimension	My presence	General questions, discussion, and problem solving
2	3	Gaining knowledge in understanding the meaning of movement in one dimension and how to apply it to movement in two or three dimensions	Movement is in one dimension	My presence	General questions and discussion or exam
3	3	Understand the meaning of vector and scalar quantities	Vector and scalar quantities	My presence	General questions, discussion, and problem solving
4	3	Understand numerical and cross multiplication	Numerical and vector multiplication	My presence	oral test
5	3	Understanding motion in two dimensions	Motion in two dimensions and derivation of its laws	My presence	General questions and problem solving
6	3	Movement in two dimensions Shells	Movement in two dimensions	My presence	solving equations

7	3	A monthly written exam	evaluation	My presence	Monthly in all previous lessons
8	3	Definition of Newton's laws of motion and when to use them in different situations	Definition and derivation of Newton's laws	My presence	oral test
9	3	Dealing with the laws of motion in the presence of friction	Friction and applied frictional forces	My presence	oral test
10	3	Definition of regular and irregular circular motion and derivation of its laws	Circular motion	My presence	Solve related issues
11	3	Understanding gravity	Circular motion	My presence	Complete the solution of related issues
12	3	Understanding work and energy and derivation of laws	Work and energy	My presence	Solve related issues
13	3	Understanding the laws Preservation	Law of conservation of energy	My presence	Solve related issues
14	3	Understanding linear momentum and linear momentum-impulse theory	Linear momentum, thrust, and collisions	My presence	Solve related issues
15	3	Understanding linear momentum and the theory of linear momentum-thrust and collisions	Linear momentum, thrust, and collisions	My presence	Complete the topic and solve the problems
16	3	A monthly written exam	evaluation	My presence	A monthly exam in all previous subjects

17	3	What is rotational motion, its laws, and its connection to translational motion	Rotary movement	My presence	Solve related issues
18	3	Understanding rotational kinetic energy and moment of inertia	Rotary movement	My presence	Solve related issues
19	3	Torque and rigid body	Rotary movement	My presence	Solve related issues
20	3	A monthly written exam	evaluation	My presence	A monthly exam in all previous subjects

11. Course Evaluation

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

12. Learning and Teaching Resources

1 - Classical Mechanics for Physics Graduate Students , ERNESTO CORINALDESI , 1998 . 2 - Classical Mechanics , R. DOUGLAS and GOREGE , 2006 .	Required prescribed books (Methodology, if any)
1 - Physics for Scientists and Engineers with modern physics , SERWAY and JEWETT , 9 Edition , 2014 . 2- University Physics by Francis W. Sears, Mark W. Zemanseky and Hugh D. Young, 1982. 3- Introduction to Physics by Jojn D.Cutnell, Kenneth W.Johnson 8th Ed.,2010	Main references (sources)
1- Classical Mechanics by Herbert Goldstein, 2002. 2- Classical Mechanics by Michael Cohen, 2014. 3- Classical Mechanics by Mahmoud Hamza Dahi, 2020.	Recommended supporting books and references (scientific journals, reports....
1- Educational Physics Network 2- Al-Farid website in physics 3- NASA website in Arabic for physics	electronic references, Internet sites

1. Course Name:
Human Rights
2. Course Code:
3. Semester / Year:
2025/2024
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
90hours
7. Course administrator's name (mention all, if more than one name)
Name: Hamid Thabat Ajab Email: Hamed.ajaab1990@gmail.com
8. Course Objectives

Course Objectives Cognitive objectives 1–The student will be able to define human rights, define their goals, and human rights in ancient civilizations in particular (Mesopotamian civilization) 2- The student explained the psychological and philosophical foundations, then his definition of human rights and the ancient, medieval, and modern ages. 3– Introducing the student to the close relationship between guidance and the school, how he	• ..... • ..... • .....

is the guiding teacher, and what his characteristics are The student must explain the need for guidance programs in the school 4– Learn about human rights at the level of non-governmental organizations and civil society institutions, the International Committee of the Red Cross	

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Theoretical tests and questions	A general introduction to human rights	Explanation and discussion	General questions and discussion
2	3		Human rights in ancient civilizations		
3	3		Human rights in Greek and Roman civilizations		

4	3		Human rights in the old sieges of Iraq Human rights in heavenly religions		
5	3		Human rights resources		
6	3		National sources for human rights		
7	3		International human rights sources		
8	3		Constitution of the Republic of Iraq of 2005		
9	3		The role of regional organizations in protecting human rights		
10	3		Human rights guarantees at the international level		

11	3		International treaties and their protection of human rights		
12	3		Technological progress and its impact on rights		
13	3		Protection of intellectual rights		
14	3		Types of intellectual rights		
15	3		The concept of democracy		
16	3		Forms of democracy		
17	3		Direct democracy		
18	3		semi-direct democracy		
19	3		Representative democracy		
			Parliament		
			The concept of election		

20	3				
21	3		The electorate		
22	3		Organizing the election process		
23	3		Organizing the election process.		
24	3		Determine electoral districts.		
25	3		Electoral lists.		
26	3		Candidates.		
27	3		Campaign.		
28	3		Vote.		
29	3		Election systems.		
30	3		Direct election and indirect election. Individual election and list election.		

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	Dr.. Maher Saleh Allawi Al-Jubouri Dr.. Riad Aziz Hadi Dr.. Ali Abdul Razzaq Muhammad Dr.. Hassan Muhammad Shafiq Dr.. Raad Naji Al-Jeddah
Electronic References, Websites	

Arabic language :Course name .1	
:Course code .2	
Semester/year: 2024/2025 .3	
:Description preparation date .4	
2024/9/1	
Available attendance formats: in-person lectures .5	
Number of hours (1) / Number of units (1) .6	
: Instructor 's name .7	
Noha jaffar ofi .Name: Dr njaffar@uowasit.edu.iq :Email	
8. Course objectives	
Course objectives	1. Developing the student's skill to understa the rules of the Arabic language , including parts speech, verb tenses , punctuation marks, knowledge of common linguistic err. 2. Developing students' linguistic and liter abi. 3. Enhancing students' critical thinking sk through analy .Literary text 4. language Arabic Building confidence in us vocabul
9. Teaching and learning strategies	
Strategy 1	:Directed towards the teacher Clear explanations: Teachers will provide clear and concise explanations • of grammar concepts, using examples and diagrams . To promote . Understanding • Structured presentations: Each session will follow a well-organized format, where the grammar rule will be introduced , explanations and examples provided, and then move on to student-oriented activities. Guided practice: Do exercises so that all students understand grammar and • spelling rules
Strategy 2	:Learner oriented • Interactive activities: It includes a variety of interactive ,activities to promote active learning, including group discussions .short tests, and the use of illustrative media • Problem-solving exercises: Students will be provided with

problem-solving exercises that challenge them to analyze and apply the learned grammatical concepts in real-world scenarios. • Cooperative learning: Developing cooperation and communication skills by assigning students assignments that involve group participation. • Technology Integration: Technology can be exploited through online grammar exercises, interactive whiteboards for collaborative learning, and multimedia resources to enhance participation.	
:Independent education • Arabic grammar book • Encouraging self-study : using language dictionaries and the Internet . • Optional activities: Students will have opportunities to participate in optional activities such as presentations, discussions, or creative writing assignments, which will enable them to display their language skills in a more creative way.	Strategy 3

10. Course structure

Evaluation method	Teaching method	Topic or chapter	Required learning outcomes	hours	the week
a test	In-person lecture	Sections of speech	Arabic grammar	1	1
a test	In-person lecture	The initial hamza	Dictation	1	2
a test	In-person lecture	Medium hamza	Dictation	1	3
a test	In-person lecture	Extreme hamza	Dictation	1	4
a test	In-person lecture	Common linguistic erro	Construction	1	5
a test	In-person lecture	Memorize ten verses fro Al-Jawahiri's poem	literature	1	6
a test	In-person lecture	Double	Arabic grammar	1	7
a test	In-person lecture	Sound masculine plura	Arabic grammar	1	8

a test	In-person lecture	Sound feminine plura	Arabic grammar	1	9
a test	In-person lecture	The six names	Arabic grammar	1	10
a test	In-person lecture	Al-Nawasikh/Inna and l sisters	Arabic grammar	1	11
a test	In-person lecture	Al-Nawasikh/Kan and sisters	Arabic grammar	1	12
a test	In-person lecture	The subject and predicate	Arabic grammar	1	13
a test	In-person lecture	Knowledge/science	Arabic grammar	1	14
a test	In-person lecture	:Known as	Arabic grammar	1	15
a test	In-person lecture	Identifier in addition	Arabic grammar	1	16
a test	In-person lecture	Pronouns	Arabic grammar	1	17
a test	In-person lecture	Relative nouns	Arabic grammar	1	18
a test	In-person lecture	The names of the signa	Arabic grammar	1	19
a test	In-person lecture	The solar and lunar	Arabic grammar	1	20
a test	In-person lecture	punctuation marks	Dictation	1	21
a test	In-person lecture	Parsing/nouns and Parsed verbs	Arabic grammar	1	22
a test	In-person lecture	Construction / nouns a verbs Built	Arabic grammar	1	23
a test	In-person lecture	Analysis of a literary te	literature	1	24

a test	In-person lecture	The origins of the Arab language	the language	1	25
a test	In-person lecture	Masculinity feminization	Arabic grammar	1	26
a test	In-person lecture	Literary eras	literature	1	27
a test	In-person lecture	Examples of names of poets and their poems	literature	1	28
a test	In-person lecture	Linguistic dictionary	the language	1	29
a test	In-person lecture	General Review	Arabic	1	30

11. Evaluation

- Periodic tests: Repeated tests will enhance the student's understanding of the material to provide him with feedback.
- Exams: Monthly and final exams to know and measure the student's understanding of the subject that have been studied.
- Written assignments: The written assignments will assess students' ability to use grammar accurately and effectively through their written communication.
- Class Participation: By encouraging active participation in class discussions, exercises, and group work, this will contribute to the overall assessment.

12. Educational references

Arabic language for non-specializations, written a group of Arabic language professors	Required textbook references (textbooks, available)
Explanation of Ibn Aqeel Alfiyya Ibn Malik	Main references
What is written in the field of the Arabic langu in terms of grammar Grammatical, spelling, linguistic errors, analysis .literary texts and linguistic dictionaries	Recommended books and references)scientific journals, reports
	Electronic references, websites

1. Course Name:	
Foundations of education	
2. Course Code:	
3. Semester / Year:	
4. Description Preparation Date:	
2024/9/1	
5. Available Attendance Forms:	
My attendance is mandatory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
40 hours 2 hours	
7. Course administrator's name (mention all, if more than one name)	
Assistant lecturer ALAA SABAH MOHAMMED email :alaa.mohammed@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	**Increasing the student's understanding the educational and social reality throughout the ages, realizing the educational process at its utmost necessity, and understanding educationa theories on various peoples, ancient and modern. Interpreting the educational process fron a historical and philosophical point of view Shedding light on upbringing and education, Explaining the importance of the role of social educational institutions Helping students to train and feel the importance of the educational process,**

	It is also a science that describes and explains the impact of educational systems on historical reality, past and present **Identifying the educational reality reveal by the philosophical schools of educatio** • **Determine the goals community education a apply educational concepts.**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
8-1	2	Chapter one	The meaning and goals of education Its theories and fields The historical basi of education Old education Chinese education Unian education Medieval educatio	My presence	Giving daily Assignments and checking dai attendance
16-9	2	Chapter two	Arab education before Islam and after Islam Modern education The relationship between education and society The relationship between the	My presence	Giving daily Assignments and checking dai attendance Giving daily Assignments and

22-17	2	Chapter thre	individual and the environment Congenital education Family education National Educatio Health education	My presence	checking dai attendance Giving daily Assignments and
27-23	2	Chapter four	Education and its impact on economi development Education and method in researc National and socia foundations Education in a soc perspective	My presence	checking dai attendance Giving daily Assignments and
30-28	2	Chapter five	Comprehensive school Systematic education Teaching methods in Islamic educatio Islamic educationa thought Education rights i the views of the House of Prophethood Teacher rights in Islam Ibn Khaldun Ibn Sina Learner rights Educational thoug The social and economic basis The most importa functions of the school The scientific basi of education	My preser	checking dai attendance

			The importance historical research educational fields		

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

12. Learning and Teaching Resources	
Required textbooks (curricular books any)	
Main references (sources)	Foundations of education by Assistant Professor Ali Abdel Karim
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. Course Name:

Educational and developmental psychology

2. Course Code:

3. Semester / Year:

2025/2/1

4. Description Preparation Date:

5. Available Attendance Forms:

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

2 hours/4 units

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

Noora Karim Saleh

nsalih@uowasit.edu.iq

8. Course Objectives

Course Objectives	

9. Teaching and Learning Strategies

Strategy	Lecture and discussion Dialogue and interrogation

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3	2	Knowledge	Educational Psychology Definition and Objectives Educational, Teaching and Behavioral Objectives Learning and Learning Factors	Lecture and discussion	Today's oral and written exam
4 5 6		Knowledge	Thinking Perception Intelligence	Lecture and discussion	Today's oral and written exam
7 8 9		Knowledge	Attention Intelligence Motivation	Lecture and discussion	Today's oral and written exam
10 11		Knowledge	Memory and forgetting Schools of psychology	Lecture and discussion	Today's oral and written exam
12 13 14		Knowledge	Growth and Maturity Adolescence Adolescent Physical Development	Lecture and discussion	Today's oral and written exam
15 16 17		Knowledge	Cognitive development of adolescents Social and emotional development of adolescents Moral development of adolescents	Lecture and discussion	Today's oral and written exam
18 19		Knowledge	Adolescents and Society Parenting Styles	Lecture and discussion	Today's oral and written exam
20 21		Knowledge	Teenage Problems Trends	Lecture and discussion	Today's oral and written exam

22 23		Knowledge	Concept of ethics Concept of profession	Lecture and discussion	Today's oral and written exam
24 25		Knowledge	**concept of professional ethics** **Teacher ethics**	Lecture and discussion	Today's oral and written exam
26 27	2	Knowledge	School Principal Ethics Leadership	Lecture and discussion	Today's oral and written exam
28	2	Knowledge	Leadership Theories	Lecture and discussion	Today's oral and written exam
29 30	2	Knowledge	Career Compatibility Job Satisfaction	Lecture and discussion	Today's oral and written exam
31	2	Knowledge	The teacher in the era of globalization	Lecture and discussion	Today's oral and written exam
	2				

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Educational Psychology and Developmental Psychology Book
Main references (sources)	Educational Psychology: Dr. Abdul Aziz Nashawati, Dar Al Furqan. Educational Psychology: Raouf Mahmoud Al Qaisi, Amman, Jordan / Dar Dijlah. Childhood and Adolescent Psychology: Amina Ali Khan Ethics of the Teaching Profession: Dr. Nafeth Suleiman Al Jaab 2018 Ethics of the Teaching Profession: Dr. Qadriya Muhammad Al Bishri 2011
Recommended books and references (scientific journals, reports…)	

Electronic References, Websites	

1. Course Name:
English language

2. Course Code:	

3. Semester / Year:
2025/2024
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Name: SAJJAD ABED ALI SHAREEF Email: **sashareef@uowasit.edu.iq**

8. Course Objectives	
Course Objectives	1. Enabling the student to acquire basic English language skills 2. Enable the student to employ the English language for the purposes of communication, academic study and research. 3. Enable the student to acquire the language proficiency necessary for the current academic and future professional aspects 4. Enabling the student to benefit from foreign sources by developing his translation skill 5. Enable the student to acquire a store of necessary vocabulary and linguistic structures 6. To increase the students' background about English language 7. Enhance students' ability in listening, speaking, reading and writing 8. Make the students familiar with the English language in their study

9. Teaching and Learning Strategies	
Strategy	1- Through teaching theoretical material by the instructor 2- Making the students involved in various activities that encourage them to spea listen, read and write in English 3- Employing the videos and pictures that help students to interact in English 4- Encouraging the students to participate in the lesson by raising topics that hav contact with their lives 5- Using English short stories and jokes given in their book

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	1	Acquire social manner, like introduction and greeting	Unit one: Hello	Theoretical lectures ,	Examinations and daily activity
	1	Asking about things and numbers from one up to ten	unit 1: Hello		
	1	Know his environment as some cities, the phone numbers Know some cities	Unit 2: your world		
	1	Reading and speaking, the numbers from 11up 30, some new vocabulary (adjectives & nouns)	Unit 2: your world		
	1	information's about his identity	Unit3: All about you		
	1	short answers, asks about jobs and some jobs, making dialog, social expression (1)	Unit 3: All about you		
	1	know the basic terms about their specialist	Writing a paragraph about subject deal with their specialist		
	1	revision	Exercises and solutions (workbook)		
9-16	1	Know how to use the possessives	Unit4: family and friends	Theoretical lectures	Examinations and daily activity
	1	Noun + adjective, the family (mother, father….), describing friends Revision	Unit 4: Family and friends Exercises and solutions(workbook)		
	1	Know some nationalities and countries, the present simple	Unit 5: The way live		
	1	How to use (a, an), languages, drinks, food, sports, some adjectives and verbs,	Unit 5; The way live		
	1	Know how to arrange the times and preference	Unit 6: Every day		

	1 1	Present simple (he, she, it), adverbs of frequency, words that go together, days of week (Sunday,	Unite 6: Every day		

	1	Monday….), prepositions of time (in, on, at) Revision	Exercises and solutions (workbook)		
17-22	1 1 1 1 1	How to use pronouns and the question words This and that, adjectives, opposite adjective (old /new), places Know house parts and furniture There is and there are, prepositions (in, on, under, next to), listening and writing, directions. Learn the past tense (was/were), irregular verbs. Saying years (1999,2000….),peopl e and jobs (singer, politician ,artist)	Unit 7: My favorites Unit 7: My favorites Unit 8: Where I live Unit 8: Where I live Unit 9: Times past Unit 9: Times past	Theoretical lectures	Examinations and daily activity
23-27	1 1 1 1	Know the importance of d homework and some sport Revision Use the model verb adverb, request and off every day problem Some and any, like and would like, shopping, in	Unit 10: We had a great time Exercises and solutions Unit 11: I can do that Unit:12 Please and thank you	Theoretical lecture	Examinations and daily Activity

28-30	1 1	a restaurant Learn some new terms Present continuous, present simple and	Write a paragraph Unit 13: Here and now	Theoretical lecture	

	1 1	present continuous, colours, opposite verbs Future plans, transport, pronunciation, revision (question word, tenses Revision	Unit 14: It's times to go Exercise and solution		Examinations and daily activity

11.Course Evaluation
- The annual average is out of 40 and it is divided into - 30 marks for the semester exams (at last two test in each semester) -5 marks for participation, activities and homework

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	New Headway Pulse for Beginners, John and Liz Soars, Oxford
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

1. اسم المقرر

First Order Differential Equation

2. رمز المقرر

3. الفصل / السنة

Annual

4. تاريخ إعداد هذا الوصف

2024/9/1

5. أشكال الحضور المتاحة

Presence

6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)

80

7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)

الاسم: Dr .Basim Nasih Abood الآيميل : basim.nasih@yahoo.com

8. اهداف المقرر

اهداف المادة الدراسية	**Definition of ODE and its source** **Methods to solve first &second order** **Solving ODE by laplace transform**

9. استراتيجيات التعليم والتعلم

الاستراتيجية	• Explain the ODE with continuous &short questions • Making the tests monthly • Solving the problem &guidance the students

10. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	2+2	efinition & example	**Definition of ODE PDE**	theorey	question
2	=	=	=	=	=
3	=	Formation of ODE	Formation of ODE	=	=
4	=	Solving first order	Variable separable	==	=
5	=	=	+homo+exact+linear	=	=
6	=	=	=	=	=
7	=	olving second order	Undetermined coefficient	=	
8	=	=	Variation of parameter	=	=
9	=	=	=	=	=

10	=	High order ODE	=	=	=
11	=	D-opertor	=	Definition of D-opertor	=
12	=	=	=	Definitions& properties	=
13	=	=	=	Laplace transform	=
14	=	Inverse laplace	=	=	=
15	=	=	=	Definitions& properties	=
16	=	Solving ODE by laplace	=	=	=
17	=	=	=	=	=
18	=	=	=	=	=
19	=	Solving ODE by series	=	Theorey+examples	=
20	=	=	=	=	=
21	=	=	=	=	=

11. تقييم المقرر

The degree is(100)

12. مصادر التعلم والتدريس

الكتب المقررة المطلوبة (المنهجية أن وجدت)	Ordinary differential equation (ODE)
المراجع الرئيسة (المصادر)	Introduction to (ODE)
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير....)	المعادلات التفاضلية الاعتيادية
المراجع الإلكترونية ، مواقع الانترنيت	

1. Course Name:

Algebraic Theory

2. Course Code:

3. Semester / Year:

2025/2024

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms:

Attendance

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

3 hours / 4 units

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

Name: Dr. Haithab Abood Sahad
Email: hshahad@uowasit.edu.iq

8. Course Objectives

Course Objectives	• **Acquiring students' knowledge of basic algebraic concepts and related theories.** • **Developing students' in order to prove simple algebraic theories.**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2	3	Groups	**introducti on**	Lecture Notes	Daily quizze Assignment
3	3	Definition Example and Gene Properties of Qroups and some Remarks		You tube	Monthly exams
4	3			Lecture Notes You tube	
5	3	Center of a group. .	**Definition , Example Theorems.**		
6	3	**Definition of subgrou characterization of**			
7	3	**subgrouip and Examples**	Subgroups		

		some operations on subgroups	Definition, examples		
8	3	**Cyclic group**			
9	3		**Definition**		
10	3	**Normal Subgroup**	**,**		
	3		**Examples**		
11	3	**Algorithm of division**	**,**		
12	3		**Theorems**		
13		**Lagrange theorem** definition and examples			
	3				
14	3				
15	3				
16	3	**Z_n - Group definition and examples**	Coset of subgroups		
17	3				
18	3	**number of theory**			
19	3				
20	3	**Product of Subgroup**			
21	3				
22	3	**Some basic properties of Coset of subgroups**			
23	3		Group Homomorphism		
24	3	**The Commutator**			
25	3	**semi groups**			
26	3				
27	3	**The Conjocate of element**			
28					
		Group Homomorphism	**Definition and examples Theorems**		
		Kernel of group homomorphism **Definition, properties and Examples**			
		Isomorphic Group			
		Definition, properties and Examples			

		Fundamental Theorem in Isomorphic. **Natural mapping**			

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

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

1. Course Name:
Axioms and geometry systems
2. Course Code:
3. Semester / Year:
2025/2024
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
Came
6. Number of Credit Hours (Total) / Number of Units (Total)
(3) hours per week * 30 weeks
7. Course administrator's name (mention all, if more than one name)
Name: Email:
8. Course Objectives

Course Objectives	• . • . • .
Explain to the student the basics of engineering, engineering systems and axioms and enable the student to prove theorems properly and logically and use the data and what is required to be proven and draw and prove theorems.	

9. Teaching and Learning Strategies	
a. Knowledge an understanding	1. Enable the student to recognize the concept of axioms. 2. Help the student to recognize and understand engineering systems 3. Enable the student to identify theorems and proofs.
b. in Skill Objectives	B1. Training students on the proof of theorems B2. Enable the student to prove the results.
c. Teachin and learning methods	T1. Sudden daily tests. T2. Quarterly exams. T3. Giving students grades for daily participation W1. Encourage daily discussions. W2. Ask thought-provoking questions.

W. General Skills	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	24	Enable the student to understand th basics of the axiomatic system and re prove Euclid's theorems	Axiomatic Systems, Properties o Axiomial System, Elementary Engineering	Daily preparatio	Exam and daily discussic
9-16	24	Enable the student to create a piece and compare between the pieces as well as create an angle and compare between angl	Application and comparison	Daily preparatio	Exam and daily discussic
17-2	18	Euclidean geometry calendar	Euclidean geometry calendar	Daily preparatio	Exam and daily discussion

23-27	15	Euclidean geometry and non-Euclidean geometry	In this topic, the student is explained to non-Euclidean geometry and its types	Daily preparation	Exam and daily discussion
28-30	9	Projective and Structural Engineering	The student can understand the meaning perspective and projection geometry	Daily preparation	Exam and daily discussion

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	مفاهيم اساسية في الهندسة د. امال شهاب الدين
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. اسم المقرر/
Curriculum and textbook
2. رمز المقرر
3. الفصل / السنة/
2025/2024
4. تاريخ إعداد هذا الوصف/
2024/9/1
5. أشكال الحضور المتاحة
In presence
6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)
total 6 hours per week 120
7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)
Name: Teacher: Amer Kareem hadhal الآيميل : ahadhal@uowasit.edu.iq
8. اهداف المقرر

Objectives of the study subject	• Identifying the objectives of the curriculum and the textbook. • The logical and psychological organization of matter • The ability to analyze current issues in curricula and contemporary issues

9. استراتيجيات التعليم والتعلم	
الاستراتيجية	ainstorming strategy, active learning strategy, free guided discussions, problem solving, and short tests

10. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
		Enabling students to understand the material. Cultivating a culture of scientific discussion and empowerment	Curriculum and textbook	Discussion panel Cooperative education Active learning	Questions and discussions A written test -

			Students learn this art scientifically Realistic		

11. تقييم المقرر
Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.

12. مصادر التعلم والتدريس	
الكتب المقررة المطلوبة (المنهجية أن وجدت)	Curriculum book and textbook
المراجع الرئيسة (المصادر)	
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير....)	
المراجع الإلكترونية ، مواقع الانترنيت	

1. Course Name: Developmental psychology

2. Course Code:

3. Semester / Year: Chapter one

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms: In presence

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

40hour/ 2hour

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

Name: Noora Karim Saleh
Email: nsalih@uowasit.edu.iq

8. Course Objectives

Course Objectives ... Increasing the student's understanding of the educational and social reality throughout the ages, realizing the educational process at its utmost necessity, and understanding educational theories on various peoples, ancient and modern.

Interpreting the educational process from a historical and philosophical point of view 0

Shedding light on upbringing and education, highlighting the importance of the role of social pedagogical upbringing institutions and helping students to train and feel the importance of the educational process.

It is also a science that describes and explains the impact of educational systems on determining the educational reality revealed by schools
Historical reality, past and present
Philosophical education, defining the goals of community education, and applying educational concepts

- .....
- .....
- .....

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-8	2	Growth and maturity Life stages and developmental demands Research methods in psychology Growth Factors affecting growth Maturity and learning Deprivation Developmental psychology theories			
9-16	2	The child's physical development The child's linguistic development The child's mental development The child's motor development The child's emotional development Congenital development of the child			
17-22	2	Moral standards			

20-27	2	Conscience formation Ideals Social development of the child Means of socialization adolescence The nature of adolescence, the stages of adolescence Physical development of the adolescent Mental development moral development Social growth Family patterns School problems, tendencie and trends			
28-30	2	Choosing a profession Adolescent and school Adolescents and peers Adolescents and the media The importance of teenage work			
11. Course Evaluation					

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Developmental Psychology
Main references (sources)	Developmental Psychology
Recommended books and references (scientific journals, reports…)	Jamal Hussein Al-Alusi Umaima Ali Khan Psychology of childhood and adolescence Ahmed Abdel Latif Abu Saad, Developmental Psychology, Hisham Ahmed Ghorab, Developmental Psychology
Electronic References, Websites	

Educational administration
2. Course Code:
Chapter one
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
My presence
6. Number of Credit Hours (Total) / Number of Units (Total)
40 hours 2 hours
7. Course administrator's name (mention all, if more than one name)
Name: Kareem Anwer Jasim Email: kjasem@uowasit.edu.iq
8. Course Objectives

Course Objectives	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	Using educational discussion (educational dialogue), which depends on exchanging ideas to reach facts Use of modern computer technologies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
		Management concepts and functions Concepts of educational administration and their characteristics Educational management skills for educational management patterns Centralization and decentralization in educational administration. Educational administration between centralization and decentralization The school administration Traditional classical schools Educational administration School administration jobs School management styles Foundations of democratic administration School principal skills, factors affecting educational administration The concept of classroom management The importance of classroom management Important areas of classroom management Classroom management objectives Factors affecting classroom management The importance of classroom interaction			

		The concept of educational supervision Objectives of educational supervision Foundations of educational supervision Educational supervision jobs Types of educational supervision Methods for supervising educational enlightenment Educational thought School and community Newspapers and magazines goals council parents Secondary education general objectives Specific goals and stages of education Secondary The importance of secondary education Problems facing secondary education			

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

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Educational administration

Main references (sources)	Abu Jado, Saleh (2001) Educational Psychology, Dar Al Masirah Publishing House, Amman Abu Shindi, Sahar. (2011), Human Resources Management in Educational Institutions, Osama Publishing and Distribution House, Amman, Jordan. Abu Sheikha Nader, (2002), Time Management, Majdalawi Publishing House, Amman, Jordan. Abu Ghazala, Muhammad (2005), Building a training program for department directors in the Jordanian Ministry of Education in light of reality and contemporary administrative trends, unpublished doctoral thesis, Amman Arab University for Postgraduate Studies, Amman, Jordan.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. Course Name:	
English language	
2. Course Code:	
3. Semester / Year:	
2025/2024	
4. Description Preparation Date:	
2024/9/1	
5. Available Attendance Forms:	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 theoretical hours	
7. Course administrator's name (mention all, if more than one name)	
Name: SAJJAD ABED ALI SHAREEF Email: **sashareef@uowasit.edu.iq**	
8. Course Objectives	
Course Objectives	1. Enabling the student to acquire basic English language skills 2. Enable the student to employ the English language for the purposes ofcommunication, academic study and research. 3. Enable the student to acquire the language proficiency necessary forthe current academic and future professional aspects 4. Enabling the student to benefit from foreign sources by developing histranslation skill 5. Enable the student to acquire a store of necessary vocabulary andlinguistic structures 6. To increase the students' background about English language 7. Enhance students' ability in listening, speaking, reading and writing 8. Make the students familiar with the English language in their study
9. Teaching and Learning Strategies	

Strategy	1- Through teaching theoretical material by the instructor 2- Making the students involved in various activities that encourage them tospeak, listen, read and write in English 3- Employing the videos and pictures that help students to interact in English 4- Encouraging the students to participate in the lesson by raising topics that haa contact with their lives 5- Using English short stories and jokes given in their book 6- Involve the student in the process of presenting the lesson
	7- Employing English educational and mathematical texts appropriate to theacademic stage and the student's linguistic level 8- Helping the student to practice different language skills in and outside theclassroom

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1		**Getting to know you**		
2	1		**Tenses**		
3	1		**questions words**		
4	1		**conversation**		
5	1		**whatever makes You happy**		
6	1		**present tenses**		
7	1		**have to and have got to**		
8	1		**things I like doing**		
9	1		**making conversation**		
10	1		**Expressing interest**		
11	1		**Short answers**		
12	1		**Questions and answers**		
13	1		**what's in the news?**		
14	1		**Past tenses**		
15	1		**regular and irregular verbs**		
16	1		**Adverbs**		
17	1		**making conversation**		
18	1		**Eat, drink, and be merry!**		
19	1		**expressions of Quantity**		
20	1		**Articles**		

21	1		**making conversation**		
22	1		**Looking forward**		
23	1		**verb patterns**		
24	1		**future forms**		
25	1		**What ... like!**		
26	1		**Comparative and superlative**		
27	1		**synonyms/ antonyms**		
28	1		**making conversation**		
29	1		**Present Perfect**		
30	1		**past simple vs Present Perfect**		

1. Course Name:
Arabic language
2. Course Code:
3. Semester / Year:
2025/2024
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours
7. Course administrator's name (mention all, if more than one name)
Name: Kawthar Qasim Sahn Email:kawthard402@gmail.com

8. Course Objectives	
Course Objectives	It aims to contribute to the formation of teachers who have competence, ability, good linguistic and scientific performance, and active scientific practice.

9. Teaching and Learning Strategies	
Strategy	- Introducing the student to the correct Arabic language words, their correct structures and methods in an interesting and attractive way. - Enabling the student to read correctly, and to acquire the ability to use the language correctly in communicating with others, such as speed, quality of delivery, and good expression.

10. Course Structure

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

8-1	1	The student understands the meanings of texts in which objects appear and differentiates between them in terms of significance	The accusative ones object The effect is with him Effect for it Absolute effect	Explanation and discussion	Exams and daily discussion
16-9	1	Mistakes are widespread in our daily speech and in texts. We teach the student a set of these mistakes to avoid them	Common linguistic errors	Explanation and discussion	Exams and daily discussion
22 -17	1	The student avoids making mistakes in writing “dha” and “dha” and differentiates between the meanings of the words -Writing numbers in the correct way	Writing the dā’ and ḍā’ Rules for writing numbers	Explanation and discussion	Exams and daily discussion
27 -23	1	Get acquainted with some Qur’anic texts and learn the subtle linguistic differences in the noble verses	Linguistic differences -The difference between rain and rain The difference between an oath and an oath The difference between light and light The difference between obligation and duty	Explanation and discussion	Exams and daily discussion
30 -28	1	The student senses the beauty of the words in these texts and their meanings	Poetic texts For the jeweler	Explanation and discussion	Exams and daily discussion

11. Course evaluation	
Daily discussion to determine the extent of students’ understanding Daily exams with various short scientific questions to understand the extent of their understanding of the material and to evaluate the daily contributions Request immediate participation by students Daily exams, monthly exams for the curriculum, and the final exam	
12. Learning and teaching resources	
General Arabic language for non-specialists/Dr. Kazem Hamad	
The language of the Arabs	

and learning the rules of parsing and literature/Siddiq Ismail Hafez	

1. Course Name:
The crimes of the Baath regime in Iraq
2. Course Code:
3. Semester / Year:
2025/2024
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Name: **Saif Al-Din Nasser Khazal** Email **skhazaal@uowasit.edu.iq**
8. Course Objectives

Course Objectives	**The student learns about the topics of the course that shed light on the crimes committed by the previous regime in Iraq through clarification The concept of crime in general in terms of its types and types, an explanation of the violations that have affected human rights, and also an explanation of environmental problems Which Iraq faced because of this system.**

9. Teaching and Learning Strategies

Strate	*Giving lectures by giving logical explanations of the topic being taught *Class participation through preparing reports related to the subject and discussing them

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The concept of crime (definition - types -its sections)	Baath crimes	theoretical	Discussn/questns answe
2	1	Crimes ofthe Baath regime (international crime - its types)	Baath crimes	theoretical	Discussn/questns answe
3	1	Decisions issued by the court The Iraqi Supreme Criminal Court	Baath crimes	theoretical	Discussn/questns answe
4	1	Psychological crimes (mechanisms and consequences)	Baath crimes	theoretical	Discussn/questns answe
5	1	Social crimes (militarization of society)	Baath crimes	theoretical	Discussn/questns answe
6	1	The Baath regime’s position on Religion	Baath crimes	theoretical	Discussn/questns answe
7	1	Violating Iraqi laws	Baath crimes	theoretical	Discussn/questns answe
8	1	First semester exam	Baath crimes		
9	1	Pictures of human rights violations	Baath crimes	theoretical	Discussn/ques

					ns a answe
10	1	Decisions on political and military violations of the Baath regime	Baath crimes	theoretical	Discus n/ques ns a answe
11	1	Prison and detention places of the Baath regime	Baath crimes	theoretical	Discus n/ques ns a answe
12	1	Environmental crimes of the Baath regime	Baath crimes	theoretical	Discus n/ques ns a answe
13	1	Military and radioactive contaminati and mine explosions	Baath crimes	theoretical	Discus n/ques ns a answe
14	1	Bombing the city of Halabja with chemical weapons	Baath crimes	theoretical	Discus n/ques ns a answe
15	1	Destruction of cities and villages (scorched earth policy)	Baath crimes	theoretical	Discus n/ques ns a answe
16	1	Bombing of holy shrines, mosques and Husseiniyas	Baath crimes	theoretical	Discus n/ques ns a answe
17	1	Drying the marshes	Baath crimes	theoretical	Discus n/ques ns a answe
18	1	Razing palm groves, trees and Crops	Baath crimes	theoretical	Discus n/ques ns a answe
19	1	Mass grave crimes	Baath crimes	theoretical	Discus n/ques ns a answe

20	1	The events of 1963 and their relationship to mass graves	Baath crimes	theoretical	Discus n/ques ns answe
21	1	Events extending from (1979 -2003) and their relationship In mass graves	Baath crimes	theoretical	Discus n/ques ns answe
22	1	Chronological classification of genoc graves in Iraq	Baath crimes	theoretical	Discus n/ques ns answe
23	1	Genocide graves related to the Iraq War Iranian (1980-1988)	Baath crimes	theoretical	Discus n/ques ns answe
24	1	Graves of the 1983 Barzanian Kurd genocide	Baath crimes	theoretical	Discus n/ques ns answe
25	1	Genocide graves for the victims of the Anfal massacre for the period (1987-1988)	Baath crimes	theoretical	Discus n/ques ns answe
26	1	Genocide graves for victims of the Shaabaniya uprising For the year 1991	Baath crimes	theoretical	Discus n/ques ns answe
27	1	Limiting the three ruling powers to the Baath Party	Baath crimes	theoretical	Discus n/ques ns answe
28	1	Violation of the right to party pluralism by the Baath regime	Baath crimes	theoretical	Discus n/ques ns answe
29	1	Violation of international law (the first and second Gulf wars). - International blockade 1990	Baath crimes	theoretical	Discus n/ques ns answe

30	1	The impact of the transitional period on combating authoritarian politics Law No. 32 of 2016 banning Baath Party	Baath crimes	theoretical	Discus: n/ques ns answe
31	1	Second semester exam	Baath crimes		

11. Course Evaluation

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

*Semester/30%
*Daily preparation, activities and attendance/10%
*Final exam/60%

12. Learning and Teaching Resources

Required textbooks (curricular book any)	The crimes of the Baath regime in Iraq
Main references (sources)	1 - The Permanent Iraqi Constitution of 2005 2- A law prohibiting the Baath Party, entities, partie , and racist, terrorist, and takfiri activities No. 32 of 2016 3- General principles in the Iraqi Penal Code / Prof. Dr. Ali Hussein Al-Khalaf, Prof. Dr. Sultan Abdul Qa
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Baath crimes documentaries on the Internet

1. Course Name: Mathematical Analysis

2. Course Code:

3. Semester / Year:2025/2024

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms: attending

6. Number of Credit Hours (Total) / Number of Units (Total): 90 Hours/6 Units

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

Name: Nidaa Mureah Atheab
Email: nmreah@uowasit.edu.iq

8. Course Objectives

Course Objectives	• **Understands the relationships between field of real numbers and field of intege numbers** • **Understands that the field of real numb is complete ordered field** • **Gives the idea of converge sequence** • **To define the concept of Cauchy sequence** • **To define the concept of series** • **To know that the sequence in the field real numbers is converge** • **Tests the convergence of series** • **To define the concept of absolutely converge** • **To know the concept of conditionally converge**

	• **Gives the properties of uniformly converge** • **Understands the concept of Riemann's Integration** • **Gives the concept of Measure** • **To define measure function** • **Gives the concept of Lebesgue's integr** • **Understands the relationships between Riemann's Integration and Lebesgue's integration.**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
2	4	Properties of real numbers as complete ordered field, relation between rational and irrationals, extended real numbers Q in complete ordered field, distance on reals, define the sets, like $R^2,\ldots,R^n,I^2,..$ and its Euclidean distance	Real Numbers	Explanation and discussic	Questions, discussion and Exam

4	4	Definition, various, examples, pseudo metric space, subspace, bull and disk and examples, open sets and its properties, equivalent metrics on the same space, closed sets and its properties, dense set, bounded set, compact set, Hien-Borel theorem	Metric spaces	Explanation and discussic	Questions, discussion and exam
3	4	Sequences, converge sequence, divergent sequences, bounded sequence, monotone sequence, Cauchy sequence, Banach contraction principle	Sequences in metric spaces	Explanation and discussic	Questions, discussion and exam
3	4	Numerical series[definition, converge, examples, test of converges, absolutely and conditionally converge]	Series	Explanation and discussic	Questions, discussion and exam
3	4	Limits, continuity, examples, equivalent definition of continuity, uniform continuous	The Continuity	Explanation and discussic	Questions, discussion and exam
3	4	Definition, geometric mean, derivative and continuous examples	The Derivative	Explanation and discussic	Questions, discussion and exam

3	4	Definition, examples, some theorems of integral function, integral as linear transformation.	Riemann′s Integratic	Explanation and discussic	Questions, discussion and exam
3	4	Measure of bounded open interval and properties, measure of open sets in R, outer and inner measure of bounded sets in R, zero set, examples for uncountable set	Measure Theory and Lebesgue′s integral	Explanation and discussic	Questions, discussion and exam

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

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Lectures on Mathematical Analysis
Main references (sources)	1- Burril C.W., Knudsen J.R., Variabl 1969. 2- Rudin W., Principles of Mathematical analysis, 1964 3- Malik S. C., Arora S., Mathematica analysis,2008. د. عادل غسان نعوم " مقدمة في التحليل الرياضي"
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. Course Name:
Statistics and probability
2. Course Code:
3. Semester / Year:
2025/2024
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
Self attendence
6. Number of Credit Hours (Total) / Number of Units (Total) :
120 hours per year and 6 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ali Hussien shuaa Email: alishuaa@uowasit.edu.iq And Saad obaid jameel Email: sjameel@uowasit.edu.iq
8. Course Objectives

Course Objectives	• **Descriptive statistics (definitions, random variables, population, sample, data, data graphing, correlation and regression)** • **Introduction to probability (definitions, experiments, events, counting methods, axioms, probability theories, independent events, conditional events, Bayes' theorem, examples, external questions)** • **Random variables and probability distributions (definitions, types, theories, examples, external questions)**

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

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

1- 8	32	The student learns what was presented in the lecture	Descriptive statistics	Using the pen and board and data show	Exams and quick exams and assignments
9 - 18	40	The student learns what was presented in the lecture	Introduction in probability	Using the pen and board and data show	Exams and quick exams and assignments
19 -23	20	The student learns what was presented in the lecture	Random variables	Using the pen and board and data show	Exams and quick exams and assignments
24 - 30	28	The student learns what was presented in the lecture	Test hypothesis	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Probability theory, written by: Dr. Walid Al-Nouri * Introduction to Statistics, written by: Muhammad Sobhi Abu Saleh and Adnan Muhammad Auf 2- Previous topics from the second grade Descriptive Statistics and Probability
Main references (sources)	1. Probability and Statistics by Morris H. De Groot 2. Introduction to Mathematical Statistics By Hogg and Craig
Recommended books and references (scientific journals, reports…)	1. An Introduction to probability theory and mathematical statistics; by Rohtagi 2. Introduction to the theory of statistics; by Mood , Graible and Boes
Electronic References, Websites	

1. Course Name:	
Partial Differential Equation	
2. Course Code:	
3. Semester / Year:	
2025/2024	
4. Description Preparation Date:	
2024/9/1	
5. Available Attendance Forms:	
Actual mandatory attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90 theoretical hours	
7. Course administrator's name (mention all, if more than one name)	
Assist.porf.Dr Ahmed Shihab Hamad Email: ahmed.cos@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	**1**− The student's knowledge of partial differential equations and basic concepts and their classification • Find methods to solve partial differential equations • Use Laplace and Fourier transforms to solve PDE • Solve the heat conduction equation • Students skills that enable them to teach mathematics .
9. Teaching and Learning Strategies	
Strategy	1- Explaining the study material while asking students continuous and short questions

	2. Conduct monthly and tests 3. Evaluate students by solving questions on the board

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction , preliminary definitions of partial differential equations	Methods of Solving Homogeneous partial Differential Equations	Explanation + discussion	General questions and discussion
2	3	Some methods for solving equations Partial differential (Lagrange and Charpit),Solve an equation of the form f(p,q) = 0	Methods of Solving Homogeneous Differential Equations	Explanation + discussion	General questions and discussion and practical tests
3	3	Solve an equation of the form f(z, p ,q) = 0, Solve an equation of the form f(x , y , p , q) = 0	Methods of Solving Homogeneous partial Differential Equations	Explanation + discussion	General questions and discussion
4	3	Using some transformations	Methods of Solving Homogeneous Differential Equations	Explanation + discussion	General questions and discussion
5	3	Using some Transformations	Methods of Solving Homogeneous Differential Equations	Explanation + discussion	test
6	3	Solving homogeneous partial differential equations with constant coefficients (general solution and special solution)	Methods of Solving Homogeneous Differential Equations	Explanation + discussion	General questions and discussion

7	3	Solving homogeneous partial differential equations with constant coefficients (general solution and special solution)	Methods of Solving Homogeneous Differential Equations	Explanation + discussion	General questions and discussion
8	3	Methods of solving second-order non homogeneous equations with variable coefficients can be reduced into homogeneous	Methods for solving non homogeneous equations with constant coefficients	Explanation + discussion	General questions and discussion
9	3	Methods of solving second-order non homogeneous equations with variable coefficients can be reduce into homogeneous	Methods for solving non homogeneous equations with constant coefficients	Explanation + discussion	General questions and discussion
10	3	Conjugate factor method for finding the special solution	Methods for solving non homogeneous equations with constant coefficients	Explanation + discussion	General questions and discussion
11	3	Multiplication method and second-order differential equation	Methods for solving non homogeneous equations with constant coefficients	Explanation + discussion	General questions and discussion
12	3	Fourier series, definition, how to find it .	Fourier series and transformations	Explanation + discussion	General questions and discussion
13	3	Odd and even Fourier series and their convergence	Fourier series and transformations	Explanation + discussion	General questions and discussion
14	3	Fourier series on half period and on $[-L, L]$	Fourier series and transformations	Explanation + discussion	General questions and discussion

15	3	Fourier transformations	Fourier series and transformations	Explanation + discussion	General questions and discussion
16	3	Fourier series differential	Fourier series and transformations	Explanation + discussion	General questions and discussion
17	3	Heat equation in one dimension with homogeneous boundary conditions	One dimension Heat equation	Explanation + discussion	General questions and discussion
18	3	Heat Equation in one dimension. Separation of variables	One dimension Heat equation	Explanation + discussion	General questions and discussion
19	3	Heat Equation in one dimension with homogeneous boundary conditions	One dimension Heat equation	Explanation + discussion	discussion
20	3	Method of Characteristic	One dimension Heat equation	Explanation + discussion	discussion
21	3	A solution to the D' Alembert equation for the wave equation	One dimension Heat equation	Explanation + discussion	discussion
22	3	Laplace's equation in two dimensions	Laplace Equation	Explanation + discussion	discussion
23	3	Laplace's equation in two dimensions	Laplace Equation	Explanation + discussion	discussion

24	3	Laplace's equation for polar coordinates	Laplace Equation	Explanation + discussion	discussion
25	3	Laplace's equation for polar coordinates	Laplace Equation	Explanation + discussion	discussion
26	3	**Laplace Transformations**	Laplace Equation	Explanation + discussion	discussion
27	3	**Laplace Transformations**	Laplace Equation	Explanation + discussion	discussion
28	3	Numerical solutions of partial differential equations	Numerical solutions of partial differential equations	Explanation + discussion	discussion
29	3	Numerical solutions of partial differential equations	Numerical solutions of partial differential equations	Explanation + discussion	discussion
30	3	Numerical solutions of partial differential equations	Numerical solutions of partial differential equations	Explanation + discussion	

11. Course Evaluation
- The annual course of 40 is divided into 15 marks for the practical subject and 25 marks for the theoretical subject, including 10 marks for the totals of projects and the daily. - Final out of 60

12. Learning and Teaching Resources	
Required textbooks (curricular books, if an	"The Internet of things Connecting "
Main references (sources)	The Internet of things: Key Application and Protocols
Recommended books and references (scientific journals, reports…)	Foundation Elements an IoT Solution
Electronic References, Websites	https://www.techtarget.com

1. Course Name: Ring Theory

2. Course Code:

3. Semester / Year: 2025/2024

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms: Self attendence

6. Number of Credit Hours (Total) / Number of Units (Total) : 120 hours per year and 6 units per week

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

Name: Dr. Aqeel Jassim Noor
Email: aqeel.noor@uowasit.edu.iq

8. Course Objectives

Course Objectives	• **The students will study the spe skills to solving problems in ri theory** • **Students will be learning general sk in mathematics**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2	2 2 2 2	**Rings** Definition Example and General Properties of Rings Direct sum of rings and some Remarks Integral domain	**Rings**	Using the and board data show	Exams and q exams assignments

3	2 2	Division ring Field Boolean rings Center of a ring.			
4 5	2 2 2 2	**Subrings** Definition characterization of subring and Examples some operations on subrings-subfields	**Subrings**		
6 7 8	2 2 2 2 2 2	**Ideals** Definitions and Examples operations on ideals addition of ideal, multiplication of ideals, intersection of ideal, union of ideal initely generated ideal principal ideal ring finitely generated ring rings as direct sum of ideals.	**Ideals**		
9-11	4 4 4	**Factor ring** definition and examples some relationships between a ring R and its factor ring.	**Factor ring**		
12 13	2 2 2 2	**Ring homomorphism** definition and examples Kernel and image of ring homomorphism. Some basic properties of ring homomorphisms Fundamental theorems of ring homomorphisms Embedding of ring and theorem of embedding.	**Ring homomorphism**		
14-17	4 4 4 4	**Certain special types of ideals** maximal ideal prime ideal semiprime ideal primary ideal and radical of ideals	**Certain special types of ideals**		
		Polynomial ring definition and examples	**Polynomial ring**		

18-19 21 22-25 26-31 	2 2 2 2 2 2 2 2 4 4 4 4 8 4 4 4 4 2 2	some relationships between a ring R and the polynomial ring over R degree of polynomial with some theorems related with this concept Division Algorithm theorem factor theorem remainder theorem irreducible polynomial polynomial ring over a field (F[x], where F is a field) the quotient of polynomial ring over a field. **Extension of fields** Definitions and some example to calculate extension field of certain field. **Modules** Submodules factor modules homomorphism modules	**Extension of fields** **Modules**		

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

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	A first course in ring and ideals
Recommended books and references (scientific journals, reports…)	Algebra (graduate text mathematics)
Electronic References, Websites	

1. Course Name:

Numerical Analysis

2. Course Code:

3. Semester / Year:

2025/2024

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms:

Attendance

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

4 hours / 5 units

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

Name: Dr. Ali Khalaf Hussain
Email: alhachamia@uowasit.edu.iq

8. Course Objectives

Course Objectives	• **Acquiring students' knowledge of numerical analysis principles.** • **Developing students' skills in using computer software.** • **Equipping students with the skills necessary for teaching mathematics.**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2 3 4	4 4 4	Numerical Analy What is it? Floating-point numbers roundoff errors	**Introduction**	Lecture Notes You tube Lecture Notes You tube	Daily quizzes Assignments Monthly exams

5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Errors: Sources o error in numerica computation Absolute and relative errors Stable and unstable computations: Conditioning. **Solving systems linear Equations** LU and Cholesky factorizations. Pivoting and constructing an algorithm. Neuman series ar iterative refineme Norms of matrix and vectors. Solution of equations by iterative methods: (i) Jacobi method (ii Gauss-Siedel method **Solution of Nonlinear equations** Bisection method False-position method. Newton's Method. Secant method. Fixed points and functional iteration. Acceleration of a fixed point. **systems of nonlinear Equations** Fixed point method. Newton method. Modified Newton method **Interpolation** Finite difference operators Newton forward difference	**Solving systems of linear Equations** **Solution of Nonlinear equations** **systems of nonlinear Equations** **Interpolation** **Numerical Differentiation and integration** **Numerical Solution of Ordinary Differential Equations**		

		interpolation formula Newton backward difference interpolation formula Besiel interpolation formula Polynomial interpolation (Lagrange interpolation) Divided differences Spline (degree one, two and three) interpolation Least square theory (discrete and continuous) **Numerical Differentiation and integration** Numerical differentiation Numerical integration based on interpolation **Numerical Solution of Ordinary Differential Equations** Existence and uniqueness of solutions Taylor-series method Runge-Kutta methods Multistep methods Euler method Modified Euler			

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if a	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. Course Name:

Teaching curricula and methods

2. Course Code:

3. Semester / Year:

Year

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms:

is mandatory

6. Number of Credit Hours (Total)(90) / Number of Units (Total)(3)

6. Number of Credit Hours (Total)(90) / Number of Units (Total)(3)

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

Name: Hazem jassim suhaib

Email: hazmwe23@jmail.com

8. Course Objectives

Course Objectives	Preparing teachers capable working i

9. Teaching and Learning Strategies

Strategy	All learning strategies

10. Course Structure

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

11. Course Evaluation

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

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Teaching curricula and methods
Main references (sources)	Teaching curricula and methods dr ch khamis al hassani
Recommended books and references (scientific journals, reports…)	Teaching curricula and methods
Electronic References, Websites	Magazines and newspapers

Educational administration
Guidance
2. Course Code:
Chapter one
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
My presence
6. Number of Credit Hours (Total) / Number of Units (Total)
40 hours 2 hours
7. Course administrator's name (mention all, if more than one name)
Name: Kareem Anwer Jasim Email: kjasem@uowasit.edu.iq
8. Course Objectives

Course Objectives	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	Using educational discussion (educational dialogue), which depends on exchanging ideas to reach facts Use of modern computer technologies

10. Course Structure

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

		The conceptof psychologia counselling Counseling and psychological guidance.. The difference between guidance and counselling. Misconceptions about guidance and counselling Psychological counseling and psychotherapy The difference between psychological counseling and psychotherapy The origins and development of psychological counselling Justifications for guidance and psychological counseling and the need for it Objectives and methods of uidance and psychological counseling The relationship of guidance and counseling to other sciences Areas of psychological counseling. Educational guidance.. Professional guidance Aggressive (offensive) defense tricks.			

		Alternative defense tricks			

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Educational administration
Main references (sources)	Fadil, Malik (2020) Counseling and mental health Zahran, Hamed Abdel Salam (1980) Psychological guidance and counselling
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. Course Name: Topology

2. Course Code:

3. Semester / Year:2025/2024

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms: Presence

6. Number of Credit Hours (Total) / Number of Units (Total): 90 hour

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

Name: Saad Mahdi Jaber
Email: s.jaber@uowasit.edu.iq

8. Course Objectives

Course Objectives	• **The student becomes familiar with the basic principles a concepts of the subject of topology.** • **The student also acquires sufficient skills to te mathematics**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Define the topology ,open set and closed set and Important	Definition of topological space	Lecture, Notes You tube	Daily and monthly a Homework

		topological spaces			
2	4	Important topolo-gical spaces	Definition of topological space	=	=
3	4	Interior, exterior boundary sets and propertieses .	Basic-topological concepts	=	=
4	4	Limit set and closu set.	Basic-topological concepts	=	=
5	4	Dence set and no where dence se	Basic-topological concepts	=	=
6	4	Basis and sub bases of topology	Methods of generate topology	=	=
7	4	Relative topology	Methodsofgenerate topology	=	=
8	4	Continuous functi	The continuous function and topological homeomorphic	=	=
9	4	Hmeomorphisim function	The continuous function and topological homeomorphic	=	=
10	4	Topological properties	The continuous functions and topological homeomorphic	=	=
11	4	T_0-space and T_1-space	Seperation axioms	=	=
12	4	T_2-space and Regular-space	Seperation axioms	=	=
13	4	Normal-space	Seperation axioms	=	=
14	4	Definition and Properties of compact set	Compactness	=	=
15	4	Properties of compact set	Compactness	=	=
16	4	Properties of compact set	Compactness	=	=
17	4	Definition and Properties of connected spac	Connectedness	=	=
18	4	Properties of connected spac	Connectedness	=	=
19	4	Properties of connected spac	Connectedness	=	=
20	4	Properties of connected spac	Connectedness	=	=
21	4	Properties of connected spac	Connectedness	=	=
22	4	Properties connected spac	Connectedness	=	=

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

Required textbooks (curricular books, if any)	
Main references (sources)	[1]R. Englking, Outline of general topology, Amsterdam, 1989.

	[2] S. Willard, General topology, Addison Wesley Publishing Compa Inc, USA, .1970
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	https://youtube.com/@saadjaber1481?si=K7qyllbpiGtLO9vj

.1 Course name:
complex analysis
.2 Course code:
complex analysis
.3 Semester/year:
2025/2024
.4 the date this description was prepared:
2024/9/1
.5 Available forms of attendance:
Actual mandatory attendance
.6 Number of study hours (total)/number of units (total)
hour 120
.7 Name of the course administrator (if more than one name is mentioned)
Miss.Suad younus AbdUl-Al-Hassan
.8 Course objectives

- Developing students' analytical capabilities to reach logical solutions to various problems related to the subject of complex analysis
- **Preparing and qualifying students to meet the requirements of work in the private and public sectors in mathematics sciences and to meet the education sector with highly qualified cadres.**
- **Students acquire the skills that enable them to teach mathematics**

.9 Teaching and learning strategies

he strategy

- **Explanation and clarification through lectures**
- **Self-education through homework**
- **Graduation projects**
- **Solving difficult problems using scientific material**
- **Use of e-learning**
-

.10 Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week

Daily and monthly exams and group discussions	**Blackboard with datashow**	Introduction, real and complex number, powers and roots for complex number, regions in complex plane	**Introducing the student to the principles of complex numbers, their algebraic properties, and their geometric representation, as well as regions in the complex plane and points such as open and closed points, continuous regions, etc**	24	1-8
Daily and monthly exams and group discussions	**Blackboard with datashow**	Function and complex variable functions, limits and derivatives function, continuity, analytic functions, Cauchy Riemann equations, harmonic functions	**Identifying complex functions, their derivation, and end points, in addition to analytical functions, the Cauchy-Riemann equations, and their role in analytical functions**	24	9-16
Daily and monthly exams and group discussions	**Blackboard with datashow**	Some elementary functions, exponential functions, polynomials and trigonometric functions, rational, Hyperbolic function , Properties of elementary and logarithmic functions.	**Identify exponential functions and their properties**	24	17-22

Daily and monthly exams and group discussions	**Blackboard with datashow**	Complex integration, contour, simply and multiple connected domain, Cauchy integral theorem, Cauchy integral formula, Conformal mappings and its applications.	**Identify complex integrals, Cauchy's integral theorems, and applications of angle conservation**	24	23-27
Daily and monthly exams and group discussions	**Blackboard with datashow**	Powers series and convergent, Tayler and Laurent theorems, singulars points ant types, Residue theorem and its applications	**Identify power series and their types, abnormal points and their types, and the theory of remainders and their applications**	24	28-30

Course evaluation.11

- Daily and monthly tests and use of brainstorm
- Open group discussion method

learning and teaching resources.12

By Churchill	Complex Variable and Applications
By James ward Brown	Complex variable and applications

1. Course Name:
Mathematical Statistics
2. Course Code:
3. Semester / Year:
2025/2024
4. Description Preparation Date:
2024/9/1
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
120 hours per year and 6 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Saad obaid jameel Email: sjameel@uowasit.edu.iq

8. Course Objectives	
Course Objectives	This course aims to provide the student with basic information and practical training in the field of biostatistics, including the ability to use equations and mathematical logic in evaluating the probability of the validity of the information and the extent of the correlation between variables and linking them to the health, educational, social reality and other fields. 1- The ability to analyze life's problems using high skills and applying methodologies. 2- The ability to communicate with others within the work team to motivate and highlight the spirit of ability. 3- The ability to process information, such as understanding graphs and collecting information. 4- The ability to acquire new knowledge, learn from previous experiences, and be open to new solutions and innovations.

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

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

1- 8	32	The student learns what was presented in the lecture	Introduction in probability and random variables	Using the pen and board and data show	Exams and quick exams and assignments
9 - 18	40	The student learns what was presented in the lecture	Discrete distribution	Using the pen and board and data show	Exams and quick exams and assignments
19 -23	20	The student learns what was presented in the lecture	Continuous distribution	Using the pen and board and data show	Exams and quick exams and assignments
24 - 30	28	The student learns what was presented in the lecture	Sampling distribution and estimation	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Introduction to mathematical statistics, by Hogg and Craig.
Main references (sources)	3. Probability and Statistics, by Morris, H. Degroot 4. Introduction to Mathematical Statistics By Hogg and Craig
Recommended books and references (scientific journals, reports…)	1- Probability and Statistics, by Morris, H. Degroot 2- SOME BASIC THEORY FOR STATISTICAL INFERENCE M.S. BARTLETT, F.R.S. and D.R. COX, F.R. S
Electronic References, Websites	

1. اسم المقرر
Fuzzy Mathematics
2. رمز المقرر
3. الفصل / السنة
2025/2024
4. تاريخ إعداد هذا الوصف
2024/9/1
5. أشكال الحضور المتاحة
Presence
6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)
80
7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)
الاسم: Dr .Daher Waly Freh الآيميل : daheralbaydli@uowasit.edu.iq
8. اهداف المقرر

اهداف المادة الدراسية	**Definition of** Fuzzy Mathematics **and its source** **Methods to understand fuzzy set and fuzzy number and fuzzy relation and fuzzy function .**

9. استراتيجيات التعليم والتعلم

الاستراتيجية	● Explain the Fuzzy Mathematics with continuous &short questions ● Making the tests monthly ● Solving the problem & guidance the students

10. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	2+2	Definition & example	**Fuzzy set**	theorey	question
2	=	t-norm and t-conorm	=	=	=
3	=	eration on fuzzy set Alpha –	Fuzzy set	=	=
4	=	cut (level) set	Fuzzy set	==	=
5	=	=	=	=	=
6	=	Fuzzy Logic	=	=	=
7	=	Fuzzy Logic Definition and example	Fuzzy number	=	
8	=	= Fuzzy arithmetic’s	Fuzzy number Fuzzy number	=	= =

9	=	Distance between fuzzy	Fuzzy number	=	=
10	=	number		=	
		Basic notation of fuzzy	Fuzzy Relation		=
11	=	relation	Fuzzy Relation	=	
		Definition and examples	Fuzzy Relation		=
12	=	Composition of Fuzzy	Fuzzy Relation	=	=
		Relation	Fuzzy Relation		
13	=	Equivalence relation	=	=	=
	=	fuzzy	=	=	=
14	=	Transfer fuzzy relation to	=	=	=
15	=	Matrix	Fuzzy Function	=	=
16	=	Basic notation of fuzzy	Fuzzy Function	=	=
17	=	Functions	Fuzzy Function	=	=
18	=	Definition and examples		=	
19		Extension fuzzy function	Fuzzy Function		=
	=	Alpha- cut fuzzy function		=	
20		Fuzzy extreme of function	Fuzzy Function		=
	=			=	
21			=		

11.تقييم المقرر	
The degree is (100)	
12.مصادر التعلم والتدريس	
الكتب المقررة المطلوبة (المنهجية أن وجدت)	Introduction of fuzzy mathematics
المراجع الرئيسة (المصادر)	Introduction to Fuzzy set
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير....)	مقدمة في الرياضيات الرياضيات الضبابية
المراجع الإلكترونية ، مواقع الانترنيت	

Course name: .1	
Applied Mathematics	
Course code: .2	
Semester/year: .3	
2025/2024	
The date this description was prepared: .4	
2024/9/1	
Available forms of attendance: .5	
Actual mandatory attendance	
Number of study hours (total)/number of units (total) .6	
90 hours (3 hours per week)	
Name of the course administrator: .7	
Assist Prof Dr. Faik Jameel Hassan	
Course objectives .8	
Make the student able to: ● Qualifying and training the student and teaching him the types of differential equation and their solutions and how to apply these equations as mathematical models for natural phenomena. ● Qualifying and training the student and teaching him the importance of mathematical models and how to solve these mathematical problems using different tourniquets.	
Teaching and learning strategies .9	
● Explanation and clarification through lectures ● Self-education through homework ● Graduation projects ● Solving difficult problems using scientific material ● Use of e-learning	**The strategy**

Course structure .10

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	week

Daily and monthly exams and group discussions	Explanation + discussion	Differential Equations	Revision: Differential Equations and their solutions	6	**1-2**
Daily and monthly exams and group discussions	Explanation + discussion	Differential Equations	Second-order ODEs and their applications	6	3-4
Daily and monthly exams and group discussions	Explanation + discussion	Mathematical Models	Mathematical Models	6	5-6
Daily and monthly exams and group discussions	Explanation + discussion	Mathematical Models	Equilibrium Points and the directional fields	6	7-8
Daily and monthly exams and	Explanation + discussion	Mathematical Models	Mathematical Model of the Radioactive decay	6	9-10

group discussions					
Daily and monthly exams and group discussions	Explanation + discussion	Mathematical Models	Mathematical Model of Harmonic Oscillation	6	11-12
Daily and monthly exams and group discussions	Explanation + discussion	Mathematical Models	Mathematical Model of Exponential Growth and its application in Financial Mathematics	6	13-14
Daily and monthly exams and group discussions	Explanation + discussion	Mathematical Models	Solution of the Logistic Equation and its application in Mathematical Biology	6	15-16
Daily and monthly exams and group discussions	Explanation + discussion	Matrices	Principles of matrices	6	17-18

11. Course evaluation

- Daily and monthly tests and use of brainstorm
- Open group discussion method

12. Learning and Teaching Resources

1- Jigarkumar Patel, Kathryn Paulk, Differential Equations With Applications: Class Notes With Detailed Examples, 2019.

2- June Lue, Matrix Decomposition and Applications, 2022.

3- John Adrian Bondy and U.S.R. Murty, Graph Theory With Applications, 1984.

4- Robert Ghrist, Elementary Applied Topology, 2014.

1. Course Name:

educational measurement and evaluation

2. Course Code:

3. Semester / Year: 2025/2024

4. Description Preparation Date:

2024/9/1

5. Available Attendance Forms:

is mandatory

6. Number of Credit Hours (Total)(60) / Number of Units (Total)(2)

6. Number of Credit Hours (Total)(60) / Number of Units (Total)(2)

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

Name: Hazem jassim suhaib

Email: hazmwe23@jmail.com

8. Course Objectives

Course Objectives	**Preparing teachers capable working i**

9. Teaching and Learning Strategies

Strategy	All learning strategies

10. Course Structure

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

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	educational measurement and evaluat

Main references (sources)	educational measurement and evaluat by dr.abdel salam jawdt
Recommended books and references (scientific journals, reports…)	educational measurement a evaluation
Electronic References, Websites	Magazines and newspapers

1. Course Name:

Practical Education (Observation and Application)

2. Course Code:

Not specified

3. Semester

2025/2024

4. Date of Preparation of this Description:

2024/9/1

5. Available Attendance Formats:

Mandatory Physical Attendance

6. Total Study Hours/Units:

4 units

7. Course Responsible Person's Name (if more than one name is mentioned):

Assoc. Prof. Mahdi Alwan Aboud Al-Qurayshi
University Email: malwan@uowasit.edu.iq @uowasit.edu.iq

8. Course Objectives:

This course aims to:	1- Provide students-teachers with functional information to understand the meaning, importance, objectives, and types of practical education. 2- Assist students-teachers in clarifying and consolidating the theoretical principl of education, psychology, and academic courses studied in the college and applying them experimentally. 3- Help students-teachers understand their educational role from the observatio stage to the individual and collective application stage. 4- Provide students with general instructions and guidance on the roles of teach within the school.

9. Teaching and Learning Strategies:

Strategies:	Strategy 1: Lectures Strategy 2: Analytical Scientific Discussions Strategy 3: E-Learning Strategy 4: Practical Application

10. Course Structure:

Week	Hours	Assessment Method	Unit /Topic Name	Learning Method	Assessment Method

2	6	- Concept of practical education. - Its importance and objectives. - Ethics of the teaching profession Characteristics of a good teacher. - Duties of the teacher.	Theoretical	Discussion Analysis	Discussion and Ana Discussion and Ana Discussion and Ana Discussion and Ana
Theoretical and Practica1	Theoretical and Practica1	- Theoretical and Practica1	Theoretical and Practica1	Discussion Observation Fo	
Theoretical and Practical	Theoretical and Practical	1- Theoretical and Practic	Theoretical and Practical	Discussion and Practical Application	Discussion Feedback
Theoretical	Theoretical	- Theoretical	Theoretical	Discussion Analysis	Discussion and Observation Form

Practical	**Practical**	**Practical**	**Practical**	**Observation and Educational**	**Supervisor Feedback Form**

11. Course Assessment:

- Annual course assessment is out of 100, divided into:
- 40 marks for the course instructor divided according to the above mentioned components.
- 30 marks for the educational supervisor.
- 30marks for the scientific supervisor.
-

12.Learning and Teaching Resources:

Practical Education	Required Textbooks (if any):