

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



Academic Program and Course Description Guide

2025–2026

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

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

1. Program vision

To graduate highly qualified teachers to serve secondary education institutions in Iraq, and to ensure that the Physics Department outperforms similar departments in Iraq and the region in terms of academic level and scientific research program.

2. Program message

Preparing physics teachers who are academically, professionally, culturally, and digitally qualified to support secondary schools, keep pace with scientific and technological developments, and possess the ability to engage in self-learning and scientific research to meet the needs of the local and regional labor market, in line with the values and ethics of society.

3. Program objectives

- 1. Preparing graduates capable of applying teaching, learning, assessment, management, and various guidance mechanisms skills, using fluent Arabic and English languages and information and communication technology, taking into account individual differences among learners and achieving sustainable development within the framework of knowledge unity in the twenty-first century.**
- 2. Preparing graduates who are committed to societal values, professional ethics, and the foundations of the nation's cultural identity. They are aware of their role in developing these values and society, strive to solve its problems, participate in community service activities, develop academic and professional aspects, and employ scientific research skills and tools.**
- 3. Preparing graduates capable of creating job opportunities within emerging professional contexts related to the field of physics.**
- 4. Establish partnerships and agreements with educational institutions and civil society organizations to exchange and benefit from expertise.**
- 5. Follow up on graduates entering the labor market, provide them with various consultations, and help them develop the academic program.**
- 6. Providing a stimulating educational environment for graduates and keeping pace with scientific and technological developments in the field of physics and its applications.**
- 7. Developing the graduate's self-learning skills to ensure his ability to solve problems and the ability to learn for life.**
- 8. To prepare graduates to connect physics concepts to reality, enabling them to provide effective solutions to real-world problems related to technology and the environment.**
- 9. Disseminating knowledge in scientific fields related to physics and promoting research cooperation with local, regional and international institutions**
- 10. Qualifying graduates to continue their studies in academic and professional postgraduate programs.**
- 11. Preparing graduates capable of understanding the role of physics in developing society and building the foundations of civilizations, realizing the complementary relationship between the various branches of science and technology, and employing scientific and applied activities in knowledge production.**

Academic Program Description Form

University Name: Iraqi University

Faculty/Institute: College of Education

Scientific Department: Physics Department

Academic or Professional Program Name: Physics for undergraduate studies

Final Certificate Name: Bachelor of Education in Physics

Academic System: yearly

Description Preparation Date: 2025-2026

File Completion Date: 1/10/2025

Signature:



Head of Department Name: Asst. Prof.

Zeena Jamil Raheem

Date:

Signature:



Scientific Associate Name: : Asst. Prof. Oday Hameed

Ahmed

Date:

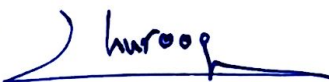
The file is checked by:

Department of Quality Assurance and University Performance

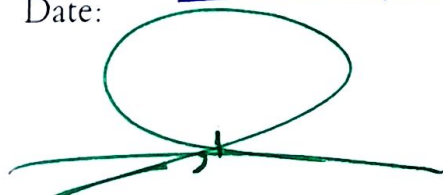
Name of the Director of the University's Quality Assurance and Performance

Department: **Dr. Shrouq Saad Ahmed**

Signature:



Date:



Approval of the Dean

4. Program accreditation
The department has not received program accreditation.

5. Other external influences				
nothing				
6. Program structure				
comments *	percentage	Study unit	Number of courses	Program structure
	11.38	19	8	Institutional requirements
	19.32	34	10	College requirements
	68.3	119	22	Department requirements
	nothing	nothing	nothing	Summer training
				Other

*** Notes may include whether the course is core or optional.**

7. Program description				
Credit hours		Course name	Course code	Year/Level
practical	theoretical			
2	3	Mechanics	nothing	First
2	3	Electricity and Magnetism (1)	nothing	First
	2	Heat and properties of matter	nothing	First
	3	Mathematics (1)	nothing	First
	1	Computer (1)	nothing	First
	2	Development and Educational Psychology	nothing	First
	2	Foundations of education	nothing	First
	1	Arabic	nothing	First
	1	Democracy and Human rights	nothing	First
	1	Fundamentals of education	nothing	First
	1	English language	nothing	First
2	3	Optics	nothing	Second
2	2	Electricity and Magnetism (2)	nothing	Second

	2	Principles of Astronomy	nothing	Second
	2	Sound and wave motion	nothing	Second
	1	Computer (2)	nothing	Second
	3	Mathematics (2)	nothing	Second
	2	Leadership and Educational Administration	nothing	Second
2	1	Curriculums and school books	nothing	Second
	1	Teaching thinking	nothing	Second
	1	English language	nothing	Second
	1	Baath regime crimes in Iraq	nothing	Second
	1	Arabic	nothing	Second
2	3	Atomic physics	nothing	Third
	3	thermodynamics	nothing	Third
2	3	Electronics	nothing	Third
	3	Advanced Mechanics	nothing	Third
	2	Complex functions	nothing	Third
	2	Counseling and mental health	nothing	Third
	2	Curricula and teaching methods	nothing	Third
	2	elective subject	nothing	Third
2	3	nuclear physics	nothing	Fourth
	2	Laser Physics	nothing	Fourth
	3	Solid State Physics	nothing	Fourth
	3	quantum mechanics	nothing	Fourth
	3	electromagnetic fields	nothing	Fourth
	2	Measurement and Evaluation	nothing	Fourth
	2	View and apply	nothing	Fourth
	2	Research project	nothing	Fourth
2		Educational Laboratory	nothing	Fourth

8. Expected learning outcomes of the program

A - Knowledge

A1-To acquireThe student**Knowledge of physics and its branches**
throughTrack**development**History of physics, definition of its most important terms and concepts, and the foundations on which it was built**Modern theories**Its nature and the basics of physics in its various branches and description**Methods of data analysis and interpretation in physics.**

A2-identificationThe student**In the fields of applied physics** Describe the integration of physics with other sciences**It also includes integration between the various branches of**

physics, an explanation of the applications of physics in human daily life, the foundations for solving its problems, and an introduction to the ethics of scientific research in physics.

A3-Introducing students to the theoretical basis of the operation of laboratory equipment and physical measuring devices through strengtheningThe practical side for students throughConducting practical experiments in the laboratory andDesign and presentation of scientific and technical reports and selection Appropriate methods for studying physics topics, how to address them, and designing devices, tools, and models necessary to simplify concepts in physics andDefinition ofApplying security and safety rules when conducting practical experiments in physics laboratories and others, and knowing the most important procedures that must be taken in emergency and crisis situations.knowledgeScientific methods to preserve the environment and achieve sustainable development.And knowledgeSoftware and information resources to enhance laboratory work, data analysis, and interpretation of results.

A4-thatThe student knows the methods of teaching physics at all levels.And the sciences that help explain the development of human personality during the stages of growth, throughsupplyStudents with the necessary information aboutStrategies and methodsAnd teaching methods, andTo define skillsTeaching such as planning, implementation, evaluation and time management.

B - Skills

B1- LinkingBetween theoretical and practical aspects in the fields ofthephysics DifferentHow to DealingWith laboratory equipment used instudy theViziApplied Science,Mental skills include choosing the methods and techniques needed to interpret laws and equations and explain them graphically, as well as interpreting different scientific methods, choosing the best method to address scientific issues and problems, and analyzing qualitative and quantitative data and information using available evidence and proof.

B2 - Auditory skills represented by his ability to listen to lectures and understand the topics they revolve around while attending various scientific activities and events such as conferences, symposia, discussion groups, seminars, workshops, training, qualification and development courses, and linking that to the foundations, concepts and principles he learned during his years of study in order to be able to comprehend and realize the goals and objectives that can be achieved through his attendance at such activities and events.

B3 - Visual skills represented by his ability to recognize the foundations, concepts, and principles behind the observations and notes he sees in the surrounding natural and industrial environments, devices, tools, and systems common in daily life.Collecting and taking notes and preparing reportsTo be able toEmploying it and linking it to the theoretical aspect during study and after graduation.

B 4 -StrengtheningpainHaratwhich supports the professional development of physics teachers in the learning methodAnd enrichmentThe fieldEducational in the field of discovering the latest digital technologies, which opens up multiple horizons For knowledgeAnd adapt it to the learner's needs and learning styles.m through training onGeneral skills, represented by appreciating the need for continuous development through various methods, such as self-learning and...NEngaging in professional learning communities, working effectively within a team and communicating effectively with

colleagues in the school community, parents, and stakeholders to create a safe and supportive learning environment for the comprehensive development of learners. Dealing positively with the pressures of the teaching profession, communicating in their native language and foreign languages to participate in researching general community issues and proposing solutions at the local, national, regional, and international levels.

C - Values

A1- Strengthening practice Scientific, inductive, deductive, and logical thinking For students and development Initiative Innovative and thinking Creative Through planning and practicing scientific and educational activities, effectively employing modern technology.

Part 2 - Reinforcement Citizenship and responsibility through Participation By working as a team to succeed in his career, and by sound ethical behavior and communication to Effective Between themselves and developments spirit Team, discussion and positive dialogue and respect Freedom of expression, thought and creativity for others Based on the student's cultural identity.

A3 - Encouraging the spirit of learning and self-development importance Lifelong learning through Continuous access to the outputs of physicists and Professional development and practical training Which ensures Continuous development and improvement For the student

A4 - Strengthening A You will take A M Correct educational and psychological methods of dealing within educational and teaching institutions he the job Honestly and objectively through practice Professional and ethical academic behavior as a supreme value By adhering to the ethics of the teaching profession.

9. Teaching and learning strategies

1- Giving theoretical lectures and conducting practical experiments.

2- Dialogue and discussion style and problem solving.

3- Brainstorming.

4- E-learning

5- Distributing students into groups to complete specific tasks. Through cooperative education

10. Evaluation methods

pious Ym through theoretical exams Editorial Daily and monthly

Evaluation M Through practical exams and reports

Evaluation M By watching and applying

Evaluation through discussion and dialogue

Evaluation through electronic tests

Evaluation through final theoretical and practical examinations

11. Faculty							
Faculty members							
Faculty preparation		Special requirements/skills (if any)		Specialization		Academic rank	Instructor's name
lecturer	angel			private	general		
	Yes			Molecular Physics and Lasers	Physics	Mr	Mohammed Abdel Sattar Saleh
	Yes			Lasers and Optoelectronics	Engineering	Mr	Adi Atta Hammadi
	Yes			nuclear physics	Physics	assistant professor	Star Mohammed Alawi
	Yes			Contemporary History of Iraq	the date	assistant professor	Zeina Jamil Rahim
	Yes			Materials Physics	Physics	teacher	Adi Hamid Ahmed
	Yes			Civil Engineering	Engineering	teacher	Mohammed Tariq Jameel
	Yes			Nuclear and Environmental Physics	Physics	teacher	Raghad Imad Mahmoud
	Yes			Medical Physics	Physics	teacher	Obaida Amer Abdul Hussein
	Yes			Islamic economics	Islamic sciences	teacher	Karim Abboud's roses
	Yes			Nuclear and Environmental Physics	Physics	teacher	Shorouk Saad Abbas
	Yes			Solid State and Materials Physics	Physics	teacher	Zahraa Abbas Rashid Hamoud
	Yes			Materials Physics	Physics	teacher	Mais Mohammed Salim
	Yes			Materials Physics	Physics	teacher	Wissam Abdullah Al-

							Toun
	Yes			Astronomy and Space	Astrophysics	teacher	Haider Ghaleb Fahd
	Yes			Solid State and Materials Physics	Physics	Assistant Professor	Sohaib Sabah Ahmed
	Yes			nuclear physics	Physics	Assistant Professor	Hanan Jamil Mustafa
	Yes			Materials Physics	Physics	Assistant Professor	Rand Basem Lotfy
	Yes			molecular and theoretical physics	Physics	Assistant Professor	Nora Mohammed Salim
	Yes			Solid State and Materials Physics	Physics	Assistant Professor	Hawraa Khalaf Ayeed
	Yes			Atomic physics	Physics	Assistant Professor	Karim Suhail Najm
	Yes			Solid State and Materials Physics	Physics	Assistant Professor	Mohammed Abdullah Yassin
	Yes			molecular physics	Physics	Assistant Professor	Sura Sami Jamil
	Yes			molecular and theoretical physics	Physics	Assistant Professor	Mohammed Khalil Ibrahim

Professional development
Orientation of new faculty members
Regular in-person and online meetings are held to orient new, visiting, full-time, and part-time faculty members at the department level.
Professional development for faculty members
Workshops, seminars, discussion groups, and training courses are approved, as are annual curriculum plans that include proposals for developing and updating curricula, in addition to community services provided by instructors in other educational and governmental institutions.

12. Acceptance criteria
Admission is according to standards set by the Ministry of Higher Education and Scientific Research in terms of determining the admission ceiling and the number of students. Accepted.

13. The most important sources of information about the program
• Vision, mission and objectives of the department. • Guide to the courses approved by the Deans' Committees of the Faculties of Education. • Twinning of Iraqi universities.

14. Program Development Plan
Through self-assessment of program accreditation and preparation of an improvement plan to fill the approved program gaps in the department in order to obtain program accreditation from the Ministry of Higher Education and Scientific Research.

Skills Chartprogram															
Required learning outcomes of the program															
values				Skills				The oneRaffa				Essential or optional?	Course name	Cour se code	Year/Level
A4	Part 3	Part 2	Part 1	B4	B3	B2	B1	A4	A3	A2	A1				
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	Mechanics		First
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	Electricity and Magnetism (1)		
	✓		✓		✓	✓	✓		✓	✓	✓	essential	Heat and properties of matter		
	✓		✓		✓	✓	✓			✓	✓	essential	Mathematics (1)		
	✓	✓	✓		✓	✓			✓	✓		essential	Calculators (1)		
✓	✓	✓	✓	✓	✓	✓		✓				essential	Educational Psychology		
✓	✓	✓	✓	✓	✓	✓		✓				essential	Foundations of education		
			✓		✓	✓		✓				essential	Arabic		
✓	✓	✓	-			✓		✓				essential	Human rights		

													and democracy		Second
✓	✓	✓				✓		✓				essential	Islamic culture		
			✓			✓				✓		essential	English language		
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	Optics		
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	Electricity and Magnetism (2)		
	✓		✓		✓	✓	✓		✓	✓	✓	essential	Principles of Astronomy		
	✓		✓		✓	✓	✓		✓	✓	✓	essential	Sound and wave motion		
	✓		✓		✓	✓			✓	✓		essential	Calculators (2)		
	✓		✓			✓				✓		essential	Mathematics (2)		
✓	✓	✓	✓	✓	✓	✓		✓				essential	Secondary Education and Educational Administration		
✓	✓	✓	✓	✓		✓		✓				essential	developmental psychology		
✓	✓	✓	✓		✓	✓		✓	✓			essential	Scientific research methodology		
	✓		✓			✓				✓		essential	Scientific miracle		

			✓			✓				✓		essential	English language		
	✓	✓	✓			✓		✓				essential	Arabic		
✓		✓				✓		✓				essential	Baath Party crimes		
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	Atomic physics		Third
	✓		✓		✓	✓	✓		✓	✓	✓	essential	thermodynamics		
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	Electronics		
	✓		✓		✓	✓	✓		✓	✓	✓	essential	Advanced Mechanics		
	✓		✓		✓	✓				✓		essential	Complex functions		
✓	✓	✓	✓	✓	✓	✓		✓				essential	Counseling and mental health		
✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		essential	Curricula and teaching methods		
	✓		✓		✓	✓	✓		✓	✓	✓	essential	elective subject		
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	nuclear physics		Fourth
	✓		✓		✓	✓	✓		✓	✓	✓	essential	Laser		
	✓		✓		✓	✓	✓		✓	✓	✓	essential	Solid State Physics		

	✓		✓		✓	✓	✓			✓	✓	essential	quantum mechanics		
	✓		✓		✓	✓	✓		✓	✓	✓	essential	electromagnetism		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		essential	Measurement and Evaluation		
✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		essential	View and apply		
	✓	✓	✓		✓	✓	✓		✓	✓	✓	essential	Research project		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	essential	educational laboratory		

- Please tick the boxes corresponding to the individual learning outcomes of the programme being assessed.

1. Course name:					
Mechanics					
2. codeCourse:					
nothing					
3. the chapter /Year:					
2025-2026					
4. Date preparedDescription:					
5. AAvailable attendance forms:					
Interview and hall					
6. Number of study hours (total) / Number of units (total):					
6/7					
7. Course Instructor Name(If more than one name is mentioned):					
the name:Dr. Muhammad Tariq Jameel					
Email: Email: mohammed.t.jameel@aliraqia.edu.iq					
8. Course objectives					
It is usually decided by theYCANIC, the first course given to new physics students after the introductory physics courses, because the concepts ofYyourANick and its basic principles play an important role in understanding other courses, such as optics, electronics, atomic and nuclear physics, quantum mechanics, and other physics courses. Therefore, the goal of this course was to develop and raise the level of the student's scientific abilities in order to understand and comprehend the subsequent physics courses they will study.				Course objectives	
9. Teaching and learning strategies					
Lectures, discussions, and assigning students to prepare working papers on the course topics, in addition to Oral and written tests, assignments, and surprise tests					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	the introduction ,Systemsunits,Dimensionsvectors	The student should get to know Systemsunits,Dimensionsvectors	3	1
Assignments and tests	Lecture and discussion	Numerical quantities, operations on vectors (addition - subtraction)	The student is able to conductOperations on vectors (addition - subtraction))	3	2
Assignments and tests	Lecture and discussion	Multiplication of binary and ternary vectors. Applications of vectors. Problems.	The student is able to conductOperationsonMultiplying Binary and Triangular Vectors Applications of Vectors	3	3
Assignments and tests	Lecture and discussion	Motion in one dimension, position, rate of velocity, speedThe vessel, hasten and hastenThe instant	Knowing the conceptMotion in one dimension, position, rate of velocity, speedThe vessel, hasten and hastenThe instant	3	4
Assignments and tests	Lecture and discussion	Free fall, applications of motion, problems	Knowing the difference between linear motion and free fall due to the effect of gravity	3	5
Assignme	Lecture	Motion in two dimensions	The student learns to combine	3	6

nts and tests	and discussion	(plane), motion in three dimensionsDimensions,Meaning of immediate acceleration	linear motion and free fall.		
Assignme nts and tests	Lecture and discussion	missile movement,Projectile motion analysis, applications of projectile motion, problems	Understanding projectile motion and its applications	3	7
Assignme nts and tests	Lecture and discussion	uniform circular motion, centripetal acceleration	Recognizing the motion in two directions on a circular path and the resulting centripetal and tangential acceleration	3	8
Assignme nts and tests	Lecture and discussion	Centripetal force, physics applications of centripetal force, problems	Understanding centripetal force and some of its sources	3	9
Assignme nts and tests	Lecture and discussion	Newton's three laws, mass and weightand devicesMeasurement	Learn Newton's laws where the student understands the difference between the acceleration of a body in a free body diagram and the acceleration of a system of bodies	3	10
Assignme nts and tests	Lecture and discussion	FrictionAl-Sharoui-sliding), laws of friction	Understanding static and kinetic friction and the difference between them	3	11
Assignme nts and tests	Lecture and discussion	QuestionsQuestions, applications on force, Tod machine	Learn how to use Newton's laws in some practical applications.	3	12
Assignme nts and tests	Lecture and discussion	Center of mass and balance, elasticity, work with a constant force	Learn to find the center of mass for objects of different shapes, individually and within a system.	3	13
Assignme nts and tests	Lecture and discussion	Work done by a variable force, work done by elasticity	Learn how to find the work done by concentrated, distributed, and elastic forces and the relationship between the direction of forces, displacement, and work.	3	14
Assignme nts and tests	Lecture and discussion	potential energy, kinetic energy, power,QuestionsSports	Identify the potential energy stored in objects (gravity and elasticity) and its transformation into kinetic energy and resulting power.	3	15
Assignme nts and tests	Lecture and discussion	Work in rotational motion, rotational kinetic energy	Learn how to find the work done on a moving body around a center, as well as the energy and their relationship to circular angles and angular velocity.	3	16
Assignme nts and tests	Lecture and discussion	Inertia, Newton's laws of rotational motion	Understanding the inertia of objects and their relationship to mass and angular acceleration according to Newton's laws	3	17
Assignme nts and tests	Lecture and discussion	The relationship between motion and rotational variables, questions and applications	Understand the relationship between angles, mass, angular velocity, angular rotation, and	3	18

			center of mass.		
Assignments and tests	Lecture and discussion	Find moment of inertia of some bodies (cylinder, ball, ring)	Learn the geometric method of finding moment of inertia of some bodies (cylinder, ball, ring)	3	19
Assignments and tests	Lecture and discussion	Linear momentum and impulse, law of conservation of momentum in linear motion	Knowing the concept Linear momentum and impulse, law of conservation of momentum in linear motion	3	20
Assignments and tests	Lecture and discussion	Angular momentum and impulse, the relationship between momentum and impulse in linear and rotational motion	Understanding the physical and mathematical relationship Between momentum and impulse in linear and rotational motion	3	21
Assignments and tests	Lecture and discussion	energy bodies rolling, collision meaning	Recognizing energy in rolling objects and collisions between objects	3	22
Assignments and tests	Lecture and discussion	Elastic collisions in one dimension, non-elastic collisions Flexible in one dimension	Know and distinguish between elastic and inelastic collisions in one dimension.	3	23
Assignments and tests	Lecture and discussion	Collisions in two dimensions, Questions and discussion	Understand and distinguish between elastic and inelastic collisions in two dimensions.	3	24

11. Course Evaluation

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

12. Learning and teaching resources

University Physics 1, Alonso Finn	Required textbooks (methodology if any)
Classical Mechanics and Properties of Matter, Ghazi Al-Qaisi	Main references (sources)
Iraqi Journal of Physics, Iraqi Journal of Science, Al-Ustadh Journal, Journal of the International Institute of Physics, Journal of the American Physical Society	Recommended supporting books and references (scientific journals, reports...)
www.physics.com www.science.com www.physicstoday.com www.modernphysics.com	Electronic references, websites

1. Course name					
Electricity and Magnetism 1					
2. code The decision					
3. the chapter /year					
2025-2026					
4. Date prepared Description					
5. A Available attendance forms					
Interview/Hall					
6. Number of study hours (total) / Number of units (total)					
6/7					
7. Course Instructor Name (If more than one name is mentioned)					
Name: Dr. Sohaib Sabah Ahmed Email:sohaib.ahmed@aliraqia.edu.iq					
8. Course objectives					
• The course aims to develop the student's ability to understand and comprehend the phenomena of static fields of electricity and magnetism.. • Use these concepts to explain the operation of electrical appliances.. • Building a foundation for absorbing subsequent related courses.					Course objectives
9. Teaching and learning strategies					
• Lectures, discussions, and assigning students to prepare papers on the course topics. • Oral and written tests, assignments, and surprise tests					Strategy
10. Course structure					
Evaluati on method	Learni ng metho d	Name of unit or topic	Required learning outcomes	watch es	we ek
Assignm ents and tests	Lectu re and discuss ion	installationcorn, charges electrical,matter and charge, Law of conservation of charge	For the student to learninstallationcorn, charges electrical	3	1
Assign ments and tests	Lectu re and discus sion	Charging by conduction, conductors, insulators and semiconductorsconnector s,Coulomb's law	For the student to learnConductors, insulators and semiconductorsconnector s,Coulomb's law	3	2
Assign ments and tests	Lectu re and discus sion	Investigation of Coulomb's law, the atomic nucleus in Rutherford's experiment, unit systems.	For the student to learnCoulomb's law verification	3	3
Assign ments	Lectu re and	fieldElectrician, Accountfield	For the student to learnfieldElectrician,	3	4

and tests	discus sion	strengthElectrician,bipola r field	Accountfield strengthelectrician		
Assign ments and tests	Lectu re and discus sion	First month exam10%	First month exam	3	5
Assign ments and tests	Lectu re and discus sion	field for a continuous chargedistribution,lines of forceelectrical,Gauss's law	For the student to learnlines of forceelectrical,Gauss's law	3	6
Assign ments and tests	Lectu re and discus sion	Conclusions from Gauss's law regarding the field outside a charged conductor, the field of a charged plane and infinite	For the student to learnfield outside a charged conductor	3	7
Assign ments and tests	Lectu re and discus sion	electric potential energy, electric potential, electric potential difference	For the student to learnelectric potential energy, electric potential, electric potential difference	3	8
Assign ments and tests	Lectu re and discus sion	Potential of a charged conducting ball, energy rule, equipotential surfaces	For the student to learnpotential of a charged conducting ball	3	9
Assign ments and tests	Lectu re and discus sion	Voltage gradient, charge divisions by conductors, Van de Graaff generator.	For the student to learnVoltage gradient, charge divisions by conductors, Van de Graaff generator	3	10
Assign ments and tests	Lectu re and discus sion	Second month exam	Second month exam	3	11
Assign ments and tests	Lectu re and discus sion	electrical capacitance, electrical capacitors, parallel plate capacitor	For the student to learnelectrical capacity	3	12
Assign ments and tests	Lectu re and discus sion	Connecting capacitors in series and parallel, the effect of dielectrics on capacitance, polarization vector	For the student to learnConnecting capacitors in series and parallel, the effect of insulators onstriving	3	13
Assign ments and tests	Lectu re and discus sion	Electrical displacement vector, energy stored in capacitors, dielectric coefficient and permeability, partial theory of different charges on insulators.	For the student to learnElectrical displacement vector, energy stored in capacitors	3	14

Assignments and tests	Lecture and discussion	Current, complete circuit, resistivity, resistance and Ohm's law	For the student to learn current, complete circuit	3	15
Assignments and tests	Lecture and discussion	Standard, fixed and variable resistance, resistance calculation, resistance change with temperature	For the student to learn Standard, fixed and variable resistance	3	16
Assignments and tests	Lecture and discussion	Current measurement, potential difference and rectifier, current density, Winston bridge, current rate and its effective value.	For the student to learn Measurement of current, potential difference and rectification, current density	3	17
Assignments and tests	Lecture and discussion	Electromotive force, electric circuit equation, potential difference between points in an electric circuit, potential difference at the ends of an electromotive force site	For the student to learn Electromotive force, electric circuit equation	3	18
Assignments and tests	Lecture and discussion	Terminal potential of an electromotive force station, voltage distributor, connection of resistors in series, networks containing electromotive force stations, Kirchhoff's laws	For the student to learn The effort of the limbs to generate an electromotive force	3	19
Assignments and tests	Lecture and discussion	Power, measure of power and energy.	For the student to learn ability	3	20
Assignments and tests	Lecture and discussion	Third month exam	Third month exam	3	21
Assignments and tests	Lecture and discussion	Electrode potential, electric cells, Daniell cell, non-conductive cell, polarization, dry cell, lead storage battery, standard cells, electrolysis, water electrolysis	For the student to learn electrode potential, electrolytic cells, Daniell cell	3	22
Assignments and tests	Lecture and discussion	Thermoelectric energy, Thomson's electromotive force, Lelaitaire's electromotive force	For the student to learn thermoelectric energy	3	23

Assignments and tests	Lecture and discussion	Seebeck's electromotive force, Thomson effect, temperature dependence of electromotive force	For the student to learn Electromotive force of Seebeck	3	24
Assignments and tests	Lecture and discussion	The thermocouple, basic equation of thermocouple and its applications.	For the student to learn The thermocouple	3	25
Assignments and tests	Lecture and discussion	Seebeck's electromotive force, Thomson effect	For the student to learn Electromotive force of Seebeck	3	26
Assignments and tests	Lecture and discussion	Magnetism, magnetic field, induction, lines of induction, magnetic flux, orbits of charges in magnetic fields	For the student to learn magnetism, magnetic field	3	27
Assignments and tests	Lecture and discussion	Cyclotron, force on a current-carrying conductor, force and insulation on a perfect rectangular circuit - in a circle and in a solenoid	For the student to learn cyclotron	3	28
Assignments and tests	Lecture and discussion	Magnetic moment acting on electric current	For the student to learn Magnetic moment acting on electric current	3	29
Assignments and tests	Lecture and discussion	Fourth month exam	Fourth month exam	3	30
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
			Required textbooks (methodology if any)		
Electricity and Magnetism, Ghazi Yassin Al-Qaisi			Main references (sources)		
			Recommended supporting books and references (scientific journals, reports...)		
			Electronic references, websites		

1. Course name					
Heat and properties of matter					
2. codeCourse:					
3. the chapter /year					
2025-2026					
4. Date preparedDescription					
5. AAvailable attendance forms					
essential					
6. Number of study hours (total) / Number of units (total)					
2 hour/4 units					
7. Course Instructor Name(If more than one name is mentioned)					
Name: M.M. Hawra Khalaf Ayed Email:hawraa.k.ayyed@aliraqia.edu.iq					
8. Course objectives					
• Concept studyHeat and properties of matterand its applications and laws (Pascal-Avocado) • Study the concept ofheat and temperature • Knowing the types of thermometers and the properties of matter • Study of thermal and electrical properties • knowledgeconditionPlasma and mechanical properties • Study of liquids and gases				Course objectives	
9. Teaching and learning strategies					
• Lecture or delivery strategy • TExchange opinions and talk between students when a specific question is asked, which allows for sharing of ideas. The teacher gives the students a short period of time to think and discuss with each other. • Conducting class tests individually and then giving the same test to students in groups. Small in order to give them room to discuss the answers given by each individual. After all this, Results are evaluated on an individual and group basis. • Practicing voting on suggested answers before knowing the correct answer gives students a chance to greater To learn by discussing the reason for his suggestion and how accurate and close it is to the correct answer. • Give students time out during the lecture to allow them to think about information they have learned. They receive it and then discuss it instead of being required to write a record everything they receive.				Strategy	
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Exams and	Lecture and	temperature	Student	6	1-3

assignments	discussion		understanding of temperature scales and types of thermal expansion and Mechanisms heat transfer		
Exams and assignments	Lecture and discussion	Specific heat and the first law of thermodynamics	Gain knowledge in the field of applying the first law of thermodynamics and the specific heat of materials	8	4-7
Exams and assignments	Lecture and discussion	gases	Gain knowledge in distinguishing between real gases and ideal gases and the laws related to them	6	8-10
Exams and assignments	Lecture and discussion	Liquids	Student understanding of the properties of fluids such as density, viscosity, surface tension, etc.	6	11-13
Exams and assignments	Lecture and discussion	mechanical properties	Gain knowledge in the field of mechanical properties of materials such as stress, strain, etc.	10	14-18
Exams and assignments	Lecture and discussion	Magnetic properties	Gain knowledge of the effect of temperature on the magnetic properties of materials.	8	19-22
Exams and assignments	Lecture and discussion	electrical properties	The student understands the electrical properties of materials, such as electric field, electrical conductivity, and the effect of temperature on them.	8	22-26
Exams and assignments	Lecture and discussion	Plasma	Knowing the fourth state of matter (plasma) and how to generate it	8	27-30
11. Course Evaluation					

The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.	
12. Learning and teaching resources	
Textbook and auxiliary books	Required textbooks (methodology if any)
-1 Heat and Properties of Matter: Written by Dr. Kazem Ahmed Mohammed 2-The Science and Engineering of Materials, thed Donald R. Askeland – Pradeep P. Phulé. Classification	Main references (sources)
1-Heat and Thermodynamics, Mark W. Zymansky. -2 Use the library and the Internet to obtain some Student information and abilities	Recommended supporting books and references (scientific journals, reports...)
-1. Heat and Properties of Matter PDF Al-Fareed Physics Website. 2. Properties of Matter and Heat Al-Noor Library Website. 3. Heat and Properties of Matter Al-Fareed Electronic Library.	Electronic references, websites

1. Course name					
Mathematics 1					
2. code The decision					
nothing					
3. the chapter /year					
2025-2026					
4. Date prepared Description					
5. A Available attendance forms					
Interview/Hall					
6. Number of study hours (total) / Number of units (total)					
3/6					
7. Course Instructor Name(If more than one name is mentioned)					
Name: Asst. Dr. Obaida Amer Abdul Hussein					
Email:					
8. Course objectives					
- Enabling students toGetKnowledge and understanding of the laws of differential and integral calculus. - Enabling students toGetKnowledge and understanding of types of mathematical functions. - Enabling students toGetKnowledge and understanding of how to solve mathematical problems related to physics. - To enable students to gain knowledge and understanding of the introduction of trigonometric functions.					Course objectives
9. Teaching and learning strategies					
- Lectures, discussions, and assigning students to prepare papers on the course topics. - Oral and written tests, assignments, and surprise tests					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	a. Coordinates for the Plan. b. the slope of a straight line.	Introducing the student to the types of axes, the slope of a line, the equation of a line, functions and graphing functions, and absolute value.	3	1
Assignments and tests	Lecture and discussion	a. Equation of a straight line b. Function and graphs c. absolute values	Introducing the student to the equation of a straight line and how to find the equation of a	3	2

			straight line, graphing functions, and absolute value.		
Assignments and tests	Lecture and discussion	Tangent lines and slopes of quadratic and cubic curves.	Definition of demand by tangent line and slope of curves for exponential functions	3	3
Assignments and tests	Lecture and discussion	a. The slope of the curve $y=f(x)$: Derivatives. b. Velocity and other rates of change	Introducing the student to the law of slope and its relationship to the derivative and applications of the derivative of speed.	3	4
Assignments and tests	Lecture and discussion	First month exam	First month exam	3	5
Assignments and tests	Lecture and discussion	Limits.	Introducing the student to the concept of goals and solving mathematical problems	3	6
Assignments and tests	Lecture and discussion	Infinity	Introducing the student to the concept of continuity of functions	3	7
Assignments and tests	Lecture and discussion	a. Polynomial functions and their Derivatives. b. Derivatives of Products, powers and quotes. c. Implicit Differentiation and fractional powers	Introducing the student to the concept of series functions and their derivatives	3	8
Assignments and tests	Lecture and discussion	a. Derivatives. b. Functions of the chain rule. c. Continuity	Introducing the student to the derivative, the chain rule, and the continuity test for functions with derivatives.	3	9
Assignments and tests	Lecture and discussion	a. Derivatives of trigonometric functions.	Introducing students to derivatives of	3	10

		Application of Derivatives	trigonometric functions and applications of derivatives		
Assignments and tests	Lecture and discussion	Second month exam	Second month exam	3	11
Assignments and tests	Lecture and discussion	the indefinite integral.	Introducing the student to integration and the relationship between integration and the area under the curve	3	12
Assignments and tests	Lecture and discussion	Applications of infinite integration.	Introducing the student to integration and the relationship between integration and the area under the curve	3	13
Assignments and tests	Lecture and discussion	Differentiation and integration of sines and cosines.	Introducing the student to integration and the relationship between integration and the area under the curve	3	14
Assignments and tests	Lecture and discussion	Area under the curve.	Introducing the student to integration and the relationship between integration and the area under the curve	3	15
Assignments and tests	Lecture and discussion	The definite integral.	Introducing the student to integration and the physical meaning of integration	3	16
Assignments and tests	Lecture and discussion	Area between two curves.	Introducing the student to integration and the physical meaning of	3	17

			integration		
Assignments and tests	Lecture and discussion	a. Basic Integration	Introducing the student to integration methods	3	18
Assignments and tests	Lecture and discussion	Integration by parts	Introducing the student to integration methods	3	19
Assignments and tests	Lecture and discussion	Products and powers of Trigonometric Functions.	Introducing the student to integration methods	3	20
Assignments and tests	Lecture and discussion	Even powers of sines and cosines.	Introducing the student to integration methods	3	21
Assignments and tests	Lecture and discussion	The integrations of Rational Function and partial Functions.	Introducing the student to the integration of rational functions and partial functions	3	22
Assignments and tests	Lecture and discussion	Third month exam	Third month exam	3	23
Assignments and tests	Lecture and discussion	Curves and equations.	Introducing the student to solid geometry and curves	3	24
Assignments and tests	Lecture and discussion	Tangent and normals.	Introducing the student to the tangent to a curve	3	25
Assignments and tests	Lecture and discussion	a. Distance between two points. b. The Circle.	Introducing the student to the distance between two points and the equation of a circle	3	26
Assignments and tests	Lecture and discussion	a. The polar coordinate system. b. Graphs of polar equations	Introducing the student to polar systems and graphing polar functions	3	27
Assignments and tests	Lecture and discussion	Polar Equations of the conic sections and other curves.	Introducing the student to polar systems and graphing polar	3	28

			functions		
Assignments and tests	Lecture and discussion	Integral in polar coordinates.	Introducing the student to polar systems and graphing polar functions	3	29
Assignments and tests	Lecture and discussion	Fourth month exam	Fourth month exam	3	30
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
Calculus and Analytic geometry by George B. Thomas 7th Edition 2000		Required textbooks (methodology if any)			
George B. Thomas, Jr., Maurice D. Weir, Joel Hass et al. - Thomas Calculus in SI Units (2016, Pearson)		Main references (sources)			
Schaum's Series of Solved Problems in Calculus		Recommended supporting books and references (scientific journals, reports...)			
		Electronic references, websites			

Course name	
Developmental and Educational Psychology/stageFirst	
Course code	
nothing	
semester/year	
2025-2026	
Date this description was prepared	
Available attendance forms	
My presence	
Number of study hours (total) / Number of units (total)	
(60) hours - (120) lonliness	
Name of the course administrator (if more than one name is mentioned)	
the name:millimeter.Miami Ali Dawood SalmanAyemYell	
miami.a.dawood@aliraqia.edu.iq/	
Course objectives	
1. Introducing the student to the meaning of educational psychology 2. Enriching the student with information on how to deal with normal behavior 3. The student should become familiar with the concept of developmental psychology and its areas of interest and study. 4. The student should understand the meaning of growth through various developmental changes: intellectual, physical, functional, and emotional.	Course objectives

5. Describe psychological processes at different ages and reveal the characteristics of the changes that occur at each age. 6. Explaining the phenomenon of temporal changes in human behavior and revealing the factors and variables that determine this change. 7. Reaching growth standards at every stage. 8. Identifying the factors affecting the growth process 9. Ability to develop age-appropriate curricula and syllabuses Increased predictability in the area of growth and development. 10. The student should become familiar with the concept of professional ethics.					
Teaching and learning strategies					
- Lecture method: explaining the material and ensuring that the information reaches the learners. - Dialogue method: by asking questions, encouraging learners to express themselves, communicate, discuss, and give examples. - Guidance and counseling style. Group discussion method, and preparing short reports on some vague topics					Strategy
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Daily tests	theoretical	General and developmental psychology, its types, its relationship with other sciences, and their importance	Cognitive objectives specific to the lecture title	2	the first
Daily tests	theoretical	Definition of the embryonic stage, childhood, and old age	Cognitive objectives specific to the lecture title	2	the second
Daily tests	theoretical	The meaning of growth and general principles of growth	Cognitive objectives specific to the lecture title	2	the third
Daily tests	theoretical	Stages of growth	Cognitive objectives specific to the lecture title	2	Fourth
Daily tests	theoretical	Factors affecting growth	Cognitive	2	Fifth

			objectives specific to the lecture title		
Daily tests	theoretical	Genetic factors Environmental factors	Cognitive objectives specific to the lecture title	2	Sixth
Daily tests	theoretical	Research methods in psychology	Cognitive objectives specific to the lecture title	2	Seventh
First semester exam	First semester exam	First semester exam	First semester exam	2	The eighth
Daily tests	theoretical	Information collection methods and research designs	Cognitive objectives specific to the lecture title	2	Ninth
Daily tests	theoretical	Types of research (Experimental-Relational)	Cognitive objectives specific to the lecture title	2	tenth
Daily tests	theoretical	Childhood-Definition, importance and stages	Cognitive objectives specific to the lecture title	2	eleventh
Daily tests	theoretical	Physical growth, mental and language development	Cognitive objectives specific to the lecture title	2	twelfth
Daily tests	theoretical	Social and emotional development	Cognitive objectives specific to the lecture title	2	thirteenth
Daily tests	theoretical	Moral development	Cognitive objectives specific to the lecture title	2	fourteenth
Daily tests	monthly exam	Second semester exam	Second monthly exam	2	fifteenth
School application	School application	The role of social institutions in upbringing	School application	2	sixteenth
Daily exam	Daily exam	Family/School	School application	2	seventeenth
School application	School application	Peers/Media	School application	2	eighteenth

School application	School application	Adolescent and Society Adolescent and Family	School application	2	nineteenth
School application	School application	Teenager and school Teenager and peers	School application	2	twenty
Daily tests	theoretical	Teenagers and Careers / The Importance of Work in Teenagers' Lives	Cognitive objectives specific to the lecture title	2	twenty-one
Daily tests	theoretical	The importance of choosing a career and the factors affecting it	Cognitive objectives specific to the lecture title	2	twenty-second
Daily tests	theoretical	Teenager's compatibility with work	Cognitive objectives specific to the lecture title	2	twenty-third
Second semester exam	Second semester exam	Second semester exam	Second semester exam	2	twenty-fourth
Daily tests	theoretical	Adolescents' tendencies and interests/the importance of tendencies and interests	Cognitive objectives specific to the lecture title	2	twenty-fifth
Daily tests	theoretical	Sources of acquisition of trends, tendencies, and influencing factors	Cognitive objectives specific to the lecture title	2	twenty-sixth
Daily tests	theoretical	Adolescent problems: academic delay	Cognitive objectives specific to the lecture title	2	twenty-seventh
Daily tests	theoretical	aggressive behavior adolescent delinquency	Cognitive objectives specific to the lecture title	2	twenty-eighth
Daily tests	theoretical	The concept of professional ethics among teachers and instructors	Cognitive objectives specific to the lecture title	2	twenty-ninth

Daily tests	Second semester exam	Second semester exam	Second semester exam	2	thirty
Course Evaluation					
1. Tests: (written, oral) 2. Preparing daily assignments. 3. Writing research papers.					
Learning and teaching resources					
Educational Psychology (Al-Azirjawi) Fundamentals of Evolutionary Psychology, written by Shafiq Falah Hassan, 1989			Required textbooks (methodology if any)		
Developmental Theories: Advanced Developmental Psychology / Written by Muhammad Al-Sayyid Abd Al-Rahman 2001			Main references (sources)		
			Recommended supporting books and references (scientific journals, reports, etc.)		
			Electronic references, websites		

1. Course name					
Computer 1					
2. codeThe decision nothing					
3. the chapter /year 2025-2026					
4. Date preparedDescription					
5. AAAvailable attendance forms Interview/Hall					
6. Number of study hours (total) / Number of units (total) 2/1					
7. Course Instructor Name(If more than one name is mentioned) the name: Dr.Karim Suhail Najm Email:.iq					
8. Course objectives					
• Student definitionComputer and its parts (input, output, and control units) • Student definitionOperating systemMicrosoftWindows • Skill developmentStudent in use of the programMicrosoftWord.				Course objectives	
9. Teaching and learning strategies					
• Lecture or delivery strategy • Exchange of opinions and talk between students when a specific question is asked, which allows for sharing of ideas. The teacher gives the students a short period of time to think and discuss with each other. • Conducting class tests individually and then giving the same test to students in groups. Small in order to give them room to discuss the answers given by each individual. After all this, • Results are evaluated on an individual and group basis. • Practicing voting on suggested answers before knowing the correct answer gives studentsgreater opportunityTo learn by discussing the reason for his suggestion and how accurate and close it is to the correct answer. • Give students time out during the lecture to allow them to think about the information they have learned. They receive it and then discuss it instead of being required to write and record everything they receive.				Strategy	
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Exams and assignments	Theoretical lecture	Microsoft Office system and computer operation	Student definitionOperating systemMicrosoftWindows	8	1-4
Exams and assignment	Theoretical lecture	Introduction to Word	Student definitionforWord	8	5-8

s			program		
Exams and assignments	Theoretical lecture	Printing in Word and typesetting	Student definitionforWord program	8	9-11
Exams and assignments	Theoretical lecture	Add a table	Teaching the student to add the table	8	12-15
Exams and assignments	Theoretical lecture	Add a photo	Teaching the student to add the image	8	16-20
Exams and assignments	Theoretical lecture	Add charts from Excel	Teaching the student to adddrawing diagrams	8	21-25
Exams and assignments	Theoretical lecture	Writing symbols	Student educationWriting symbols	8	26-28
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
		Required textbooks (methodology if any)			
		Main references (sources)			
		Recommended supporting books and references (scientific journals, reports...)			
		Electronic references, websites			

1. Course name					
democracy and Human rights					
2. code The decision					
nothing					
3. the chapter /year					
2025-2026					
4. Date prepared Description					
5. A Available attendance forms					
Interview/Hall					
6. Number of study hours (total) / Number of units (total)					
1/2					
7. Course Instructor Name (If more than one name is mentioned)					
the name:Asst. Prof. Dr. Sattar Mohammed Alawi					
Email: sattarmohmed009@gmail.com					
8. Course objectives					
• To understand the term and concept of freedom in language, terminology and law, and the controls of public and personal freedom. • Learning about freedom in ancient civilizations and the Middle Ages. • Learn about freedom and liberty in America and modern history. • Understand the dialectical relationship between freedom, rights, and democracy. • Learning about human rights and their recognition in ancient civilizations, and Islam's position on them. • Learn the terms and concepts of international human rights law, and the contradiction between globalization and human rights. • Learn about democracy, its forms and Islam's position on it. • Learn about educational democracy, socialization, and modern democracy.					Course objectives
9. Teaching and learning strategies					
• Lectures, discussions, and assigning students to prepare papers on the course topics. • Oral and written tests, assignments, and surprise tests					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Daily tests	theoretical	Human rights and democracy	Freedom: its concept and controls, freedom among Arabs and Muslims, and controls of freedom in Islam.	4	1-4
Daily tests	theoretical	Human rights and democracy	The concept of freedom in ancient liberties, and the stages of its development	4	5-8

			in the Middle Ages and modern times		
Daily tests	theoretical	Human rights and democracy	Freedom in America, the Social Contract Theory, and the Separation of Powers	4	9-11
Daily tests	theoretical	Human rights and democracy	The dialectical relationship between freedom, the recognition of rights, and democracy	4	12-15
Daily tests	theoretical	Human rights and democracy	Human rights and their characteristics, and human rights in ancient civilizations	4	16-20
Daily tests	theoretical	Human rights and democracy	The concept of human rights in Islam and its position on them	4	21-25
Daily tests	theoretical	Human rights and democracy	Terms and concepts of international human rights law, the universality of human rights and their manifestations	4	26-28
Daily tests	theoretical	Human rights and democracy	Democracy, its concept and forms, Islam's position on it, the concept of democracy in learning and social upbringing, and models of modern democracies and their modern forms.	4	29-30
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily					

preparation, daily, oral, monthly and written exams, reports, etc.	
12. Learning and teaching resources	
bookMy methodology: RightsHuman, Democracy and Children's Rights (co-authored) for. Secondary sources: BookFreedom:Prepared and translated by Mahmoud Al-Hilali and Aziz Lazraq T. Recommended books and references: Journal of Human Rights Issues issued by the Arab Organization for Human Rights.	Required textbooks (methodology if any)
	Main references (sources)
	Recommended supporting books and references (scientific journals, reports...)
United Nations website: peace and dignity and equality on planet Enjoy Good health	Electronic references, websites

1. Course Name					
English					
2. CourseCode:					
3. Semester /Year					
Year					
4. DdescriptionPreparation Date					
2025-2026					
5. Available Attendance Forms					
6. Number of Credit Hours (Total) / Number of Units (Total)					
30hour/2unit					
7. Course administrator's name(mention all,if more than one name)					
Name:Noora Mohammed Saleem					
Email: Noora.m.saleem@aliraqia.edu.iq					
8. Course Objectives					
Course Objectives		• Teaching reading and translation. • Study the rules of the English language and how to write emails. • Teaching writing, punctuation, and additions.			
9. Teaching and learning strategies					
Strateg	• Lecture or delivery strategy • Exchanging opinions and talking among students when a specific question is asked, which gives sharing of ideas.The teacher gives the students a short period to think and dialogue among themselves. • Conducting class tests individually and then repeating the same test to the students the form of small student groups, in order to give them space to discuss the answers that come from each individual and after all that Results are evaluated between individual and group cases. • Practicing how to vote on the proposed answers before knowing the correct answer gives students a greater opportunity learning by discussing the reason for his propo and how accurate it is and how close it is to the correct answer. • Giving students time out during the lecture in order to give them space to think abo the information. They receive it and then discuss it instead of being forced to write and write down everything they receive.				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
3	1	Achieving the course objectives	Reading external pieces and teaching translation	Theoretical lecture	Exams and preparing assignments
5	1	=	Writing and	=	=

			punctuation method.		
3	1	=	Add-ons	=	=
3	1	=	How to write an email.	=	=
3	1	=	English grammar (present simple)	=	=
5	1	=	(simple past)	=	=
4	1	=	(present continuous and future)	=	=
4	1	=	Connect two sentences using the if conditional.	=	=
4	1	=	. The University Journey: Overcoming Challenges and Embracing Campus Life	=	=
5	1	=	. From Chalkboards to Smart Boards: The Evolution of Learning with Technology	=	=

5	1	=	. A Sound Mind in a Sound Body	=	=
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.					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Methodical book and help books		
Electronic References, Websites					

1. Course name	
Optics	
2. code	
The decision	
3. the chapter /year	
2025-2026	
4. Date prepared	
Description	
5. AAvailable attendance forms	
Interview/Hall	
6. Number of study hours (total) / Number of units (total)	
5/7	
7. Course Instructor Name(If more than one name is mentioned)	
Name: M.M. Mohammed Abdullah Yassin Email:mohammed.a.yaseen@aliraqia.edu.i	
8. Course objectives	
Students learn about the importance of optics andnoKill her with physics top • Trying to understand the optical properties and what is related to the physics phenomenon and its physical principle. • Introduce students to how to use illustrative tools and devices. • Developing the scientific research aspect among students by identifying the visual phenomenon.Knowing its causes and how Its occurrence. • Enhancing students' cognitive abilities by linking the topic to visual phenomena. existing innature . • Developing the spirit of cooperation among students in the field of scientific research, which enhances their creative abilities.	Course objective Academi
9. Teaching and learning strategies	
Course outcomes, teaching, learning and assessment methods A- TheAKnowledge scorer ➤ Providing the student with knowledge ofnoOptical devices. ➤ Providing the student with a comprehensive knowledge of the physical principles related to the subject of optics. ➤ Providing the student with knowledge of optical elements such as lenses mirrors and prisms. B - AnoCourse Skills Top Scorer • theAUse anoExample of concepts related to the subject of optics and their application to integrated knowledge regarding Interpretation of scientific phenomena • AnoUse anoExample of educational tools available through anoInternet Teaching and learning methods • Dialogue • Discussion • Give examples • Information available viaInternet	Strategy

<u>Evaluation methods</u> • Exams monthly • Daily activity For students Daily preparation and recording of participation of each student. the A Conscious and value-based goal scorer - Developing the spirit of cooperation among students in deducing physical concepts related to the subject of optics - Documenting the links between students and teachers during Constructive interaction between them regarding education - Preparing a teaching staff capable of carrying out teaching tasks Completely face <u>Teaching and learning methods</u> • The blackboard Smart and white • The binder • Source of the book of optics • Videos related to the topic are displayed on the smart board. D - General and transferable qualification skills (skills) Other Related to employability and personal development. - Subtraction Questions During the lecture, to link the practical side with the theoretical side. - Linking the lecture to engineering and technological applications. - Linking visual concepts to everyday phenomena known to the student					
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	Th e A Aat	week
Assignments and tests	Lecture and discussion	Introduction to Optics- The nature of light electromagnetic spectrum	Providing students with knowledge In concepts Basic For optics	3	1
Assignments and tests	Lecture and discussion	Reflection and refraction at flat surfaces Laws of reflection Types of reflection - Snell's law - Refraction -	Gaining knowledge in Concepts unless Political The phenomena of reflection and refraction and the laws governing these phenomena	3	2
Assignments and tests	Lecture and discussion	Proving the laws of reflection and refraction-Critical Angle - Total Internal Reflection-optical fibers	Gaining knowledge in Concepts unless Political The phenomena of reflection and	3	3

			refraction and the laws governing these phenomena		
		First month exam		3	4
Assignments and tests	Lecture and discussion	Spherical surfaces Refraction in spherical surfaces - Terms and definitions in spherical surfaces - Focal points and spherical surfaces - Formation of images in spherical surfaces - Real images and imaginary images	Gaining knowledge in Concepts and Political For the spherical surface	3	5
Assignments and tests	Lecture and discussion	Finding the Gaussian formula for spherical surfaces - Lateral magnification	Learn the mathematical relationships that govern the laws of these surfaces.	3	6
Assignments and tests	Lecture and discussion	Lenses: Thin lenses - focal length and focus of the lens - convex lenses - diverging lenses	Gaining knowledge in Concepts and Political For lenses	3	7
Assignments and tests	Lecture and discussion	Compound lenses - images are formed in the lenses	Gaining knowledge in Basic concepts Lenses and their types and its applications	3	8
Assignments and tests	Lecture and discussion	Derivation of the general formula for thin lenses - Lens Makers Formula	Gaining knowledge in Basic concepts Lenses and their types and its applications	3	9
Assignments and tests	Lecture and discussion	Lens power - lateral magnification - derivation of Newton's formula for thin lenses	Gaining knowledge in Basic concepts Lenses and their types and its applications	3	10
Assignments and tests	Lecture and discussion	Comparison between Gauss's formula and Newton's formula - Lenses Thickness - focal length of compound lenses	Gaining knowledge in Basic concepts Lenses and their types and its applications	3	11
		Second month exam		3	12
Assignments and tests	Lecture and discussion	Mirrors: spherical mirrors Convex and concave mirrors Chaos formula in mirrors mirror power	Gaining knowledge in Basic concepts For mirrors and their types	3	13

Assignments and tests	Lecture and discussion	Deviation: The concept of deviation Types of deviation Ways to get rid of it From deviation	Gaining knowledge in Basic concepts For deviation	3	14
Assignments and tests	Lecture and discussion	Interference- Constructive and destructive interference. Interference conditions - Young's double slit experiment.	Gaining knowledge in Concepts and Political for wave optics	3	15
Assignments and tests	Lecture and discussion	Interference patterns - dark and bright fringes - derivation of the fringe positioning equation	Gaining knowledge in Concepts and Political On the topic of interference	3	16
Assignments and tests	Lecture and discussion	diffraction: The concept of diffraction-an experience Diffraction from a To splitsingular	Gaining knowledge in Concepts and Political For deviation	3	17
Assignments and tests	Lecture and discussion	Patterns diffraction Fraunhofer diffraction Fresnel diffraction - Rayleigh condition Diffraction in everyday phenomena-How to differentiate between- Diffraction and interference	Gaining knowledge in Basic concepts And get to know Types of diffraction	3	18
Assignments and tests	Lecture and discussion	Diffraction grating Analysis ability	Knowing the resolving power and the role of the grating in analyzing different wavelengths	3	19
Assignments and tests	Lecture and discussion	unless Polarization: meaning unless Polarization Unpolarized light and polarized light-Polarizer - Analyst	Gaining knowledge in Basic concepts For A Polarization	3	20
Assignments and tests	Lecture and discussion	Types unless Polarization- unless They will fall By God reflection Brewster's Corner The Mawa D Polarized - Polarization by scattering - Uses of polarized light- Polarization by absorption	Gaining knowledge in Concepts unless Political To polarize	3	21
		Third month exam		3	22
Assignments and	Lecture and	Comprehensive curriculum review	Consolidating information in	3	23

tests	discussion		students' minds		
		Comprehensive exam covering all the curriculum components		3	24
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
Introduction to Modern Optics, Fowles			Required textbooks (methodology any)		
Fundamentals of Optics and Lasers, Ghazi A Qaisi Concise College physics, Volume II SE Nonie			Main references (sources)		
A Alraqi Journal of Physics, Iraqi Journal of Science, Al-Ustadh Magazine, Journal of the International Institute of Physics, Journal of the American Physical Society			Recommended supporting books and references (scientific journals, reports...)		
https://optics.byu.edu/docs/OpticsBook.pdf			Electronic references, websites		

1. Course name					
Astronomy					
2. code The decision					
3. the chapter /year					
2025-2026					
4. Date prepared Description					
5. AAvailable attendance forms					
Interview/Hall					
6. Number of study hours (total) / Number of units (total)					
2/4					
7. Course Instructor Name(If more than one name is mentioned)					
the name:Dr. Mays Mohammed Salim Email:					
8. Course objectives					
· Conducting a survey of the components of the universe, its history, dimensions, and the Earth's movement within it. ·To arrive at a concrete, "magnified picture" of our place in this universe, enabling us to establish a foundation upon which to build a deeper understanding of the universe.					Course objective Academic
9. Teaching and learning strategies					
- Surprise tests - Dialogue (questions + answers) Assigning students to give a lecture on the course topics. - Written tests - Duties					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	TheAAat	week
Assignments and tests	Lecture and discussion	F1 (Celestial Mechanics) The Zodiac System - The Galactic System - The Motion of the Stars in the Sky		2	1
Assignments and tests	Lecture and discussion	Zodiac and zodiacal circle - The four astronomical seasons - Precession and sway - Astronomical units of measurement -		2	2
Assignments and tests	Lecture and discussion	F2 (Solar System) The Sun - Origin of Solar Systems - Physical Properties of the Sun		2	3
Assignments and tests	Lecture and discussion	Methods of measuring the Sun's diameter, mass, and surface temperature		2	4
Assignments and tests	Lecture and discussion	Axial motion of the Sun - Solar atmosphere -		2	5

Assignments and tests	Lecture and discussion	Sunspots - Solar radiation and wind - and the solar constant - Earth		2	6
Assignments and tests	Lecture and discussion	The Moon - Physical properties of the Moon and methods of measuring its diameter, mass and density. The rate of gravity on the surface of the Moon - Escape velocity on the surface of the Moon.		2	7
Assignments and tests	Lecture and discussion	Moon - Lunar atmosphere - Reflectivity - Magnetic field - Lunar motions - Lunar orbit and rotation		2	8
Assignments and tests	Lecture and discussion	Sidereal and Synodic Cycles - Phases of the Moon during its Synodic Cycle - Calculating the Lunar Day, Sidereal Day, and Solar Day		2	9
Assignments and tests	Lecture and discussion	The phenomenon of eclipses - the number of eclipses and possible eclipses in one year - the importance of studying solar eclipses		2	10
Assignments and tests	Lecture and discussion	F3 (The planets) Physical properties of the planets - Bode's principle		2	11
Assignments and tests	Lecture and discussion	Meteors and meteorites - comets -		2	12
Assignments and tests	Lecture and discussion	F4 (Stars) Stellar motion - Stellar distance - Stellar magnitudes -		2	13
Assignments and tests	Lecture and discussion	Star colors and surface temperatures - Star luminosity - Magnitude measurements		2	14
Assignments and tests	Lecture and discussion	Stars - Mass and density of stars - Spectra of stars - Relationship between mass of stars and their luminosity		2	15
Assignments and tests	Lecture and discussion	Hazbrunk-Sprank-Russell diagram - Age of stars - Life cycle of stars - Neutron stars - Black holes		2	16
Assignments and tests	Lecture and discussion	F5 (Binary Systems) Binary Stars and Multiple Star Clusters - Physical Classification of Binary Stars		2	17

Assignments and tests	Lecture and discussion	Visible binaries - Spectral binaries - Ecliptic binaries -		2	18
Assignments and tests	Lecture and discussion	Star clusters - open clusters - globular clusters -		2	19
Assignments and tests	Lecture and discussion	Variable stars - pulsar variables - volcanic variables - pulsars - lysars		2	20
Assignments and tests	Lecture and discussion	F6 (Galaxies and the expansion of the universe) Types of galaxies - Components of galaxies		2	21
Assignments and tests	Lecture and discussion	Galaxy mass - the stellar population in a galaxy		2	22
Assignments and tests	Lecture and discussion	Star clusters - Nebulae (galactic and non-galactic) - Milky Way Galaxy - Galaxy size -		2	23
Assignments and tests	Lecture and discussion	The location of the solar system in it - quasars - the expansion of the universe and the phenomenon of galactic divergence.		2	24

11. Course Evaluation

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

12. Learning and teaching resources

Introduction to Modern Optics, Fowles	Required textbooks (methodology if any)
Fundamentals of Optics and Lasers, Ghazi Al-Qai Concise College physics, Volume II SE Nonie	Main references (sources)
A Alraqi Journal of Physics, Iraqi Journal of science, Al-Ustadh Magazine, Journal of the International Institute of Physics, Journal of the American Physical Society	Recommended supporting books and references (scientific journals, reports...)
https://optics.byu.edu/docs/OpticsBook.pdf	Electronic references, websites

1. Course name	
Electricity and Magnetism 2	
2. codeThe decision	
3. the chapter /year	
2025-2026	
4. Date preparedDescription	
5. AAvailable attendance forms	
Interview/Hall	
6. Number of study hours (total) / Number of units (total)	
4/5	
7. Course Instructor Name(If more than one name is mentioned)	
the name: Dr. Obaida Amer Abdul Hussein Email:dr.obaida.amer@gmail.com	
8. Course objectives	
• Know the force acting on a moving electric charge in a magnetic field • State the basic conditions for the occurrence and propagation of magnetic force. • The magnetic field generated by an electric current is known as • Write the mathematical equation for Bayou-Savert's and Ampere's laws for different types of wires carrying current. • Solve problems on the equations for generating a magnetic field from an electric current using Beausavert's and Ampere's laws. • The law of induced electromotive force explains • Write laws for induced electromotive force such as Faraday's law and Lenz's law. • Self and mutual induction are known. • Distinguish between stored energy and stored energy density in a magnetic field. • Alternating current is known and inductive, capacitive and pure current is classified. • To calculate the resistance and different frequencies, to show the directional diagram of the frequencies, and to determine the phase and phase difference between the frequencies. • Define electromagnetic waves and classify Maxwell's equations for plane electromagnetic waves. • Recognizes the energy carried by electromagnetic waves. Interprets the wave spectrum..	Course objective Academic
9. Teaching and learning strategies	
- Surprise tests - Dialogue (questions + answers) Assigning students to give a lecture on the course topics. - Written tests - Duties	Strategy
10. Course structure	

Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	TheAAat	week
Assignments and tests	Lecture and discussion	A brief history of magnetism, magnetic field, and magnetic flux	Introducing the student to general conceptsFor magnetism	2	1
Assignments and tests	Lecture and discussion	Chapter One: The Magnetic Field	Introducing the student to general conceptsFor magnetic field, flux	2	2
Assignments and tests	Lecture and discussion	magnetic field	Introducing the student to general conceptsMotion of a charged particle in two fields	2	3
Assignments and tests	Lecture and discussion	magnetic flux		2	4
Assignments and tests	Lecture and discussion	Force on a moving electric charge in a magnetic field		2	5
Assignments and tests	Lecture and discussion	Motion of an electrically charged body in a magnetic field	Introducing the student to general conceptsFor electrical measuring instruments, the force on a conductor	2	6
Assignments and tests	Lecture and discussion		Introducing the student to the general concepts of magnetic couple moment	2	7
Assignments and tests	Lecture and discussion	Motion of a charged body in two perpendicular electric and magnetic fields	Introducing the student to general conceptsFor voltmeter, galvanometer and ammeter	2	8
Assignments and tests	Lecture and discussion	Thomson's experiment to measure the ratio between the charge and mass of an electron		2	9
Assignments and tests	Lecture and discussion	mass spectrometer		2	10

Assignments and tests	Lecture and discussion	Impacthole	Introducing the student to general concepts Biot-Savart, Magnetic Induction, Finding Flux Density.....	2	11
Assignments and tests	Lecture and discussion		Introducing the student to general concepts To define Ampere and Ampere's circular law	2	12
Assignments and tests	Lecture and discussion	Solving the exercises of the first chapter	Introducing the student to general concepts Flux density using Ampere's law	2	13
Assignments and tests	Lecture and discussion	First Exam (F1)		2	14
Assignments and tests	Lecture and discussion	Chapter Two: Some electrical measuring devices		2	15
Assignments and tests	Lecture and discussion		Introducing the student to general concepts for electromotive force	2	16
Assignments and tests	Lecture and discussion	The force on a conductor carrying an electric current in a magnetic field	Introducing the student to general concepts For the generator and the induced field	2	17
Assignments and tests	Lecture and discussion	Torque of a coil carrying a current in a magnetic field		2	18
Assignments and tests	Lecture and discussion			2	19
Assignments and tests	Lecture and discussion	moving coil galvanometer	Introducing the student to general concepts Mutual induction, self-induction, and energy stored in a magnetic field	2	20
Assignments and tests	Lecture and discussion	current meter	Introducing the student to general concepts To connect inductors and eddy currents	2	21
Assignments and tests	Lecture and discussion	potentiometer		2	22

Assignments and tests	Lecture and discussion			2	23
Assignments and tests	Lecture and discussion	Solutions to the second semester exercises	Introducing the student to general concepts For alternating current and direct current	2	24
Assignments and tests	Lecture and discussion	Second exam (second semester)	Introducing the student to general conceptsFor coil behavior in AC circuits	2	25
Assignments and tests	Lecture and discussion	Chapter Three: The Magnetic Field of Electric Current	Introducing the student to general conceptsFor the instantaneous value of the current	2	26
Assignments and tests	Lecture and discussion	Magnetic field of electric current		2	27
Assignments and tests	Lecture and discussion	- Biot-Savart law and its applications		2	28
Assignments and tests	Lecture and discussion	Magnetic induction of a straight wire	Introducing the student to general concepts Maxwell's equations and Maxwell's theory	2	29
Assignments and tests	Lecture and discussion	Finding the magnetic flux density at a point on the axis of a circular wire	Introducing the student to general conceptsFor the integral form of Maxwell's equations...	2	30
Assignments and tests	Lecture and discussion	Finding the magnetic flux density at a point on the axis of a cylindrical coil	Introducing the student to general conceptsTo produce electromagnetic waves, their properties and radiation pressure...	2	31
Assignments and tests	Lecture and discussion	Magnetic induction of a moving electric charge		2	32
Assignments and tests	Lecture and discussion	The force between two long straight wires, each carrying an electric current.		2	33

11. Course Evaluation	
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.	
12. Learning and teaching resources	
electrical and magnetism.Composition:AbrahamMNasser, and theDDoctorAbDThe curtainJawad, WalDDoctorAnwar CMYellbeguileM	Required textbooks (methodology if any)
	Main references (sources)
TMErinandMliquid MSolutionsAnd, MIn summaryTChainAnd Shom in physics Physics for Scientists and Engineers (6 ed.) by Serway, R. A., & Jewett, J. W. (2008).	Recommended supporting books and references (scientific journals, reports...)
Lectures and experiments from YouTube	Electronic references, websites

1. Course name:					
Mathematics 2					
2. code The decision					
3. the chapter /year					
2025-2026					
4. Date prepared Description					
5. A Available attendance forms:					
My presence					
6. Number of study hours (total) / Number of units (total):					
3/6					
7. Course Instructor Name(If more than one name is mentioned)					
Name: Dr. Mohammed Tariq Jameel				Email:	
8. Course objectives					
Teaching the student the basic principles of physics, mechanics of motion of all kinds, and the basic laws to explain phenomena. To prepare students for natural movement and how to explain or interpret these phenomena and their laws.				Course objectives	
9. Teaching and learning strategies					
Giving lecturesWith the use of visual aids. Dialogue With students. Discussion Giving examples. Written exams				Strategy	
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Homework + Exam + Daily Exams	theoretical	1. Vectors and the Geometry of Space 2. Three-Dimensional Coordinate Systems 3. Vectors 4. The Dot Product 5. The Cross Product 6. Lines and Planes in spa	to understand	2*4=8	1+2+3+4
Homework + Exam + Daily Exams	theoretical	.1Partial Derivatives .2The Chain Rule .3Directional Derivatives and Gradient Vectors .4Tangent Planes and Differentials .5Extreme Values and Saddle Points		2*4=8	1+2+3+4
Homework + Exam +	theoretical	1. Basic of differential equation		2*4=8	1+2+3+4

Daily Exams		2. Direction Fields and Numerical Methods 3. Separable Equations 4. The Logistic Equation 5. First-order Linear Equations			
Homework + Exam + Daily Exams	theoretical	1. Exponential and logarithmic function properties 2. Derivative form		2*4=8	1+2+3+4
Homework + Exam + Daily Exams	theoretical	1. Power Series 2. Applications of Power Series 3. Fourier Series		2*4=8	1+2+3+4
Homework + Exam + Daily Exams	theoretical	1. Infinite Sequences and Series 2. Sequences 3. Infinite Series 4. Alternating Series, Absolute and Conditional Convergence		2*4=8	1+2+3+4
Homework + Exam + Daily Exams	theoretical	1. Integration by Parts 2. Trigonometric Integrals 3. Partial Fractions 4. Other strategies for integration		12=3*4	1+2+3+4
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
			Required textbooks (methodology if any)		
Thomas Calculus			Main references (sources)		
Thomas fourth edition Based on the original work by .GEORGE B. THOMAS, JR			Recommended supporting books and references (scientific journals, reports...)		
			Electronic references, websites		

1. Course name:

Sound and wave motion					
2. codeThe decision					
3. the chapter /Year:					
2025-2026					
4. Date preparedDescription:					
5. AAvailable attendance forms:					
Interview/Hall					
6. Number of study hours (total) / Number of units (total):					
2/4					
7. Course Instructor Name(If more than one name is mentioned)					
Name: Dr. Rand Basem Lutf					
Email:					
8. Course objectives					
• Understanding the basic concepts of sound and wave motion • Providing the student with practical application skills and conducting experiments			Course objectives		
9. Teaching and learning strategies					
Lectures, discussions, and assigning students to prepare papers on the course topics.					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	Phonetics - Psychological meaning - Physical meaning - Origin of sound - Occurrence and propagation of sound	Student understanding of the lesson	2	1
Assignments and tests	Lecture and discussion	Conditions required for the medium to transmit sound	Student understanding of the lesson	2	2
Assignments and tests	Lecture and discussion	Vibrational motion - Simple harmonic motion - Specific force generated by elasticity	Student understanding of the lesson	2	3
Assignments and tests	Lecture and discussion	borrowedYQ: Complete oscillation - oscillation period - frequency - displacement -	Student understanding of the lesson	2	4

		amplitude - simple harmonic motion equations			
Assignments and tests	Lecture and discussion	Projection of circular motion on the diameter of the circle - phase - phase difference - energy of a simple harmonic oscillator	Student understanding of the lesson	2	5
Assignments and tests	Lecture and discussion	Differential Equation of Simple Harmonic Motion - Applications of Simple Harmonic Motion	Student understanding of the lesson	2	6
Assignments and tests	Lecture and discussion	Helical spring - Simple pendulum - Floating body - Liquid in a tubeU	Student understanding of the lesson	2	7
Assignments and tests	Lecture and discussion	The mass connected between two springs - the compound pendulum - the lying pendulum	Student understanding of the lesson	2	8
Assignments and tests	Lecture and discussion	Composition rule - composition of two simple harmonic movements in opposite directions	Student understanding of the lesson	2	9
Assignments and tests	Lecture and discussion	Lissajous figures - graphical composition of two perpendicular harmonic motions	Student understanding of the lesson	2	10
Assignments and tests	Lecture and discussion	Compounding two perpendicular movements with a frequency ratio of 2:1 in a graphical form - beats	Student understanding of the lesson	2	11
Assignments and tests	Lecture and discussion	Forces causing decay of vibrations - Equation of decayed harmonic motion	Student understanding of the lesson	2	12
Assignments and tests	Lecture and discussion	states of decaying harmonic motion	Student understanding of the lesson	2	13

Assignments and tests	Lecture and discussion	Forced Oscillations - Forced Oscillation Equation	Student understanding of the lesson	2	14
Assignments and tests	Lecture and discussion	Resonance - Amplitude of vibration at resonance - Practical examples of resonance	Student understanding of the lesson	2	15
Assignments and tests	Lecture and discussion	Classification of mechanical waves	Student understanding of the lesson	2	16
Assignments and tests	Lecture and discussion	Properties of wave motion - Transverse wave velocity in a taut string	Student understanding of the lesson	2	17
Assignments and tests	Lecture and discussion	Mathematical representation of a wave - phase and phase difference	Student understanding of the lesson	2	18
Assignments and tests	Lecture and discussion	Differential equation of a simple harmonic wave	Student understanding of the lesson	2	19
Assignments and tests	Lecture and discussion	Standing Waves - Theory of Vibration of a Taut String of Finite Length	Student understanding of the lesson	2	20
Assignments and tests	Lecture and discussion	Adiabatic behavior of a longitudinal wave - Velocity of a longitudinal wave in a gas	Student understanding of the lesson	2	21
Assignments and tests	Lecture and discussion	Laplace correction - the effect of temperature on the speed of sound	Student understanding of the lesson	2	22
Assignments and tests	Lecture and discussion	The effect of pressure on the speed of sound - The effect of humidity on speed - Interference of sound waves - Speed of the wave traveling in the string - Reflection	Student understanding of the lesson	2	23

		of string waves from the fixed end			
Assignments and tests	Lecture and discussion	Motion in a string with fixed ends. Practical applications on string vibration (tonometer - Morsi's law) - wire tension - power and intensity in sound - decibel scale.	Student understanding of the lesson	2	24
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
Sound and Wave Motion, Amjad Karajieh			Required textbooks (methodology if any)		
University Physics, Szymanski			Main references (sources)		
Iraqi Journal of Physics, Iraqi Journal of Science, Al-Ustadh Journal, Journal of the International Institute of Physics, Journal of the American Physical Society			Recommended supporting books and references (scientific journals, reports...)		
www.physics.com www.science.com www.physicstoday.com www.modernphysics.com			Electronic references, websites		

1.Course name					
Baath regime crimes in Iraq					
2. Course code					
3. Semester/Year					
2025-2026					
4. History Prepare this description					
5. Available forms of attendance					
Classrooms					
6. Number of study hours (total) Number Units (total)					
One hour/two units					
7. Name of the course supervisor (if more than one name is mentioned)					
the name:Dr: Sattar mohammed alawe					
Email:					
8. Course objectives					
To learn about and become aware of the crimes committed by the defunct and dissolved Baath Party against the Iraqi people from all its components, and to establish awareness among students to reject all forms of injustice and tyranny by these regimes and to demand all civil and political rights for the individual..					ATop scorer of the course
Teaching and learning strategies					
Delivering scientific lectures, using discussion and dialogue methods, and daily and monthly tests.					Strategy
10. Course structure					
Evaluation method	Teaching method	Name of unit or topic	Required learning outcomes	watches	week
Question and Answer	Giving the lecture	Baath crimes under the Iraqi Criminal Court Law	The student learns about Baath crimes according to the Iraqi Criminal Court Law.	One hour	1

Question and Answer	Giving the lecture	The concept of crimes and their types	To distinguish between the concept of crimes and their types	One hour	2
Question and Answer	Giving the lecture	Definition of crime in language and terminology	To clarify the term and language to the student	One hour	3
Question and Answer	Giving the lecture	Crime Sections	Identify the types of crimes	One hour	4
Question and Answer	Giving the lecture and use of the blackboard	Types of international crimes	Identifying types of international crimes	One hour	5
Question and Answer	Giving the lecture and use of the blackboard	Decisions issued by the Criminal Court	Learn about the decisions issued by the Criminal Court	One hour	6
Question and Answer	Giving the lecture	Psychological and social crimes and the most prominent violations of the Baath Party	Identifying psychological and social crimes and the most prominent violations of the Baath Party	One hour	7
Question and Answer		Psychological crimes	Identifying psychological crimes	One hour	8
Question and Answer	Giving the lecture and use of the blackboard	Mechanisms of psychological crimes	Identifying the mechanisms of psychological crimes	One hour	9
viva voce	Giving the lecture and use of the blackboard	Psychological effects of crimes	Identifying the effects of psychological crimes	One hour	10
Question and Answer	Giving the lecture	social crimes	Identifying social crimes	One hour	11
Question and Answer	Giving the lecture	militarization of society	To clarify the concept of militarization of	One hour	12

r			society		
Question and Answer	Giving the lecture	Baath's position on religion	Understanding the Baath Party's position on religion	One hour	13
Question and Answer	Giving the lecture and use of the blackboard	Violation of Iraqi laws	Identify violations of Iraqi laws	One hour	14
Written exam	Giving the lecture	Pictures of human rights violations	Identifying images of human rights violations	One hour	15
Question and Answer	Giving the lecture	Some political violations decisions	Identify some political violations decisions	One hour	16
Question and Answer	Giving the lecture and use of the blackboard	Prisons and detention centers	Identify prison and detention facilities	One hour	17
Question and Answer	Giving the lecture	Environmental crimes of the Baath regime	Identifying the environmental crimes of the Baath regime	One hour	18
Question and Answer	Giving the lecture	War pollution	Recognizing war pollution	One hour	19
Question and Answer	Giving the lecture	Destruction of cities and villages	Learn about the destruction of cities and villages	One hour	20
Question and Answer	Giving the lecture	draining the marshes	Learn about drying the marshes	One hour	21
Question and Answer	Giving the lecture	orchard bulldozing	Learn about orchard clearing	One hour	22
Question and Answer	Giving the lecture and use of the blackboard	mass graves	Identifying mass graves	One hour	23
Question and	Giving the lecture	Genocide Graves	Learn about the events of the	One hour	24

Answer		Events	genocide graves		
viva voce	Giving the lecture	Symbolic classification of genocide graves	Identifying the symbolic classification of genocide graves	One hour	25
Show only	Giving the lecture	Displaying documents of genocide crimes	Learn about the presentation of documents on genocide crimes	One hour	26
Show only	Giving the lecture	View Criminal Court Decisions	Learn about the presentation of criminal court decisions	One hour	27
Show only	Giving the lecture	The accusations against Saddam and his aides	Learn about the charges against Saddam and his associates	One hour	28
Show only	Giving the lecture	Displaying photo documents of crimes	Displaying photo documents of crimes	One hour	29
Show only	Giving the lecture	Displaying photo documents of crimes	Displaying photo documents of crimes	One hour	30
11. TqYThe scheduled date					
Distribute the grade out of 100 according to the assigned tasks. The student has daily preparation, daily, oral and monthly exams.					
12. Education and teaching resources					
Baath regime crimes in Iraq			Required textbooks (methodology)EIf found		
Political Prisoners Foundation ArchiveN			Main References (Sources)		
			Mainstream books and references recommended by scientific journals, Reports....)		
			Electronic references, websites		

1. Course name					
Electronics Principles					
2. code The decision					
Electronics					
3. the chapter /year					
2025-2026					
4. Date prepared Description					
5. A Available attendance forms					
Interview/Hall					
6. Number of study hours (total) / Number of units (total)					
5/7					
7. Course Instructor Name (If more than one name is mentioned)					
Name: M.M. Sura Sami Jamil Email:sura.s.jameel@aliraqia.edu.iq					
8. Course objectives					
The progress of nations is measured by their ability to absorb and master modern technologies, including semiconductor integrated circuits. Therefore, it is important to study the basic properties of semiconductors, the conduction processes, and the working mechanisms of diodes, transistors, and junctions.MIntegration.			Course objectives		
9. Teaching and learning strategies					
				Strategy	
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	Electronic emissions and their types - types of electronic valves	For the student to learnelectronic emissions	3	1
Assignments and tests	Lecture and discussion	Advantages of vacuum tubes - examples - problems	For the student to learnvacuum tubes	3	2

Assignment s and tests	Lecture and discussio n	Semiconductor Physics - Energy bands of crystals - Electrons and holes as charge carriers - Energy band model -	For the student to learnElectrons and holes as charge carriers	3	3
Assignment s and tests	Lecture and discussio n	Conductors, Insulators and Semiconductors - Pure Semiconductors - Impure Semiconductors	For the student to learnConductors , insulators and semiconductors	3	4
Assignment s and tests	Lecture and discussio n	Current flow in impure semiconductors - Current flow in impure semiconductors.	For the student to learnCurrent flow in impure semiconductors	3	5
Assignment s and tests	Lecture and discussio n	dual-linkPN – PN junction bias – PN junction characteristic curve – PN junction power diagram	For the student to learndual- linkPN	3	6
Assignment s and tests	Lecture and discussio n	Voltage or barrier calculation - equivalent circuit of a crystal diode - analysis of a crystal diode circuit - working line - Zener effect	For the student to learnCalculate the effort or barrier	3	7
Assignment s and tests	Lecture and discussio n	Tunnel diode - Light- emitting diode - Variable capacitance diode - Cold cathode diode - Questions and problems	For the student to learnTunnel binary	3	8
Assignment s and tests	Lecture and discussio n	Rectification - Half-wave rectifier - Full-wave rectifier - Comparison between half-wave and full-wave rectifier - Rectification bridge	For the student to learn half wave rate	3	9
Assignment s and tests	Lecture and discussio n	Ripple factor - Filter circuits - Binding circuits - Voltage doubler circuit - Clipping circuit - Voltage regulation.	For the student to learnRipple factor - Filter circuits - Binding circuits	3	10
Assignment s and tests	Lecture and discussio n	Basic characteristics of the transistor - Transistor connection methods - Transistor operating areas	For the student to learnBasic characteristics of a transistor	3	11
Assignment s and tests	Lecture and discussio n	Advantages of the transistor in the common emitter connection - Advantages of the transistor in the common base connection -	For the student to learnAdvantages of common emitter transistor	3	12

		Advantages of the transistor in the common collector connection			
Assignment s and tests	Lecture and discussio n	Transistor equivalent circuits - Leakage currents in transistor circuits - Load line	For the student to learn Transistor equivalent circuits	3	13
Assignment s and tests	Lecture and discussio n	The relationship between (OC) and (B) – Characteristics of hybrid operators – Transitions of hybrid operators from one state to another to connect the transistor.	For the student to learn The relationship between (OC) and (B)	3	14
Assignment s and tests	Lecture and discussio n	Transistor bias and thermal stability circuits - Transistor bias - Operating point stability - Transistor bias circuits	For the student to learn Transistor biasing and thermal stability circuits	3	15
Assignment s and tests	Lecture and discussio n	Stability factor - Transistor bias circuits PNP.	For the student to learn stability coefficient	3	16
Assignment s and tests	Lecture and discussio n	common base amplifier CB – Common Emitter Amplifier CE – Common Collector Amplifier – Comparison of basic transistor amplifiers.	For the student to learn common base amplifier CB	3	17
Assignment s and tests	Lecture and discussio n	Voltage, Current, and Power Gain – Input and Output Resistance of the Amplifier CE - Cathode Dependent Emitter Amplifier - Distortion in Amplifiers - Examples and Problems	For the student to learn Gain in voltage, current and power	3	18
Assignment s and tests	Lecture and discussio n	Basic equation of feedback - positive feedback - negative feedback - types of negative feedback - effect of feedback on voltage and current gain	For the student to learn Basic feedback equation	3	19
Assignment s and tests	Lecture and discussio n	The effect of feedback on frequency response, noise and distortion - The effect of feedback on the input and output impedance of	For the student to learn The effect of feedback on frequency	3	20

		the amplifier.	response, noise and distortion		
Assignment s and tests	Lecture and discussio n	Junction field effect transistor - Working principle of junction field effect transistor - Characteristic curves of junction field effect transistor - Constants of junction field effect transistor.	For the student to learn Junction field effect transistor	3	21
Assignment s and tests	Lecture and discussio n	Junction Field Effect Transistor Amplifier and Load Depletion - Metal Oxide Field Effect Transistor - Junction Field Effect Transistor Methods.	For the student to learn transistor amplifier	3	22
Assignment s and tests	Lecture and discussio n	Types of sine oscillators - Conditional oscillators - Positive feedback oscillators - Group or phase shift oscillators - Hartley oscillators	For the student to learn Types of sinusoidal oscillators	3	23

1. Course name					
Environment and Safety					
2. code The decision					
3. the chapter /year					
2024-2025					
4. Date prepared Description					
5. A Available attendance forms					
Interview/Hall					
6. Number of study hours (total) / Number of units (total)					
2/4					
7. Course Instructor Name(If more than one name is mentioned)					
Name: M.M.Mohammed khalel ibraheem					
Email:					
8. Course objectives					
Learn the basic concepts in ecology----Learn about environmental pollutants in detail, their negative role, and how to get rid of them---RecognitionOn renewable energy sources and investing in them to achieve sustainable development				Course objectives	
9. Teaching and learning strategies					
1-Theoretical and practical lectures. 2- Using educational tools (presentations and scientific films) 3- Practical application, which includes field visits to environmental sites, environmental awareness campaigns in the college and the community, and plant planting campaigns in the college site, departments, and gardens.				Strategy	
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	Environment - Branches of Ecology - Ecosystem - Characteristics of Ecosystem	Student understanding of the lesson	2	1
Assignments and tests	Lecture and discussion	Components of the ecosystem - physical and chemical environmental factors	Student understanding of the lesson	2	2
Assignments and tests	Lecture and discussion	Water cycle and biogeochemical cycles Gaseous cycles- sedimentary cycles	Student understanding of the lesson	2	3
Assignments	Lecture	Energy flow in the	Student	2	4

and tests	and discussion	ecosystem yield- Methods of measuring primary productivity	understanding of the lesson		
Assignments and tests	Lecture and discussion	Food chains and webs Nutritional level- Types of food chains	Student understanding of the lesson	2	5
Assignments and tests	Lecture and discussion	Environmental pyramids - Types of environmental pyramids - Home and Environmental Center	Student understanding of the lesson	2	6
Assignments and tests	Lecture and discussion	Limiting factors and tolerance laws-Lebecq's minimum law Shelford's Law of Endurance - The concept of combining the laws of minimum and maximum limiting factors	Student understanding of the lesson	2	7
Assignments and tests	Lecture and discussion	Vital signs and monitoring Population group - population density - featuresPopulation group - survival curves	Student understanding of the lesson	2	8
Assignments and tests	Lecture and discussion	exam	Student understanding of the lesson	2	9
Assignments and tests	Lecture and discussion	Environmental pollution - Types of pollutants - Consistency - Biodiscrimination - Bioconcentration	Student understanding of the lesson	2	10
Assignments and tests	Lecture and discussion	Air pollution - Primary air pollutants - Particulate matter - Carbon dioxide	Student understanding of the lesson	2	11
Assignments and tests	Lecture and discussion	Carbon monoxide pollution - acid rain - global warming - sulfur oxides - chlorofluorocarbons	Student understanding of the lesson	2	12
Assignments and tests	Lecture and discussion	exam	Student understanding of the lesson	2	13
Assignments	Lecture	Radioactive	Student	2	14

and tests	and discussion	contamination - risks of radioactive contamination - sources of radioactive contamination - food and drug contamination	understanding of the lesson		
Assignments and tests	Lecture and discussion	Oil pollution - sources of oil pollution - damages of oil pollution	Student understanding of the lesson	2	15
Assignments and tests	Lecture and discussion	Thermal pollution - the harmful effects of thermal pollution - the El Niño and La Niña phenomenon	Student understanding of the lesson	2	16
Assignments and tests	Lecture and discussion	Water pollution - Soil pollution - Soil pollutants - Fertilizers and pesticides	Student understanding of the lesson	2	17
Assignments and tests	Lecture and discussion	Secondary air pollutants - ozone hole	Student understanding of the lesson	2	18
Assignments and tests	Lecture and discussion	exam	Student understanding of the lesson	2	19
Assignments and tests	Lecture and discussion	Energy - Traditional energy sources - Oil - Coal - Gas - Nuclear energy	Student understanding of the lesson	2	20
Assignments and tests	Lecture and discussion	Renewable or alternative energy - characteristics of renewable energy - types of renewable energy	Student understanding of the lesson	2	21
Assignments and tests	Lecture and discussion	Solar energy - solar cells - solar collectors	Student understanding of the lesson	2	22
Assignments and tests	Lecture and discussion	Wind energy - wind turbines - types of turbines	Student understanding of the lesson	2	23
Assignments and tests	Lecture and discussion	The concept of sustainable development Definition of sustainable development	Student understanding of the lesson	2	24
Assignments and tests	Lecture and discussion	Transition from development Humanity to	Student understanding of the lesson	2	25

		Development Sustainable humanity Evolution of the concept of development sustainable			
Assignments and tests	Lecture and discussion	Development characteristics Sustainable and components Its continuity Dimensions of sustainable development	Student understanding of the lesson	2	26
Assignments and tests	Lecture and discussion	Sustainable development indicators Sustainable development levels Human development goals sustainable	Student understanding of the lesson	2	27
Assignments and tests	Lecture and discussion	Sustainable development challenges And the mechanism to confront it private international organizations with sustainable development	Student understanding of the lesson	2	28
Assignments and tests	Lecture and discussion	Environmental protection institutions on Central level And the local	Student understanding of the lesson	2	29
exam	exam	exam	Student understanding of the lesson	2	30

1. Course name					
Thermodynamics					
2. code The decision					
3. the chapter /year					
2025-2026					
4. Date prepared Description					
5. A Available attendance forms					
Classrooms					
6. Number of study hours (total) / Number of units (total)					
3 hours / 5 units					
7. Course Instructor Name(If more than one name is mentioned)					
Name: Haider Ghaleb Fahd Email:hayder.fahad@aliraqia.edu.iq					
8. Course objectives					
• This course introduces the student to the meaning of thermodynamics, including the most important basic concepts of this science, deriving basic equations, and studying some of its applications.				Course objectives	
9. Teaching and learning strategies					
Giving scientific lectures, using discussion and dialogue methods, daily and monthly tests, and requesting the preparation of scientific reports.					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	Basic concepts	The student learnsBasic concepts	3	1
Assignments and tests	Lecture and discussion	System, system boundaries, system types, thermal equilibrium	For the student to learnSystem, System Limits	3	2
Assignments and tests	Lecture and discussion	System properties	For the student to learnSystem properties	3	3
Assignments and tests	Lecture and discussion	State functions, thermodynamic processes	For the student to learnState functions	3	4
Assignments and tests	Lecture and discussion	State function conditions, partial differentiation, dilatancy, compressibility	For the student to learnConditions of the state function	3	5
Assignment	Lecture	Work during	The student	3	6

s and tests	and discussion	various thermodynamic processes	learns the conditions of the state function. Work during various thermodynamic processes		
Assignment s and tests	Lecture and discussion	Work is halal for inverse operations	For the student to learn Work is halal for inverse operations	3	7
Assignment s and tests	Lecture and discussion	Ideal gas, equation of state for an ideal gas, Boyle's law, Charles's law, universal gas constant	For the student to learn ideal gas, equation of state for an ideal gas	3	8
Assignment s and tests	Lecture and discussion	Derivation of the ideal gas equation, real gas equation and its derivation	For the student to learn Derivation of the ideal gas equation	3	9
Assignment s and tests	Lecture and discussion	exam		3	10
Assignment s and tests	Lecture and discussion	Van der Waals equation and its discussion	For the student to learn Van der Waals equation	3	11
Assignment s and tests	Lecture and discussion	Pressure correction, volume correction	For the student to learn Pressure correction	3	12
Assignment s and tests	Lecture and discussion	How to calculate critical constants	For the student to learn How to calculate critical constants	3	13
Assignment s and tests	Lecture and discussion	Joule's experiments, the first law of thermodynamics	For the student to learn Joule's experiments, the first law of thermodynamics	3	14
Assignment s and tests	Lecture and	Application of the first law to	For the student to	3	15

	discussion	adiabatic processes, constant-volume processes, isothermal processes, and free expansion processes	learnAdiabatic processes		
Assignment s and tests	Lecture and discussion	Enthalpy, the relationship between internal energy and enthalpy, heat capacity under constant volume and heat capacity under constant pressure and the relationship between them	For the student to learnenthalpy	3	16
Assignment s and tests	Lecture and discussion	Calculate the ratio of Kama	For the student to learnCalculate the ratio of Kama	3	17
Assignment s and tests	Lecture and discussion	Reversible adiabatic and reversible isothermal processes	For the student to learnAdiabatic processes	3	18
Assignment s and tests	Lecture and discussion	exam		3	19
Assignment s and tests	Lecture and discussion	The second law of thermodynamics, the heat engine, the efficiency of the engine	For the student to learnThe second law of thermodynamics	3	20
Assignment s and tests	Lecture and discussion	refrigerator, heat pump, Carnot cycle, reverse Carnot cycle	For the student to learnHeat pump, Carnot cycle	3	21
Assignment s and tests	Lecture and discussion	Entropy, ideal gas entropy, principle of increasing	For the student to learnEntropy	3	22

		entropy			
Assignment s and tests	Lecture and discussio n	Helmholtz function, Caps function	For the student to learnHelmholtz function	3	23
Assignment s and tests	Lecture and discussio n	exam		3	24
Assignment s and tests	Lecture and discussio n	Maxwell's Relationships	For the student to learnMaxwell's Relationships	3	25
Assignment s and tests	Lecture and discussio n	pure matter	For the student to learnpure matter	3	26
Assignment s and tests	Lecture and discussio n	Kinetic theory of gases	For the student to learnKinetic theory of gases	3	27
Assignment s and tests	Lecture and discussio n	Heat transfer, the mechanics of heat energy transfer during thermal processes	For the student to learnheat transfer	3	28
Assignment s and tests	Lecture and discussio n	review		3	29
Assignment s and tests	Lecture and discussio n	exam		3	30
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
			Required textbooks (methodology if any)		
Thermodynamics (Dr. Amjad Abdul Razzaq Karajiya) Thermal kinetics and the kinetic theory gases (Dr. Abdul Rahman Mahmoud A Jumaili, Dr. Muayad Gabriel, Dr. Muayad Abbas Muhammad)			Main references (sources)		
			Recommended supporting books and references (scientific journals, reports...)		
www.physics.com			Electronic references, websites		

www.science.com www.physicstoday.com www.modernphysics.com	
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1. Course name					
Complex functions					
2. code The decision					
3. the chapter /year: 2025-2026					
4. Date prepared Description:					
5. AA Available attendance formsDaily work					
6. Number of study hours (total) / Number of units (total) 60 hours theoretically					
7. Course Instructor Name (If more than one name is mentioned)					
Name: Asst. Prof. Dr. Mahmoud Salem Fayyad Email:					
8. Course objectives					
Rehabilitation And training The student And his education on preparation complex And the functions complex and its properties and integration Complex and series and applications Physics And employment functions in service Materials Academic Other			Course objectives		
9. Teaching and learning strategies					
Use presentation, training, discussion, and brainstorming strategie					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
monthly exa	theoretica	Introduction, Complex Number, Exercises, Algebraic Properties, Exercises, Absolute Value, Exercises, Geometric Representation of Complex Numbers, Polar Coordinates, Exercises, Powers and Roots, Exercises	Gain knowledge complex numbers and their properties	10	1-5
monthly exa	theoretical		Gain	10	6-10

		Functions of complex variables, exercises, goals, exercises, continuity, exercises, derivative, exercises, analytic functions, harmonic functions, exercises	knowledge complex numbers and their properties		
monthly exam	theoretical	Exponential function, logarithmic function, exercises, trigonometric functions, inverse trigonometric functions, hyperbolic functions, inverse hyperbolic functions, exercises	Gain knowledge complex numbers and their properties	10	11-13
monthly exam	theoretical	Paths, Complex Integration, Exercises, Cauchy-Corsari Theorem, Generalization of Cauchy-Corsari Theorem to a Multicontinuum Region, Indefinite Integrals, Exercises, Cauchy's Integral Formulas, Liouville's Theorem,	Gain knowledge complex numbers and their properties	10	16-20

		Moreira's Theorem, Fundamental Theorem of Algebra, Gauss's Mean Value Theorem, Exercises			
monthly exam	theoretical	Sequences and series inversions, exercises, power series, exercises, Taylor series, exercises, Laurent series, exercises	Gain knowledge complex numbers and their properties	10	21-23
monthly exam	theoretical	Applications of static electricity, exercises, applications of heat flow, exercises,	Gain knowledge complex numbers and their properties	10	26-30
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
Complex Functions and Their Application written by Khaled Ahmed Al-Samarrai and Dr. Hadi Jaber Jaber Mustafa			Required textbooks (methodology if any)		
Complex analysis with application, Asmar Nakhle H_Grafakos, Loukas-Grafakos I, (2018) springer			Main references (sources)		
nothing			Recommended supporting books and references (scientific journals, reports...)		
nothing			Electronic references, websites		

1. Course name
Atomic physics
2. codeThe decision
3. the chapter /year 2025-2026
4. Date preparedDescription 10/20/2024
5. AAvailable attendance forms
6. Number of study hours (total) / Number of units (total)
3 theoretical + 2 practical / 7

7. Course Instructor Name(If more than one name is mentioned)					
Name: Asst. Dr. Zahraa Abbas Rashid Email:					
8. Course objectives					
• Student acquisition of knowledgeThe structure of the atom, the properties of the elementary particles from which it is composed, and the interaction of matter and radiation. • The student acquires knowledge about the concept of modern physics			Course objectives		
9. Teaching and learning strategies					
Use presentation, training, discussion, and brainstorming strategies.					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	the chapter the first Theory Relativity Axes The palace Transfers Galileo, Transfers Galileo		3	1
Assignments and tests	Lecture and discussion	and laws Newton For movement, principle Relativity Newton, -.Theory Relativity Private Einstein,		3	2
Assignments and tests	Lecture and discussion	Transfers Einstein Lorentz),Relativity height,Relativity time,Relativity speed(, mass Relativity, momentum relative, power Relativity,		3	3
Assignments and tests	Lecture and discussion	Energy Kinetics Relativity, relationship between Energy And momentum For a particle relative.Questions.		3	4
Assignments and tests	Lecture and discussion	the chapter the second nature light the introduction, rays electromagnetism Unity radiation,		3	5

Assignments and tests	Lecture and discussion	radiation Thermal, emission And absorption radiation,		3	6
Assignments and tests	Lecture and discussion	radiation body Black ghost radiation For the body Black		3	7
Assignments and tests	Lecture and discussion	Legally Where Riley jeans For radiation,- law Max Plank For radiation,		3	8
Assignments and tests	Lecture and discussion	The phenomenon photovoltaic, explanation Einstein For the phenomenon photovoltaic,:		3	9
Assignments and tests	Lecture and discussion	Applications The phenomenon photovoltaic:1multiplier Photoelectric.2cell Solar Questions.		3	10
Assignments and tests	Lecture and discussion	the chapter the third Composition atomic discovery Activity Radioactive Natural,		3	11
Assignments and tests	Lecture and discussion	Models Atomic) 1.model Thompson For corn, model Rutherford)nuclear(For corn,		3	12
Assignments and tests	Lecture and discussion	theory diffusion For Rutherford, Questions.		3	13
Assignments and tests	Lecture and discussion	the chapter Fourth rays Siniya the introduction, discovery rays Siniya)How to Discovery, explanation Discovery (, characteristics rays Siniya		3	14
Assignments and tests	Lecture and discussion	, generation rays Siniya, measurement intensity rays Siniya, factors that Stop On it intensity rays		3	15

		Siniya,			
Assignments and tests	Lecture and discussion	Spectrum of radiation Siniya, nature deviations rays Siniya, Refraction rays Siniya, phenomenon Compton , absorption rays Siniya, Questions		3	16
Assignments and tests	Lecture and discussion	the chapter Fifth waves and particles the introduction, hypothesis This Broly, Diffraction electrons, waves that Accompany atoms and particles, speed waves This Broly,		3	17
Assignments and tests	Lecture and discussion	speed wave And speed The group, speed The group And speed The particle principle inaccuracy Heisenberg.		3	18
Assignments and tests	Lecture and discussion	Applications The attribute Wave for particles:1microscope electronic, lenses Electrostatic, lenses-Magnetism, Questions.		3	19
Assignments and tests	Lecture and discussion	the chapter Sixth corn Hydrogen the introduction, ghost corn Hydrogen, theory Bor in corn Hydrogen,		3	20
Assignments and tests	Lecture and discussion	deriving energy Linking corn Hydrogen, Find speed The corner For electron,		3	21
Assignments and tests	Lecture and discussion	Hypotheses Bor To explain ghost corn Hydrogen, deriving equation number Wavey Using hypothesis Bor Second,		3	22
Assignments and tests	Lecture and discussion	Transfers electron in corn Hydrogen,		3	23

		a movement nucleus Hydrogen.			
Assignments and tests	Lecture and discussion	Questions		3	24
11. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
12. Learning and teaching resources					
Modern Physics for Science and Engineering. By M. L. Burns First Edition, 2012			Required textbooks (methodology if any)		
- Fundamentals of Modern Physics, authored by Dr. Ghazi Yassin Al-Qaisi, 2007			Main references (sources)		
Iraqi Journal of Physics, Iraqi Journal of Science, Al-Ustadh Journal, Journal of the International Institute of Physics, Journal of the American Physical Society			Recommended supporting books and references (scientific journals, reports...)		
			Electronic references, websites		

1. Course name					
Advanced Mechanics					
2. Course code					
3. semester/year					
2025-2026					
4. Date this description was prepared					
5. Available attendance forms					
My presence					
6. Number of study hours (total) / Number of units (total)					
3/6					
7. Name of the course administrator (if more than one name is mentioned)					
Name: Asst. Dr. Raghad Imad Mahmoud Email:					
8. Course objectives					
• The student will understand vectors and how to apply them. • The student will use vector differentiation and integration in kinematics. • The student's awareness of body dynamics in general and straight line motion in particular. • For the student to understand celestial mechanics. • The student will understand Lagrange and Hamilton equations and use them in body dynamics.				Course objectives	
9. Teaching and learning strategies					
Use presentation, training, discussion, and brainstorming strategies					Strategy
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Questions and answers, daily and monthly exams, and daily assignments		ConceptsBasic: Vectors, Addition, Subtraction, and Multiplication of Vectors	.	3	1
Questions and answers, daily and monthly exams, and daily assignments		Triangular vectors, change of coordinate system, derivative of a vector, position vector of a particle.		3	2
Questions and answers, daily and monthly exams, and		Speed and accelerationIn Cartesian		3	3

daily assignments		coordinates			
Questions and answers, daily and monthly exams, and daily assignments		Speed and acceleration In polar coordinates		3	4
Questions and answers, daily and monthly exams, and daily assignments		Speed and acceleration In cylindrical and spherical coordinates		3	5
Questions and answers, daily and monthly exams, and daily assignments		laws Newton's Three Linear momentum/motion on straight line		3	6
Questions and answers, daily and monthly exams, and daily assignments		Position-dependent force/kinetic and potential energy		3	7
Questions and answers, daily and monthly exams, and daily assignments		Force as a function for time, position, and speed/speed of the end		3	8
Questions and answers, daily and monthly exams, and daily assignments		Velocity-dependent forces: fluid resistance		3	9
Questions and answers, daily and monthly exams, and daily assignments		Motion of a particle in two or three dimensions: Applications of forces acting on a particle		3	10
Questions and answers, daily and monthly exams, and daily assignments		Motion in more than one dimension./Potential energy and conservative forces in two dimensions.		3	11

Questions and answers, daily and monthly exams, and daily assignments		Potential energy and conservative forces in three dimensions.		3	12
Questions and answers, daily and monthly exams, and daily assignments		Some applications of motion in two and three dimensions		3	13
Questions and answers, daily and monthly exams, and daily assignments		lawGravity and its energy /Central field And his energy		3	14
Questions and answers, daily and monthly exams, and daily assignments		momentumThe angular Kepler's three laws Fieldsinverse square		3	15
Questions and answers, daily and monthly exams, and daily assignments		Potential energy in a gravitational field, potential energy in a general central field, energy equation for an orbit in a central locus.		3	16
Questions and answers, daily and monthly exams, and daily assignments		Orbital energies in inverse square fields		3	17
Questions and answers, daily and monthly exams, and daily assignments		Law of conservation of linear momentum/Center of mass/Law of conservation of angular momentum		3	18
Questions and answers, daily and monthly exams, and daily assignments		Law of conservation of energy		3	19

Questions and answers, daily and monthly exams, and daily assignments		Motion of a system of particles/angular momentum of the system		3	20
Questions and answers, daily and monthly exams, and daily assignments		Projectile motion and collision issues		3	21
Questions and answers, daily and monthly exams, and daily assignments		Types of collision/oblique and dispersive collision		3	22
Questions and answers, daily and monthly exams, and daily assignments		Lagrange's equations and their applications		3	23
Questions and answers, daily and monthly exams, and daily assignments		Hamilton's equations and their applications		3	24

11. Course Evaluation

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

12. Learning and teaching resources

Grant R. Fowles, 1970, "Analytical Mechanics"-2 edition, United States of America, by Holt, Rinehart and Winston, Inc.	Required textbooks (methodology if any)
1. Grant R. Fowles "Analytical Mechanics" 7th edition Holt, Rinehart and Winston, Inc. 2. Gerry Ginsberg, "Engineering Mechanics," Cambridge University Press. 3. George W. Housner, Donald E. Hudson, "Applied Mechanics Dynamics" 2nd Edition, printed in United States of America.	Main references (sources)
	Recommended supporting books and references (scientific journals, reports...)

	Electronic references, websites
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Yahya CurrentYahya					Name
yahya.j.yahya@aliraqia.edu.iq					Mail electronic
Curricula And methodsTeaching					Name The material
Annual					Decision Chapter
● RecognitionOn the concept of curricula and the concept of teaching methods. ● RecognitionOn the concept of teaching methods and teaching strategies. ● Recognition On TypesCurricula and teaching methods. ● Giving students the opportunity to learn about the elements of the educational process and to understand the relationship between these elements.. ● Providing The opportunityFor students to acquire teaching skills in a gradual and organized manner . ● Definition StudentsHow to formulate and write behavioral objectives)Classroom questions(. ● Definition Students are important Methods Teaching And its role In The process Educational. ● Get to know Students On Importance Evaluation And its types.					Goals The material
Science and technology, types of curricula, teaching methods, educational techniques, evaluation, textbooks, planning for teaching					Details Basic For the material
LecturesScheduled					Books Methodology
LecturesVarious sources					External sources
The exam Final		Daily exams	Chapter The second	Chapter The first	Estimates Chapter
-	40%	10%	15%	15%	

No There is	Additional information
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Notes	Practical material	The material Theory	Date	week
-	-	FirstThe concept of science and technology-The concept of science and technology. -Ingredients Science And its characteristics.	16/9/2024	1
-	-	-Skills thinking Scientific. - Philosophy Teaching Sciences.	23/9/2024	2
-	-	Secondly: Concepts Basic In The curriculum -The concept of the curriculum in the past and the criticism directed at it.-The modern concept of the curriculum. -Comparison between the ancient concept and the modern conceptFor the curriculum. -Organizations The curriculum)logical And psychology(	9/30/2024	3
-	-	ThirdFoundations of curriculum construction-	7/10/2024	4

		Cognitive basis. - The basis Social .		
-	-	- The basis psychological . - The basis The philosopher .	10/14/2024	5
-	-	Fourth: Types Curricula Study -Curriculum Materials separate	10/21/2024	6
-	-	- Curriculum Activity - Curriculum Units.	10/28/2024	7
-	-	- Broad fields approach-The pivotal approach	4/11/2024	8

13. Course name					
nuclear physics					
14. codeThe decision					
15. the chapter /year					
2025-2026					
16. Date preparedDescription					
17. AAvailable attendance forms					
18. Number of study hours (total) / Number of units (total) 3 theoretical + 2 practical / 7					
3/7					
19. Course Instructor Name(If more than one name is mentioned)					
Name: Email:					
Asst. Prof. Dr. Zeina Jamil Rahim zeanenaya@gmail.com					
20. Course objectives					
• Providing the student with knowledge of the types of nuclei and the components of the atomic nucleus. • To provide the student with knowledge of nuclear models that describe the arrangement of energy levels in the nucleus. • Providing the student with knowledge of nuclear decay reactions. • Providing the student with knowledge of radiation and radiation doses			Half-life of radioactive materials Course objectives		
21. Teaching and learning strategies					
Use presentation, training, discussion, and brainstorming strategies.					Strategy
22. Course structure					
Evaluation	Learning	Name of unit or topic	Required	watche	week

n method	method		learning outcomes	s	
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Introduction to basic concepts (Atomic nature of matter, Boher model of the atom, Composition of nuclear nuclear properties, Nuclear Radii).	Introduction to basic concepts (atomic nature of matter, Bohr model, components of the nucleus, nuclear properties)	2	the first
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Nuclear angular momenta, Nuclear magneton, Parity	nuclear angular momentum, nuclear potential, symmetry	2	the second
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Interaction of Radiation with matter (Interaction of charged particle with matter, Interaction of alpha particles with matter,	Radiation interaction with matter (interaction of charged particles with matter, alpha interaction with matter)	2	the third
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Interaction of beta particles with matter and neutron with matter	Beta interaction with matter, neutron interaction with matter	2	Fourth
Oral exam with	Delivering the lecture through	Interaction of Gamma with matter	Gamma ray interaction with matter	2	Fifth

surprise written exams	the blackboard and display media with interactive student participation				
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Radiation detection Gas-filled counters - ionization chambers, proportional and Geiger counters	Radiation detection (gas meter, ionization chamber meter, Kaiker meter)	2	Sixth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Scintillators - properties of different phosphors Semiconductor detectors: silicon, germanium, units of measuring radiation.)	Flash counter and its properties, semiconductor detectors	2	Seventh
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Nuclear decays and radioactivity(Radioactivity, discovery, Laws of Radioactive Disintegration.	Nuclear decay and radioactivity	2	The eighth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student	Alpha decay	alpha decay	2	Ninth

	participation				
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Beta decay and selection rules	Beta Decay and Selection Rules	2	tenth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Gamma decay and selection rules	Kamma Decay and Selection Rules	2	eleventh
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Nuclear Binding Energy and Nuclear Models (Mass defect. Binding energy per nucleon, Valley of stability).	nuclear binding energy	2	twelfth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Separation Energies for, Alpha, neutron and proton.	Dissociation energy (alpha, neutron and proton)	2	thirteenth
Oral exam with surprise	Delivering the lecture through the	Nuclear Models (Liquid Drop Model and Semi-Empirical mass Formula).	Nuclear models (liquid drop model and	2	fourteenth

written exams	blackboard and display media with interactive student participation		semi-empirical equation)		
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Shell Model	crust model	2	fifteenth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Collective Model	group model	2	sixteenth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Nuclear Reaction (Types of Nuclear Reaction and conservation law, Energetic of nuclear reactions, Reaction Cross section).	Nuclear reactions (types of reactions, conservation laws, and cross section)	2	seventeenth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Coulomb Scattering, Nuclear Scattering, Compound Nucleus, Direct Reaction	Coulomb scattering, complex nuclei, and direct interactions	2	eighteenth

	n				
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Nuclear Fission	nuclear fission	2	nineteenth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Nuclear Fusion	nuclear fusion	2	Twenty
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Accelerators	Accelerators	2	twenty-first
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Accelerator applications	Accelerator applications	2	twenty-second
Oral exam with surprise written	Delivering the lecture through the blackboard	Elementary Particles	elementary particles	2	twenty-third

exams	and display media with interactive student participation				
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Conservation Laws	Conservation laws of elementary particles	2	twenty-fourth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	peaceful uses of nuclear energy	Peaceful uses of nuclear energy	2	twenty-fifth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Uses of Radiation & Radioactive Material	Uses of radiation and radioactive materials	2	twenty-sixth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Nuclear Reactors	nuclear reactors	2	twenty-seventh

Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Biological Effects of Radiation	Biological effects of radiation	2	twenty-eighth
Oral exam with surprise written exams	Delivering the lecture through the blackboard and display media with interactive student participation	Useful Radiation Effects	beneficial effects of radiation	2	twenty-ninth
	Delivering the lecture through the blackboard and display media with interactive student participation	Radiation Protection	radiation protection	2	thirty

Course Evaluation

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

23. Learning and teaching resources

Physics (Dr. Munib Adel, College of Science, Department of Physics, University of Mosul, 1994). Introductory Nuclear Physics (Kenneth S. Kran), 1988.	Required textbooks (methodology if any)
Introduction to Nuclear physics (H. Enge, 1983)	Main references (sources)
Element of Nuclear Physics (W. E. Meyerhof 1967)	Recommended supporting books and references (scientific journals, reports...)
http://www.pa.uky.edu/~rfatemi/phy555	Electronic references, websites

1. Course Title	
Laser Physics	
2. Course Code	
3. Semester / Academic Year	
2025–2026	
4. Date of Preparation	
01-09-2025	
5. Modes of Attendance	
In-class attendance supported by the electronic platform	
6. Total Credit Hours / Total Units	
4 / 2	
7. Course Coordinator	
Name: Prof. Mohammed Abdul Sattar Saleh Email: mohammed.saleh@aliraqia.edu.iq	
8. Course Objectives	
• Introduce students to the fundamentals of laser theory. • Provide students with the basics of laser physics. • Correlate the laws of absorption and emission with practical applications. • Identify the techniques of laser output modulation and mode study. • Study the different types of lasers, their pumping methods, and principles of operation. • Enable students to find practical applications of lasers in various fields.	Course objectives
9. Teaching and Learning Strategies	
• Explaining the course strategy at the beginning of the semester. • Presenting the outlines of physics laws, relations, principles, and related evidence. • Lectures and presentations. • Self-learning. • Open discussions and group work. • Using the whiteboard and e-learning tools. • Highlighting laser applications in daily life. • Encouraging students to explore further details through websites, e-resources, and library references.	Strategy

10. Course Structure					
Assessment Method	Learning Method	Unit / Topic	Intended Learning Outcomes	Hours	Week
Quiz / Homework	Classroom lecture	Interaction of electromagnetic radiation with matter, electromagnetic radiation	Ability to apply physics laws and principles to understand the topic	2	1
Quiz / Homework	Classroom lecture	Blackbody radiation	Ability to simplify problems and analyze phenomena	2	2
Quiz / Homework	Classroom lecture	Absorption, emission, spontaneous emission, stimulated emission	Ability to identify, formulate, and solve laser design and application problems	2	3
Quiz / Homework	Classroom lecture	Energy of the harmonic oscillator (classical – quantum), absorption and emission rates	Ability to represent problems mathematically	2	4
Quiz / Homework	Classroom lecture	Lorentzian curve and linewidth at half intensity	Ability to use physics principles to understand phenomena	2	5
Quiz / Homework	Classroom lecture	Allowed and forbidden transitions, transition cross-section, absorption and gain coefficients	Ability to simplify problems and analyze phenomena	2	6
Quiz / Homework	Classroom lecture	Einstein coefficients, types of excitation in the frequency domain	Ability to solve laser design and application problems	2	7
Quiz / Homework	Classroom lecture	Saturation, level splitting, molecular energy levels	Ability to represent problems mathematically	2	8
Quiz / Homework	Classroom lecture	Laser fundamentals, population inversion, threshold condition	Ability to apply physical laws to understand laser principles	2	9
Quiz / Homework	Classroom	Pumping schemes, pumping power,	Ability to simplify and analyze	2	10

	lecture	pumping methods (optical – electrical (– chemical	phenomena		
Quiz / Homework	Classroom lecture	Resonator design, stability condition, oscillation modes, quality factor	Ability to design and solve laser- related problems	2	11
Quiz / Homework	Classroom lecture	Laser output and modulation, continuous-wave and pulsed operation	Ability to represent concepts mathematically	2	12
Quiz / Homework	Classroom lecture	Laser emission lines selection, frequency stability, mode locking	Ability to understand and analyze laser performance	2	13
Quiz / Homework	Classroom lecture	Quality factor control, methods, energy and power, laser output modulation	Ability to analyze and evaluate results	2	14
Quiz / Homework	Classroom lecture	Midterm Exam	-	2	15
Quiz / Homework	Classroom lecture	Laser beam properties: spectral purity, directionality	Ability to represent problems mathematically	2	16
Quiz / Homework	Classroom lecture	Coherence: temporal and spatial	Ability to understand coherence concepts	2	17
Quiz / Homework	Classroom lecture	Laser emission model, brightness, tuning, ultrashort laser pulses	Ability to analyze phenomena	2	18
Quiz / Homework	Classroom lecture	Types of lasers: solid-state, ruby	Ability to solve laser applications problems	2	19
Quiz / Homework	Classroom lecture	Neodymium laser	Ability to represent problems mathematically	2	20
Quiz / Homework	Classroom lecture	Gas lasers: atomic, ionic	Ability to understand laser types	2	21
Quiz / Homework	Classroom lecture	Molecular gas lasers	Ability to analyze phenomena	2	22
Quiz / Homework	Classroom	Liquid lasers, chemical lasers, semiconductor	Ability to design and evaluate laser applications	2	23

	lecture	lasers, X-ray lasers			
Quiz / Homework	Classroom lecture	Applications of lasers in physics and chemistry	Ability to represent problems mathematically	2	24
Quiz / Homework	Classroom lecture	Lasers in Raman spectroscopy, pollution studies, isotope separation	Ability to apply physics laws in applications	2	25
Quiz / Homework	Classroom lecture	Lasers in nuclear fusion, holography, optical communications	Ability to analyze technological applications	2	26
Quiz / Homework	Classroom lecture	Lasers in industry, life sciences, medicine, and military applications	Ability to solve applied problems	2	27
Quiz / Homework	Classroom lecture	Hazards and safety requirements in laser laboratories	Ability to represent safety-related problems	2	28
Quiz / Homework	Classroom lecture	Comprehensive review	-	2	29
Quiz / Homework	Classroom lecture	Exam	-	2	30

11. Course Assessment

- 50% Daily preparation
- 20% Participation during lectures
- 10% Quizzes
- 10% Homework assignments
- 10% Discipline and attendance in class

12. Learning Resources

Prescribed Textbook

Laser Physics and Some Practical Applications, Siham Afeef Qandala, 198

Main References

- *Quantum Optics and Lasers*, Khalid Al-Khatib & Waleed Khalaf Hammoudi, 1989
- *Principles of Lasers*, Orazio Svelto, translated by Muneam Mashkooor & Sabiha Shareef, 1990
- *Lasers*, Lenkl Bella, translated by Farouq Obeidi,

	1984
Supporting References (recommended journals, reports, etc.)	Scientific journals and technical reports
Electronic Resources:	• Google Scholar, YouTube, and academic/scientific platforms YouTube Channel: mohammedsalih8813

1. Teaching Institution	Al-Iraqia University
2. University Department/Centre	College of Education, Department of Physics
3. Course title/code	Electromagnetic (EM) Fields
4. Modes of Attendance offered	Physical supported by e-learning
5. Semester/Year	2025/2026
6. Number of hours tuition (total)	90
7. Date of production/revision of this specification	15/2/2026
Course Coordinator Name: Prof. Dr. Oday Atta Hammadi Email: oday.hammadi@aliraqia.edu.iq	
8. Aims of the Course	
• Teaching the student an introduction to the fundamentals of electromagnetic (EM) theory • Teaching the student the electromagnetic fields throughout static electric and magnetic fields • Teaching the student the coupling between the effects of electric and magnetic fields • Teaching the student how to find practical applications of electromagnetic (EM) fields	

9• Learning Outcomes, Teaching, Learning and Assessment Method

A- Cognitive goals.

A1. The ability to use physical laws and principles to understand the subject.

A2. The ability to simplify problems and analyze phenomena

A3. The ability to identify, formulate and solve problems related to electromagnetic fields.

A4. The ability to represent the problems mathematically.

B. The skills goals special to the course.

- B1. The students learn independently and take up responsibility
 B2. The student fluent in dealing with others and collaborative work.
 B3. The student respects the opinions of others. The student accepts criticism.

Teaching and Learning Methods

- Explain strategy of the course in the beginning of the semester.
- Outlines of the physical laws and relations, principles and the associated proofs.
- Lectures and power point presentation.
- Self-learning.
- Open discussions.
- Group work.
- Using White Board and e-learning.
- Small project.
- Highlighting the day life applications whenever exist.
- Encourage the students to see more details in the international web sites and reference books in the library.

Assessment methods

- Homework activity
- Assignments
- Group works
- Quizzes
- Midterm exam

C. Effective and value goals

- C1. Students should be able to solve mathematical physics problems using vector calculus.
 C2. Students should have a strong understanding of the fundamental physical concepts associated with static electric and magnetic fields.
 C3. Students should have an understanding of the practical relevance of electrostatic and magnetostatic concepts, such as how lightning rods work, how electric and magnetic fields come from power lines, etc.
 C4. Students should be able to grasp the concepts of time varying fields and the implication of this concepts for future courses and applications.
 C5. Students should be able to communicate effectively through the technical writing of a report.

Teaching and Learning Methods

- Explain strategy of the course in the beginning of the semester.
- Outlines of the physical laws and relations, principles and the associated proofs.
- Lectures and power point presentation.
- Self-learning.
- Open discussions.
- Group work.
- Used Black Board and e-learning.
- Small project.
- Highlighting the day life applications whenever exist.
- Encourage the students to see more details in the international web sites and reference books in the library.

Assessment methods

- Homework activity
- Assignments
- Group works
- Quizzes
- Midterm exam

D. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

D1. Enable students to think and analyze topics related to the intellectual framework and international electromagnetic standards.

D2. Enabling students to think and analyze topics related to electromagnetic fields

D3. Enabling students to think and analyze issues related to the ethics and regulations using electromagnetic radiation and waves and their hazardous effects.

10. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1.	3	EM	Review of vectors, coordinate systems, operators, divergence theorem, Stokes's theorem,	Classroom lecture	Daily test or homework
2.	3	EM	Electrostatic fields, Coulomb's law, electric field intensity	Classroom lecture	Daily test or homework
3.	3	EM	Continuous charge distributions, line charge, surface charge, volume charge, electric flux density	Classroom lecture	Daily test or homework
4.	3	EM	Gauss's law, electric potential, Maxwell equation	Classroom lecture	Daily test or homework
5.	3	EM	Electric dipole	Classroom lecture	Daily test or homework
6.	3	EM	Electric Fields in Material Space, properties of materials	Classroom lecture	Daily test or homework
7.	3	EM	Convection and conduction currents, conductors	Classroom lecture	Daily test or homework
8.	3	EM	Polarization in dielectrics, dielectric constant and strength	Classroom lecture	Daily test or homework
9.	3	EM	Linear, Isotropic and Homogeneous Dielectrics	Classroom lecture	Daily test or homework
10.	3	EM	Continuity Equation and Relaxation Time	Classroom lecture	Daily test or homework
11.	3	EM	Electrostatic Boundary-Value Problems	Classroom lecture	Daily test or homework
12.	3	EM	Poisson's and Laplace's Equations	Classroom lecture	Daily test or homework
13.	3	EM	Resistance and capacitance, parallel-plate capacitor	Classroom lecture	Daily test or homework
14.	3	EM	Magnetostatic Fields, Biot-Savart's law, Ampere's Circuit law	Classroom lecture	Daily test or homework
15.	3	EM	Magnetic flux density, Maxwell's equations	Classroom lecture	Daily test or homework
16.	3	EM	Magnetic Forces, Materials and Devices	Classroom lecture	Daily test or homework

17.	3	EM	Forces Due to Magnetic Fields	Classroom lecture	Daily test or homework
18.	3	EM	Magnetic torque and moment, Magnetic dipole	Classroom lecture	Daily test or homework
19.	3	EM	Magnetization in materials, classification of magnetic materials	Classroom lecture	Daily test or homework
20.	3	EM	Hysteresis curve	Classroom lecture	Daily test or homework
21.	3	EM	Maxwell's equations	Classroom lecture	Daily test or homework
22.	3	EM	Faraday's law	Classroom lecture	Daily test or homework
23.	3	EM	Transformer and dynamic electromotive force	Classroom lecture	Daily test or homework
24.	3	EM	Displacement current	Classroom lecture	Daily test or homework
25.	3	EM	Derivation of electromagnetic wave velocity	Classroom lecture	Daily test or homework
26.	3	EM	Electromagnetic wave propagation	Classroom lecture	Daily test or homework
27.	3	EM	General form of waves, Wave propagation in lossy dielectrics	Classroom lecture	Daily test or homework
28.	3	EM	Plane waves in lossless dielectrics and in free space	Classroom lecture	Daily test or homework
29.	3	EM	Plane waves in good conductors	Classroom lecture	Daily test or homework
30.	3	EM	Poynting vector	Classroom lecture	Daily test or homework

11. Infrastructure

1. Books Required reading:

Elements of Electromagnetics, M.N.O. Sadiku, 3rd edition, Oxford

2. Main references (sources)

- **Introduction to Electromagnetic Fields and Waves, C.A. Holt**
- **Theory of Electromagnetic Fields, A. Wolski**
- **Classical Electromagnetic Theory, J. Vanderlinde, 2nd edition**

A- Recommended books and references (scientific journals, reports...).

B-Electronic references, Internet sites...

Internet sites (Google and YouTube) and academic and scientific media (ResearchGate and Academia)

12. The development of the curriculum plan

- Development of academic content by deletion, addition and replacement.
- Using modern teaching methods according to the nature of the subject and the level of learners from time to time.
- Following information resources to know about the recent achievements of electromagnetic fields, their applications and their relations to the modern life of human.

1. Course Name: Quantum Mechanics					
2. Course Code:					
3. Semester / Year: Year					
4. Description Preparation Date:					
20/2/2026					
5. Available Attendance Forms:					
6. Number of Credit Hours (Total) / Number of Units (Total) 3/					
7. Course administrator's name (mention all, if more than one name)					
Name: wrood kareem					
Email: wrood.k.abood@aliraqia.edu.iq					
8. Course Objectives					
Course Objectives				An overview of the history of the phy of the Quantum mechanics	
9. Teaching and Learning Strategies					
Strategy					
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Schrödinger Equation	Theoretical lectures	Daily and monthly Exam	
2	3	Max Born proposed			
3	3	Probability current density			
4	3	The time independent Schrodinger equation			
5	3	Properties of the wave function			
6	3	The expectation Value			

7	3	Eigen value and Eigen function			
8	3	Operators			
9	3	Eigen values and Eigen function			
10	3	Degeneracy			
11	3	Hermitian operator			
12	3	The properties of a Hermitian operator			
13	3	Expectation Values			
14	3	Deviation			
15	3	The commentator			
15	1	Examination			
16	3	Commute operators			
17	3	Conduction, Electric current, and Solution of Schrödinger equation in one dimension (time independent) current density			
18	3	Square well – potential			
19	3	Infinite Square well potential			
20	3	Angular momentum			
21	3	Spherical harmonics			
22	3	The hydrogen Atom			
23	3	Relative motion			
24	3	Probability density			
25	3	A Hydrogen atom in the state			
26	3	Dirac bra-ket notation			
27	3	Scalar product			
28	3	Pauli – Spin Matrices			
29	1	Examination			

11. Course Evaluation

10. Course Structure

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Introduction to Quantum Mechanics (2 nd Edition): David J. Griffiths
Recommended books and references (scientific journals, reports...)	1- Basic Quantum Mechanics. R. L. White 2- Quantum Mechanics. (Crash Course). Eli

	Zaarur
Electronic References, Websites	http://www.people.fas.harvard.edu/djrin/waves/quantum.pdf

1. Course name					
Educational Laboratory (Educational Media)					
2. Course code					
3. semester/year					
2024-2025					
4. Date this description was prepared					
2/25/2024					
5. Available attendance forms					
In-class and laboratory attendance enhanced by the electronic platform					
6. Number of study hours (total) / Number of units (total)					
2/2					
7. Name of the course administrator (if more than one name is mentioned)					
the name:Dr. Adi Atta Hammadi Email:oday.hammadi@aliraqia.edu.iq					
8. Course objectives					
- Teaching the student an introduction to the basics of educational media. - Teaching the student the stages of development of educational methods. - Teaching the student the relationship between educational media and teaching and learning methods and approaches.					Course objectives
9. Teaching and learning strategies					
- Course strategy explanationwhenBeginning of the semester. - Outline of the laws ofphysicsAnd the relationships, principles and evidence associated with them. - Lectures and PowerPoint presentation. - AFor self-learning. - thediscussiontheOpenAndcrowdsat thea job. - Use of theblackboardAnd e-learning. - Highlight everyday applications wherever they are found. - Encourage students to look at more details intheSitesElectronicandSources andbitterAI came to the library.					Strateg y
10. Course structure					
Evaluation method	Learnin g method	Name of unit or topic	Required learning outcomes	watche s	week
homework	indoor lecture	Advantages of teaching methods Traditional and its disadvantages	The ability to use the laws and principles of physics to understand the subject matter	2	1
Submit a brief report	indoor lecture	Definition of educational media	The ability to simplify issues and	2	2

			analyze phenomena		
Presentation of the brief lecture	indoor lecture	Stages of development means educational	The ability to distinguish, formulate and solve problems related to the fundamentals and principles of physics.	2	3
Rapid test	indoor lecture	The stage of the senses	The ability to represent problems mathematically	2	4
homework	indoor lecture	Teaching aids stage	The ability to use the laws and principles of physics to understand the subject matter	2	5
Submit a brief report	indoor lecture	Communication stage	The ability to simplify issues and analyze phenomena	2	6
Presentation of the brief lecture	indoor lecture	Systems stage	The ability to distinguish, formulate and solve problems related to the fundamentals and principles of physics.	2	7
Rapid test	indoor lecture	Educational Technology	The ability to represent problems mathematically	2	8
homework	indoor lecture	Educational technology	The ability to use the laws and principles of physics to understand the subject matter	2	9
Submit a brief	indoor lecture	importanceEducational tools	The ability to simplify	2	10

report		and educational technology	issues and analyze phenomena		
Presentation of the brief lecture	indoor lecture	Classification of educational media	The ability to distinguish, formulate and solve problems related to the fundamentals and principles of physics.	2	11
Rapid test	indoor lecture	Usage criteria means educational	The ability to represent problems mathematically	2	12
homework	indoor lecture	StandardsUse of means educationalDuring the process Preparation	The ability to use the laws and principles of physics to understand the subject matter	2	13
Submit a brief report	indoor lecture	StandardsUse of means educationalDuring the process theUse	The ability to simplify issues and analyze phenomena	2	14
Presentation of the brief lecture	indoor lecture	StandardsUse of means Educational afterpractical theUse	The ability to distinguish, formulate and solve problems related to the fundamentals and principles of physics.	2	15
Rapid test	indoor lecture	Selection rules and criteria Educational tools	The ability to represent problems mathematically	2	16
homework	indoor lecture	Sources of obtaining Educational tools	The ability to use the laws and principles of physics to understand the subject matter	2	17
Submit a	indoor	The importance of	The ability to	2	18

brief report	lecture	using Educational tools	simplify issues and analyze phenomena		
Presentatio n of the brief lecture	indoor lecture	Obstacles to use Educational tools	The ability to distinguish, formulate and solve problems related to the fundamentals and principles of physics.	2	19
Rapid test	indoor lecture	The role of educational media In improving the process Education and Learning	The ability to represent problems mathematically	2	20
homework	indoor lecture	Educational Communication	The ability to use the laws and principles of physics to understand the subject matter	2	21
Submit a brief report	indoor lecture	Communication features Educational	The ability to simplify issues and analyze phenomena	2	22
Presentatio n of the brief lecture	indoor lecture	design Educational situations	The ability to distinguish, formulate and solve problems related to the fundamentals and principles of physics.	2	23
Rapid test	indoor lecture	What is design? Educational situations	The ability to represent problems mathematically	2	24
homework	indoor lecture	The importance of design Educational situations	The ability to use the laws and principles of physics to understand the subject	2	25

			matter		
Submit a brief report	indoor lecture	Solids	The ability to simplify issues and analyze phenomena	2	26
Presentatio n of the brief lecture	indoor lecture	Types of solids	The ability to distinguish, formulate and solve problems related to the fundamentals and principles of physics.	2	27
Rapid test	indoor lecture	Display boards and educational panels	The ability to represent problems mathematically	2	28
homework	indoor lecture	The four hypothesized patterns From education and its behaviors Proposed	The ability to use the laws and principles of physics to understand the subject matter	2	29
Submit a brief report	indoor lecture	Advantages of teaching methods Traditional and its disadvantages	The ability to simplify issues and analyze phenomena	2	30

11. Course Evaluation

30% Daily Preparation, 20% Summary Report, 20% Interaction During Lecture, 10% Quick Exam, 10% Homework, 10% Classroom Discipline

12. Learning and teaching resources

Principles of Educational Media and Educational Technology, Mufid Al-Shahed, 1st ed., Dar Al-Kitab Al-Mokhtas, Cairo, 2015	Required textbooks (methodology if any)
Educational Visual Aids, Abdul Karim Musa, 1st ed., Dar Al-Ulum, Cairo, 2019	Main references (sources)
	Recommended supporting books and references (scientific journals, reports...)
Google, YouTube, and academic and scientific media	Electronic references, websites

13. Course name

Solid State Physics

14. codeThe decision

15. the chapter /year					
2024-2025					
16. Date preparedDescription					
25-10-2024					
17. AAvailable attendance forms					
Interview/Hall					
18. Number of study hours (total) / Number of units (total)					
3/5					
19. Course Instructor Name(If more than one name is mentioned)					
Name: Asst. Dr. Shorouk Saad Abbas Email:odayhameed85@gmail.com					
20. Course objectives					
• The course aims to enable the student to acquire the ability to understand the structures and properties of solid materials. • crystal structureFor solids andcrystalline state • lattice vibrationWith different dimensions and crystalline defects				Course objectives	
21. Teaching and learning strategies					
• Lectures, discussions, and assigning students to prepare papers on the course topics. • Oral and written tests, assignments, and surprise tests				Strategy	
22. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required learning outcomes	watches	week
Assignments and tests	Lecture and discussion	Crystal structure - crystalline and amorphous states - unit cell - Paravisian and non-Paravisian lattices		3	1
Assignments and tests	Lecture and discussion	Types of lattices - simple cubic - body-centered cubic - octahedral cubic - sodium chloride - cesium chloride - hexagonal lattice structure		3	2
Assignments and tests	Lecture and discussion	Symmetry - Miller's Coefficient - Questions and Problems		3	3
Assignments and tests	Lecture and discussion	Diffraction in crystals - Coherent beams and Braque's law - X-rays		3	4
Assignments and tests	Lecture and discussion	Neutrons - Electrons - Experimental methods of diffraction - Laue method		3	5
		Examination of themonththe first10%			
Assignments	Lecture	Rotary crystal method -		3	6

and tests	and discussion	Powder method - Inverted lattice - Crystal structure factor			
Assignments and tests	Lecture and discussion	Lattice dynamics Lattice movements – Lattice vibration –		3	7
Assignments and tests	Lecture and discussion	Vibration of a single-atom lattice in one dimension - specific heat of the classical lattice theory		3	8
Assignments and tests	Lecture and discussion	Einstein's model - Debye model - thermal expansion		3	9
Assignments and tests	Lecture and discussion	Processors - Network Thermal Resistance		3	10
Assignments and tests	Lecture and discussion	Free electrons - Kaplacion theory of free electrons - Drude theory - Lortz model		3	11
		Examination of themonthAFor the second 10%		3	12
Assignments and tests	Lecture and discussion	Failure of classical theory - Fermi-Dirac statistics of free electrons in three dimensions		3	13
Assignments and tests	Lecture and discussion	Fermi energy - density of specific electronic states		3	14
Assignments and tests	Lecture and discussion	Zone theory of solids - free electrons		3	15
Assignments and tests	Lecture and discussion	Origin of energy gap - Bloch function - Free electron dynamics		3	16
		Examination of themonthAFor the third 10%			
Assignments and tests	Lecture and discussion	Phase velocity and group velocity - effective mass - Hall effect		3	17
Assignments and tests	Lecture and discussion	Metals - Insulators - Semiconductors		3	18
Assignments and tests	Lecture and discussion	Bent dislocation - Periosteal dislocation - Surface defects - Volumetric defects		3	19
Assignments and tests	Lecture and discussion	Superconductivity - Hyperconductivity State - Transitional Magnetic Field		3	20
Assignments and tests	Lecture and discussion	Masner effect - Superconductivity theory - Penetration depth		3	21
Assignments	Lecture	Crystalline defects - petroleum		3	22

and tests	and discussion	defects - gaps			
		Examination of the month A For the fourth 10%			
23. Course Evaluation					
The grade is distributed out of 100 based on the tasks assigned to the student, such as daily preparation, daily, oral, monthly and written exams, reports, etc.					
24. Learning and teaching resources					
Introduction to Solid State Physics, Kittel		Required textbooks (methodology if any)			
Solid State Physics Mu'ayyad Gabriel					
Elementary Solid State Physics		Main references (sources)			
Iraqi Journal of Physics, Iraqi Journal of Science, Al-Ustadh Journal, Journal of the International Institute of Physics, Journal of the American Physical Society		Recommended supporting books and references (scientific journals, reports...)			
www.physics.com www.science.com www.physicstoday.com www.modernphysics.com		Electronic references, websites			

M.Dr. Yahya My neighbor Yahya				Name
yahya.j.yahya@aliraqia.edu.iq				Mail electronic
Education The process - Watching and application(				Name The material
Annual				Decision Chapter
Providing students with concepts and theoretical frameworks that qualify them to conduct the teaching process..				Goals The material
Students begin this preparation by observing: And watching How The original subject teacher Teaching students in classrooms For topics As the view occupies special place In plans and curricula Practical education This is due to Because of its importance to the teacher's life and career Teaching.				Details Basic For the material
Lectures In Education The process-View and apply(				Books Methodology
				External sources
The exam Final	The project	semester The second	The laboratory	semester First

%	-	15%	-	15%
				Additional informatio n

Notes	Scie ntifi c mate rial	The material Theory	Date	S
	1	Overview Definition About Vocabulary and the material Scientific	22/9/2024	1
	1	EtiquetteThe teaching profession- The foundations of good teaching	29/9/2024	2
	1	administrationClass and its organization Questions The class / Its importance And its types	6/10/2024	3
	1	The plan Educational Annual Daily	10/13/2024	4
	1	Watching : Its meaning and instructions which Followed by The student During Watching	10/20/2024	5
	1	Application individual	10/27/2024	6
	1	Application individual	3/11/2024	7

		Application individual	10/11/2024	8
	1	Application individual	11/17/2024	9
	1	Application individual	11/24/2024	10
	1	Application individual	1/11/2024	11
	1	Application individual	8/12/2024	12
	1	Application individual	12/15/2024	13
	1	Application individual	12/22/2024	14
	1	Practical exerciseOn teaching skills	12/29/2024	15
		5/1 - 18/1 Holiday Half The year		
	1	Application The association	20/1/2025	16
	1	Application The association	27 1/2025/	17
	1	Application The association	3/2/2025	18
	1	Application The association	10/2/2025	19
	1	Application The association	17/2/2025	20
	1	Application The association	2/24/2025	21
	1	Application The association	3/3/2025	22
	1	Application The association	10/3/2025	23
	1	Application The association	17/3/2025	24

	1	Application The association	3/24/2025	25
	1	Discussion Reports stomach From Before Students About Application The association	4/31/2025	26
	1	Discussion Reports stomach From Before Students About Application The association	4/7/2025	27
	1	Discussion Problem Laboratories In schools Medium and secondary In Iraq	4/14/2025	28
	1	Discussion Problem-Student dropout from schools	4/21/2025	29
	1	relationship School in the community Discussion Problems Related In the environment School	4/28/2025	30

MDr. YahyaMy neighbor Yahya	Name
yahya.j.yahya@aliraqia.edu.iq	Mail electronic
Measurement and evaluation	Name The material
Annual	Decision Chapter
.1 The student is aware of the importance of measurement and evaluation in education.. .2 Educating the student about the importance of achievement tests in the educational process. .3Enable the student to Achieving general educational goals . .4Providing the student with detailed information about the written, oral and practical tests and the ability to For future use .5Enabling the student to use the test map)Specifications Table(When preparing Questions of all kinds. .6Student familiarity with the psychometric properties of educational tests. .7Enabling the student to achieve all the specifications of good tests)honesty,stability,Objectivity,Comprehensiveness(	Goals The material
Measurement and evaluation concepts, tests, specifications table, psychometric properties	Details Basic For the material

Measurement and evaluation in the educational process .					Books Methodology
Measurement and Evaluation in Education and Psychology, Personality tests					External sources
Lectures Various sources					Estimates Chapter
The exam Final	The project	Chapter The second	The laboratory	Chapter The first	Estimates Chapter
-		20%	-	20%	
No There is					Additional information

Notes	The material The process	The material Theory	Date	week
-	-	Overview Definition About Vocabulary The material Scientific+ Introduction In Measurement and evaluation	16/9/2024	1
-	-	Meaning (Measurement, Testing, Evaluation)	23/9/2024	2
-	-	Importance Measurement and evaluation And the relationship between them+ The relationship Between Evaluation and the curriculum	9/30/2024	3
-	-	Types Evaluation	7/10/2024	4
-	-	Achievement tests Tests The article	10/14/2024	5
-	-	Achievement tests Tests Objectivity	10/21/2024	6
-	-	Achievement tests Oral exams+ Practical	10/28/2024	7

		and performan ce tests		
-	-	Means Non- experimental	4/11/2024	8
-	-	Means Non- experimental	11/11/2024	9
-	-	Building Tests	11/18/2024	10
-	-	Building Tests	11/25/2024	11
-	-	Building Tests	2/12/2024	12
-	-	Building Tests	9/12/2024	13
-	-	Specifications The test Good	12/16/2024	14
-	-	ExamChapter1	12/23/2024	15