Level One (**UGI**)

Semester- **One**

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Mechanics and properties of matters (1)			**Module Delivery**	
Module Type	Core			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PHY 1101**				
ECTS Credits	**8**				
SWL (hr/sem)	**200**				
Module Level		UGI	**Semester of Delivery**		1
Administering Department		Physics	**College**	Science	
Module Leader	Dr. Muthafar F. Al-Hilli		**e-mail**	muthafar.jamil@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Assistant Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Dr. Muthafar F. Al-Hilli Dr. Zainab Raheem Muslim Dr. Amer Abbas Ramadhan		**e-mail**	**muthafar.jamil@sc.uobaghdad.edu.iq** Zainab.muslim@sc.uobaghdad.edu.iq Amer.ramadhan@sc.uobaghdad.edu.iq	
Peer Reviewer Name		Dr. Raad Mohammed Saleh Al-Haddad	**e-mail**	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date		01/10/2024	**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Not applicable	**Semester**	
Co-requisites module	Not applicable	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Ascertain to overcome the difficulties/limitations of students in understanding Newtonian mechanics. 2. To assist the students, possess good comprehension of the mechanics applications being able to meet the needs of the labor market. 3. One of the primary goals of this module is to assist students to develop a conceptual understanding of strategies in solving mechanic exercises. 4. Devise suitable aids and teaching methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 5. Create graduates specialized in physics to contribute in the development of the society.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***A. Cognitive goals*** The expected learning outcomes of the students are 1- To enable the students to understand the basics of motion of objects for different types of motion 2- Describe the motion of objects in terms of their position, velocity and acceleration using words, graphs and equations. 3- Deals with the vectors notations and solving different problems in two and three dimensions 4- State and explain the Newton's three laws in motion and solve word and mathematical problems in mechanics and soling the equation of motion of the object. 5- To create students able to obtain knowledge and understand the laws of mechanics along with its practical applications to analyze the interpretation of physical phenomena. ***B.*** The skills goals special to the program 1- Sound scientific research skills and constructive scientific discussions and expressing of opinions 2- Usage and development skills. 3- Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 4- Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	This course focuses on Newtonian classical mechanics describes motion in terms of space and time. We define motion in one dimension which includes displacement, velocity, and acceleration. It's imperative that we study both graphical and algebraic properties of vectors, motion in two and three dimensions and laws of motion which deal with forces and masses

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ **15** اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	106	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10, 13	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Motion in One Dimension, displacement, velocity and speed, instantaneous velocity and speed.
Week 2	Average acceleration and instantaneous acceleration, Kinematic equations for one-dimensional motion with constant acceleration.
Week 3	Derivation of the equations of linear motion with uniform acceleration, freely falling objects.
Week 4	The equations of freely falling objects, Vectors, coordinate systems.
Week 5	Scalar and vectors, some properties of vectors, commutative law of addition, negative of a vector.
Week 6	Subtracting vectors, multiplying a vector by scalar, components of a vector.
Week 7	**Midterm exam**
Week 8	The product of vectors, scalar product (dot product), vector product (cross product) .
Week 9	Motion in two and three dimensions and laws of motion, Position and displacement.
Week 10	Average velocity and instantaneous velocity, Average acceleration and instantaneous acceleration.
Week 11	Projectiles motion, Uniform circular motion.
Week 12	The Laws of Motion, Force, Newton's first law.
Week 13	Newton's second law, Newton's third law.
Week 14	Some applications of newton's laws, The force of gravity and weight.
Week 15	Normal force, Tension force, Frictional force.
Week 16	**Final exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to the experiments and devices in the mechanics Lab.
Week 2	Introduction to the measurement instruments; Vernier, micrometer, stopwatch, balance, and thermometer
Week 3	Introduction to graph, slope and conversion of units.
Week 4	Simple pendulum
Week 5	Flywheel
Week 6	Standing waves using melds experiment
Week 7	**Midterm exam**
Week 8	Equilibrium of forces.
Week 9	Measurement of the Young's modulus for a helical spring
Week 10	Measurement of terrestrial acceleration using helical spring
Week 11	Terrestrial acceleration using U-tube
Week 12	Archimedes' experiment

Week 13	A micro lab. Experiment using a matlab computer program
Week 14	A mechanical experiment using Arduino micro controller
Week 15	A practical review.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Fundamentals of Physics, by Halliday, Resnick and Wallker.	
Recommended Texts	Fundamentals of University Physics, by Alonso and Finn, Vol.1.	
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Electricity			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PHY 1102**				
ECTS Credits	8				
SWL (hr/sem)	200				
Module Level		UGI	**Semester of Delivery**		1
Administering Department		Physics	**College**	Science	
Module Leader	Dr. Mohammed Ridha Abdulameer		**e-mail**	Mohammed_plasma@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Dr. Mohammed Ridha Abdulameer Dr. Lamiaa Khudhair Abbas Dr. Hadeel Obeid Ismeal		**e-mail**	Mohammed_plasma@sc.uobaghdad.edu.iq Lamia.abbas@sc.uobaghdad.edu.iq hadeel.o@sc.uobaghdad.edu.iq	
Peer Reviewer Name		Dr. Thamir H. Khalaf	**e-mail**	Thamir.Khalaf@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date		01/10/2024	**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Not applicable	**Semester**	
Co-requisites module	Not applicable	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teaching students the basic principles of physics. 2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 3. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in

	thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 4. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 5. The service of preparing graduates specialized in physics who contribute to development in the country. 6. Meeting the needs of various sectors with highly qualified personals in the field of physics. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- The student will be able to explain the effects of matter on electric and magnetic fields and the boundary conditions for such fields. 2-The student will be able to match electrical quantities/properties with the various units of measure used in electrical science and identify the elements of an electrical circuit. 3- The student will be able to distinguish AC and DC electricity, identify the useful qualities of each, note which devices are associated with each, and describe the role of power inverters. 4-The student will be able to Identify and use vector calculus and other mathematical techniques to analyse and express scenarios in electricity and magnetism.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	94	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	10% (10)	5,7 and 10,12	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,4 and 9,11	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	**Charge and the Electric field:** Properties of electric charges, Charging by induction, Coulomb law, Charge is conserved.
Week 2	Electric field, A point charge in an electric field, A dipole in an electric, Electric field of a continuous charge distribution, Motion of charged particles in a uniform electric field.
Week 3	**Gauss's law:** Flux of the electric field, Gauss's law.
Week 4	Gauss's law and Coulomb's law, Conductors in electrostatic equilibrium.
Week 5	**Electric Potential:** Potential and the electric field, A group of point charges.
Week 6	Potential due to a dipole, Electric potential due to a continuous charge distribution.
Week 7	**Midterm Exam**
Week 8	Electric potential due to a continuous charge distribution, Electric potential energy Electric potential due to a charged conductor in equilibrium.
Week 9	**Capacitors and dielectrics:** Capacitance, Calculating capacitance
Week 10	Parallel-Plate Capacitors, Cylindrical and spherical capacitors.
Week 11	Combination of capacitors, Energy density in an electric field.
Week 12	Capacitors with dielectrics. Types of Capacitors.
Week 13	**Current and Resistance:** Current and current density, Microscopic Model of Current, Resistance and Ohm's law
Week 14	Electromotive force, Calculating the current, Potential difference.
Week 15	RC-circuit, Superconductors.

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduce the student to how to write the report, how to draw graphs and calculate the slope, as well as identify the equipment used in the laboratory
Week 2	Introduction about D.C. Current measurement devices D.C.
Week 3	Ohm's Law.
Week 4	Non-linear relationship between the voltage and current for heating resistance.
Week 5	Kirchhoff, s circuit laws.
Week 6	Find the value of unknown resistance "medium value" in a comparison with the resistance of a second known value.
Week 7	**Midterm exam**
Week 8	Exam on the graph and measurement devices
Week 9	Set the resistivity of the wire.
Week 10	Internal resistance of the voltmeter
Week 11	The temperature coefficient.
Week 12	Find the value of unknown resistance by Whetstone's bridge.
Week 13	Comprehensive review of experiences
Week14	Theoretical part exam (semester)
Week 15	Practical part exam (semester)
Week 16	**Final exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Fundamentals of Physics, 8th Edition, David Halliday, Robert Resnick, Jearl *Walker* 2008.	yes
Recommended Texts	1- Fundamentals of Physics Extended, 10th Edition, David Halliday, Robert Resnick, Jearl ***Walker***. August 2013. 2-Fundamentals of Physics Extended, 11th Edition , David Halliday, Robert Resnick, Jearl *Walker* 3-General Physics Practical Binding 4-Electricity and magnetism textbook for the first stage. 5-Practical Physics book by Dr. Siham Afif Qandal. University Physics book by Abdel Amir Abdel Salam. 6-Book of Practical Physics Experiments issued by the University of Berlin.	yes
Websites	Lecture Notes of Massachusetts Institute Technology	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer 1**			**Module Delivery**	
Module Type	Support or related learning activity			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOB 103				
ECTS Credits	**3**				
SWL (hr/sem)	75				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	Computer Science		**College**	College of Science	
Module Leader	Ali Sami Sousa		**e-mail**		
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	M.Sc	
Module Tutor	Ali Sami Sousa		**e-mail**		
Peer Reviewer Name	Dr. Asmaa A. Fahad		**e-mail**	Assmaa.fahad@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Providing lectures to explain essential principles related to computer skills. 2. Projects and activities shared among students. 3. Examinations to gauge students' understanding and identify areas where additional support may be needed. 4. Providing guidance on textbooks, online resources, and supplementary references that can aid students in their studies more efficiently.

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	3	15% (15)	4,9, and 13	1,2,3, and 4
	Assignments	3	15% (15)	4, 8 and 11	1,2,3, and 4
	Projects/ Lab	1	5% (5)	Continuous	All
	Report	1	5% (5)	Continuous	All
Summative assessment	**Midterm exam**	2hr	10% (10)	7	All
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ **15** اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	49	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	26	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**75**		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Computer Fundamentals. Characteristics of Computers, Block Diagram of Computer: Input Unit, Storage Unit, Memory size, Output Unit, Arithmetic Logical Unit, Control Unit, Central Processing Unit, Data Representation: Binary Number System.
Week 2	Memory: Types, Units of memory, RAM, ROM, Secondary storage devices – HDD, Flash Drives, Optical Disks: DVD I/O Devices – Keyboard, Mouse, LCDs, Scanner, Plotter, Printer and Latest I/O devices in market
Week 3	MS Windows: Desktop, My Computer, Files and folders using windows explorer; Control Panel, Searching Files and folders
Week 4	MS Word: Introduction, Environment, Help, Creating and Editing Word Document. Saving Document, Working with Text: Selecting, Formatting, Aligning and Indenting
Week 5	MS Word: Finding Replacing Text, Bullets and Numbering, Header and Footer, Working with Tables, Properties Using spell checker, Grammar, AutoCorrect Feature, Synonyms and Thesaurus
Week 6	MS Word: Graphics: Inserting Pictures, Clipart, Drawing Objects, Using Word Art. Setting page size and margins; Printing documents. Mail Merge Practical
Week 7	**Mid Exam**
Week 8	MS-Excel: Environment, Creating, Opening, and Saving Workbook. Range of Cells. Formatting Cells, Functions: Mathematical, Logical, Date, Time, Auto Sum
Week 9	MS-Excel: Formulas. Graphs: Charts. Types and Chart Tool Bar. Printing: Page Layout, Header and Footer Tab
Week 10	MS PowerPoint: Environment, Creating and Editing presentation, Auto content wizard, using built-in templates
Week 11	MS PowerPoint: Types of Views: Normal, Outline, Slide, Slide Sorter, Slide Show, Creating customized templates; formatting presentations Graphics: AutoShapes, adding multimedia contents, printing slides
Week 12	Internet: Basic Internet terms: Web Page, Website, Home page, Browser, URL, Hypertext, ISP,
Week 13	Web Server Applications: WWW, e-mail, Instant Messaging, Internet Telephony, Videoconferencing, Web Browser and its environment
Week 14	Computer Ethics and Societal Impact: Computer ethics encompass a collection of moral principles that regulate the utilization of computers. It reflects society's perspectives regarding the use of computer hardware and software. These ethical considerations address a range of critical issues, including privacy concerns, intellectual property rights, and the broader societal impact of computer technology.
Week 15	**Preparatory week**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Identifying hardware components (CPU, RAM, storage, etc.); Assemble and disassemble computer hardware components.
Week 2	Installing an operating system (e.g., Windows or Linux); Installing and uninstalling software applications.
Week 3	Understand the principles of data backup and recovery; the Importance of data backup, backup methods, and recovery procedures; Organize, manipulate, and maintain files and folders on a computer or other digital storage devices. It involves tasks such as creating, moving, copying, renaming, deleting, and searching for files.
Week 4	Word Processing. Understanding the Word interface and essential functions; Creating, saving, and opening documents; Formatting documents (headers, footers, styles).
Week 5	Word Processing (continued). Formatting text (font, size, style, and color); Formatting paragraph (alignment, spacing, and indentation); Setting up page layout (margins, orientation, and size).
Week 6	**Mid Exam**
Week 7	Word Processing (continued). Creating and formatting tables; Inserting images, shapes, and text boxes; Adding hyperlinks and bookmarks; Mail merge for personalized documents; Saving a PDF and setting options.
Week 8	MS-Excel. Overview of Excel and its interface; Basic spreadsheet concepts, including rows, columns, and cells; Entering data and formatting; Using basic functions like SUM, AVERAGE, and COUNT; Error handling in formulas; Absolute and relative references.
Week 9	MS-Excel (continued). More advanced functions, including IF, VLOOKUP, and HLOOKUP; Creating and formatting charts and graphs; Types of charts: bar, line, pie, and more; Adding titles, labels, and data labels to charts; Creating and working with Excel tables; Saving a PDF and setting options.
Week 10	MS-PowerPoint Overview of PowerPoint and its interface; Creating a presentation (Choosing a Template/Theme, Changing the Template/Theme, Adding Slides, and Typing in Content); Formating slide layouts (Choosing a Slide Layout, Changing the Slide Layout); Adding and editing text with outline view.
Week 11	MS-Power Point (continued). Adding/Adjusting pictures and graphics (placing pictures into placeholders, cropping photos, sizing graphics, fixing stretched/squished photos, where to get photos, picture border, and effects); Running a presentation (starting and stopping a slide show, ways to navigate slide shows); Saving a PDF and setting options.
Week 12	Using Email: Understanding how to send and receive email is essential for communication in the modern workplace. Basic skills include composing, sending messages, and attaching files
Week 13	Using Web Browsers: Web browsers such as Google Chrome or Mozilla Firefox are used for browsing the internet. Basic skills include navigating websites, using bookmarks, and completing online forms.
Week 14	Understanding computer ethics issues: 1) Divide the students into small groups. 2) Provide each group with (a real-world privacy scenario. For example, a social media company's data collection practices **or** Present a case study involving intellectual property issues, such as software copyright infringement). 3) In their groups, students should discuss the ethical issues raised by the scenario, potential consequences, and possible solutions. 4) Each group presents their findings to the class.
Week 15	**Preparatory week**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	-	
Recommended Texts	Wallace Wang, Absolute Beginners Guide to Computing, Apress, 2016. Michael Miller, Absolute Beginner's Guide to Computer Basics, Que, 2022. Chris Ewin, Carrie Ewin, Cheryl Ewin, Computers for Seniors: Email, Internet, Photos, and More in 14 Easy Lessons, William Pollock, 2017.	**Available online**
Websites	https://ebooks.lpude.in/library_and_info_sciences/DLIS/Year_1/DCAP101_BASIC_COMPUTER_SKILLS.pdf	

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Democracy& Human rights**			**Module Delivery**	
Module Type	**Basic learning activities**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOB 104**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	Physics		**College**	Science	
Module Leader	**Dr. Anwar Ismail Khalil**		**e-mail**	anwar@irco.uobaghdad.edu.iq	
Module Leader's Acad. Title	**Lecturer**		**Module Leader's Qualification**	Ph. D.	
Module Tutor	**Dr. Anwar Ismail Khalil**		**e-mail**	**anwar@irco.uobaghdad.edu.iq**	
Peer Reviewer Name	Dr. Raad Mohammed Saleh Al-Haddad		**e-mail**		
Review Committee Approval	01/10/2024		**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	**1. This course deals with the basic concept of human rights& democracy** **2. Clarifying and training students on the most important principles of human rights and democracy.** **3. Organizing discussions and presentations on the most vital and basic topics affecting community building, related to human rights and democracy.** **4. Adopting teamwork with students to develop their cognitive abilities and create a spirit of cooperation, initiative, creativity and exchange of views in an effort to build the foundations of peaceful community coexistence.**

	5. Providing society with conscious youth aware of the importance of its role in building society, its unity and cohesion through spreading the culture of human rights and establishing the rules of correct democracy. 6.**Human rights guarantee the protection and respect of an individual's interests, even when he or she is not a majority. In a democratic climate, sustainable democratic power cannot be conceived without respecting, protecting and fulfilling human rights. Through their combined influence, they allow the individual a life based on the freedom of self-determination and collective. That is why the protection and realization of human rights truly form the basis of the democratic project.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**Cognitive goals.** **1. Educate students and inform them about the importance of human rights and democracy.** **2. Recognize and understand the methods of teamwork for the exchange of ideas and creative discussions** **3. Developing students' performance through guidance in preparing mini research on modern vocabulary on vital topics related to human rights and democracy.** **4. Providing students with creative development abilities in modern proposals and creative developmental ideas by discussing awareness videos presented on electronic classes.** **5. Developing the skills of sharing opinions and ideas and respecting others opinion.** **6. Objective Skills:** **7. Basic knowledge in the principles of human rights and democracy.** **8. Building the innovative personality of knowledge through online research and the transfer and exchange of information.** **9. Discuss the various properties about everything related to human rights and their importance in our daily lives.** **10. Identify everything related to democracy and the foundations of the performance of the electoral process and its importance in building the nation.** **11. Identify the capacitor and inductor phasor relationship with respect to voltage and current.**
Indicative Contents **المحتويات الإرشادية**	**- Developing the student's analytical and critical skills regarding the reality and future of human rights and democracy** **- Training the student on the importance of active participation in aspects of public life, such as promoting respect for the principles of public human rights and active participation in political and cultural life.** **- Enable students to understand the importance of education and its role in spreading the culture of human rights and democracy in building a civilized society based on good governance, the most important component of which is belief in human rights, education and active participation in governance through free and fair elections.**

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	**The main strategy that will be adopted in delivering this module is to encourage students' participation in the discussions, dialogues and group work lectures & exercises, while at the same time refining and expanding their critical thinking skills. There are many teaching and learning methods used, and the most important of these methods are:** **Theoretical lecture, discussion and dialogue, panel discussions on certain topics, theoretical student research** **Library and electronic activities (which helps students to reach the following results:** **1- The scientific ability to distinguish between correct information and wrong information.** **2- Ease of scientific drafting and ease of correction.** **3. Ability to memorize and guess.** **4- The ability to link concepts and principles with reality.** **5. Ability to invoke, link, interpret.**

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	7	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	0.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3,6 and 10,1 3	LO #1, 2, 10 and 11
	Assignments	4	10% (10)	2,5 and 10, 1 3	LO # 3, 4, 6 and 7
	Attending lectures	1	1%	Continuous	41#15 weeks
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	8	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري مادة حقوق الانسان و الديمقراطية	
	Material Covered **Human rights & Democracy**
Week 1	Familiarity with the concept of human rights and the definitions approaching it, discussing, dismantling and criticizing them in a scientific way in order to reach the most accurate and objective. - Definition of right , of human, of the concept of human rights. Human rights qualities, Types of human rights Human Rights Categories
Week 2	The historical development of human rights: Orcagina Reforms 1- Urnamo Law.2- The law of Ishtar Bit. 3- The law of the Kingdom of Eshnuna.4- Code of Hammurabi.
Week 3	Human rights in other ancient civilizations: 1- Indian and Chinese civilization 2-Pharaonic civilization of Egypt 3- Greek civilization 4- Roman civilization
Week 4	Human rights in heavenly laws Human Rights in Judaism, Human rights in Christianity, Human Rights in Islam.
Week 5	Human rights in Renaissance - modern and contemporary societies Introducing the student to the most important UN document in the field of human rights, which was approved and approved by the Assembly on January 10, 1948 Universal Declaration of Human Rights 1948.
Week 6	Non-governmental organizations defending human rights: Amnesty International, b. International Committee of the Red Cross. Arab Organization for Human Rights.
Week 7	Midterm exam
Week 8	Definition of the phenomenon of administrative corruption, Types of administrative corruption, Causes of administrative corruption. The repercussions of the phenomenon of administrative corruption on human rights and society. Successful treatments to combat corruption and protect society from it.
Week 9	Introduction - Historical development of the concept of democracy, definition of democracy, freedom. The difference between freedom and democracy, The relationship between the rights and public freedoms of individuals and democracy, Islamic views in a democratic system of government, Shura and Democratic System. Specifications and duties of the Islamic ruler reading, the era of Imam Ali "peace be upon him" to his governor over Egypt: Specifications of the Islamic ruler: First: The moral and doctrinal components of the ruler Second: The general culture of the Islamic ruler, Third: Acumen and good choice: -Fourth: Direct relationship with people: Fourth: Direct relationship with people. Duties of the Islamic ruler: First: Social Reform: Second: Achieving security and defense Third: The architecture of the country "economic development"
Week 10	Forms of democracy: (1): Direct democracy ,(2): Semi-direct democracy , (3): Parliamentary democracy (parliamentary representation)4): Liberal Democracy (5): consociation Democracy, (6): Delegated Democracy.
Week 11	Conditions for the success of the elements and pillars of the democratic system General conditions for the success of the democratic system: 1. Respect for human rights, 2. Political pluralism 3. Peaceful transfer of power 4. Political equality 5. Respect the principle of the majority 6. Existence of the rule of law.
Week 12	Components or elements of democracy: 1 – Citizenship 2- Political participation 3. Elections 4. MPs and Responsibility 5. Opposition 6- Separation of government and parliament 7- Constitutional legitimacy
Week 13	The concept of elections and their legal adaptation: First: The concept of election Second: Legal adaptation of the Election, Third: Conditions of Election, Fourth: Concepts of Elections, Fifth: Types of Electoral Systems. Assessing the Democratic System, Pros and

	advantages of the democratic system, Disadvantages and disadvantages of the democratic system, Implementing the democratic system in Iraq.
Week 14	Lobbyists: First: the concept and definition. Second: Types of pressure groups. Third: The methods of pressure groups that they use to achieve their goals. Fourth: Lobbying and Democracy.
Week 15	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Martyrdom verses from the Holy Quran Mohammed Al-Tarawneh et al., International Humanitarian Law, ICRC, Amman, 2005 Diamond Larry, Democracy: Its Development and Ways to Enhance It, translated by Fawzia Naji, Dar Al-Mamoun for Translation, Iraq, 2005.	Yes
Recommended Texts	journal.un.org Hadi, Riad Azabz. (2005). Human rights (evolving contents and protection) (Baghdad).	Yes
Websites		

GRADING SCHEME

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Mathematic I			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**COS 1105**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	Department of Physics		**College**	Science College/ University of Baghdad	
Module Leader	Dr. Zainab Hadi Mahmood		**e-mail**	zainab.mahmood@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Zainab Hadi Mahmood		**e-mail**	zainab.mahmood@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Raad Mohammed Saleh Al-Haddad		**e-mail**	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The objectives of the academic program of teaching mathematics for the first stage in universities typically include the following: 1. **Developing fundamental mathematical skills**: The first stage of university mathematics education aims to develop students' fundamental mathematical skills, including algebra, geometry, trigonometry, and calculus. Students are expected to master these skills to build a strong foundation for more advanced mathematical concepts. 2. **Promoting critical thinking**: Mathematics education in universities aims to promote critical thinking skills by teaching students to solve problems using logical reasoning, deduction, and analysis. Students learn how to approach complex problems and break them down into simpler, more manageable parts. 3. **Fostering creativity**: Mathematics education can also foster creativity by encouraging students to explore new ideas and develop their own approaches to problem-solving. By encouraging creativity, students can develop a deeper appreciation for the beauty and elegance of mathematics. 4. **Preparing students for advanced study**: The first stage of university mathematics education is often a prerequisite for advanced study in mathematics and related fields. Therefore, one of the primary objectives is to prepare students for more advanced coursework by building a strong foundation in fundamental mathematical skills. 5. **Enhancing career prospects**: Mathematics education can also enhance students' career prospects by providing them with the analytical and problem-solving skills that are highly valued in a wide range of industries, including finance, engineering, and computer science. Thus, the academic program of teaching mathematics at the first stage in universities aims to equip students with the necessary skills and knowledge to succeed in their future careers.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***Module learning outcomes in math typically include the following***: 1. ***Knowledge***: Students should be able to demonstrate a comprehensive understanding of mathematical concepts, theories, and principles relevant to the module. 2. ***Problem-solving***: Students should be able to apply mathematical knowledge and skills to solve problems and analyze real-world situations. 3. ***Mathematical reasoning***: Students should be able to use mathematical reasoning to derive conclusions and make predictions based on available data. 4. ***Communication***: Students should be able to communicate mathematical ideas and concepts clearly and effectively, both in writing and orally.

	5. ***Use of technology***: Students should be able to use technology, such as calculators, computer software, and online resources, to enhance their understanding of mathematical concepts and solve problems. 6. ***Independent learning***: Students should be able to engage in independent learning, such as reading relevant literature, conducting research, and applying mathematical concepts to novel problems. 7. ***Critical thinking***: Students should be able to critically evaluate mathematical arguments and solutions, identify potential errors or weaknesses, and propose alternative solutions. 8. ***Numeracy:*** Students should be able to demonstrate proficiency in numerical skills, including arithmetic, algebra, geometry, and statistics, as appropriate to the module. 9. ***Mathematical modeling:*** Students should be able to create and interpret mathematical models of real-world phenomena, using appropriate mathematical tools and techniques. 10. ***Ethics and professionalism***: Students should be able to apply mathematical knowledge and skills in an ethical and professional manner, respecting the rights and dignity of others and adhering to relevant codes of conduct and professional standards.
Indicative Contents المحتويات الإرشادية	The mathematics course for the first stage typically covers a range of fundamental mathematical topics, including calculus, The Rate of change of function,limit , Derivatives of algebraic function and Applications. The course aims to develop students' mathematical skills, including problem-solving, critical thinking, and analytical reasoning, and to prepare them for advanced study in mathematics and related fields.
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	***There are many effective learning and teaching strategies for math, including:*** 1. **Active learning**: In math, active learning can involve solving problems, working on projects, engaging in discussions, and participating in peer instruction. Active learning helps to reinforce concepts and skills, and encourages students to take ownership of their learning. 2. **Visual aids**: Visual aids, such as graphs, diagrams, and illustrations, can help to make abstract concepts more concrete and easier to understand. They can also help to illustrate complex ideas and relationships. 3. **Real-world applications**: Using real-world examples and applications can help to motivate students and show them the relevance of math to their lives and future careers. Real-world applications can also help to illustrate the practical value of mathematical concepts and techniques. 4. **Scaffolding**: Scaffolding involves breaking down complex concepts and skills into smaller, more manageable steps, and providing support and guidance as students work through each step. Scaffolding can help to build students' confidence and competence, and reduce frustration and anxiety.

	5. **Feedback**: Providing timely and constructive feedback is essential for effective learning in math. Feedback can help to identify strengths and weaknesses, reinforce good practices, and provide guidance for improvement. 6. **Collaborative learning**: Collaborative learning involves working in groups or pairs to solve problems, discuss ideas, and provide feedback to one another. Collaborative learning can help to build teamwork skills, deepen understanding of concepts, and promote critical thinking. 7. **Use of technology**: Technology, such as calculators, computer software, and online resources, can be used to enhance learning and teaching in math. Technology can help to visualize abstract concepts, simulate complex systems, and provide interactive and engaging learning experiences. 8. **Differentiated instruction**: Differentiated instruction involves tailoring instruction to meet the diverse learning needs of students. This can involve providing multiple modes of instruction, varying the pace and complexity of instruction, and providing additional support or challenge as needed. **These strategies can be used in combination to create a rich and engaging learning environment for math students.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ **15** أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	112	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10, 13	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**The Rate of change of function**: Coordinates, Increments, Slope of the straight line
Week 2	**The Rate of change of function**: Equation of straight line, functions and graphs
Week 3	**The Rate of change of function**: Ways of combining functions, Behavior of functions
Week 4	**The Rate of change of function**: Slope of curve, Derivative of a function, Velocity and Rate
Week 5	**Limit**: infinity functions
Week 6	**Limit**: Definitions of the limit of a function, Theorems about the limits, more Theorems about the limits
Week 7	**Midterm exam**
Week 8	**Limit**: limit applied areas, the continuity of function
Week 9	**Derivatives of algebraic function**: polynomial functions and their derivatives, Rational functions and their derivatives
Week 10	**Derivatives of algebraic function**: Derivatives of algebraic function: Inverse functions and their derivatives, the increment of function
Week 11	**Derivatives of algebraic function**: Composite functions, Derivatives of composite functions (the chain rule)

Week 12	**Derivatives of algebraic function**: The differentials dx and dy , Formulas for differentiation repeated in the notation of differentials
Week 13	**Applications**: Increasing or decreasing functions (the sign of dx/dy), Related rates
Week 14	**Applications**: Significance of the sign of the second derivatives, Curve plotting, Max. and Min.: Theory , Rolles theorem
Week 15	**Final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Stewart. J. "Calculas", 7th Edition, 2012. 2. Thomas. G. B. & Finney. R. L., "Calculas and Analytic Geometry", 6th Edition, 1984.	yes
Recommended Texts		
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية (اللغة العربيَّة)

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	Basic learning activities			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOB 101**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	Physics		**College**	Science	
Module Leader	**Dr. Leqaa Faleh Owdaa**		**e-mail**	leqaa.falih@ircoedu.uobaghdad.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	**Dr. Leqaa Faleh Owdaa**		**e-mail**	leqaa.falih@ircoedu.uobaghdad.edu.iq	
Peer Reviewer Name	**Assistant lecturer. A'laa Sabah Hammood**		**e-mail**	alaa.sabah@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1- تهدف إلى تنمية روح الإعتزاز باللغة العربيَّة للمحافظة على الهوية العربيَّة. 2- تهدف إلى تأهيل الطلبة بالمعارف والمخرجات الخاصة علم النحو، والصرف، والإملاء؛ لتمكنه من الكتابة الصحيحة والتعبير السليم وتقويم لسانه. 3- تهدف إلى تنمية ذوق الطالب الأدبي وإثراء تحصيله وإغناء زاده من الفكر العربي والإسلامي. 4- تهدف إلى تطوير مهارات الطلاب اللغويَّة التي تؤهلهم للإبداع المتميز. 5- تهدف إلى تنمية مهارات التحدث بـ (اللغة العربيَّة). 6- تهدف إلى الارتقاء بمستوى الطلبة من الجانب المهني والبحثي.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-التعرف على أهم خصائص اللغة العربيَّة وأهميتها في مجال العلم كونها أداة نقل العلم والمعرفة. 2- التعرف على أقسام الكلمة وعلامات كل منها كونها المحور الرئيسي الذي يتألف منها الكلام. 3- التمييز بين المبني والمعرب وعلامات كل منها وتوضيحها بالأمثلة. 4- التعرف على المبتدأ والخبر من حيث تعريفهما وحكمهما وبيان ذلك بالأمثلة التوضيحية. 5- التعرف على النَّواسخ لغة واصطلاحاً وأقسامها وعملها وبيان ذلك بالأمثلة التوضيحية. 6- التعرف على الأعداد وبيان العلاقة بين العدد والمعدود من حيث المطابقة والمخالفة أو الاستعمال بلفظ واحد، ومعرفة التقديم والتأخير بين العدد والمعدود، فضلاً عن معرفة أحكام العدد والمعدود في كل منها. 7- التعرف على المشتقات والذي تعد من أبرز خصائص اللغة العربية التي تميزت بها عن اللغات الأخرى، وبيان حيويتها وقدرتها على استيعاب العلوم والتعبير عنها، وذلك بدراسة أنواع المشتقات واشتقاقاتها واستعمالاتها كـ (اسم الفَاعِل، اسم المَفْعُول، صيغة المبالغة ...). 8- التعرف على جمع التكسير ، وأنواعها (جمع القلة وجمع الكثرة) وأوزانها . 9- التعرف على قواعد كتابة التاء المربوطة والمفتوحة في آخر الألفاظ، وذلك بذكر مواضع كل منها، والتمييز بين الهاء والتاء المربوطة، مع ضبط كتابة التاء المربوطة وفق القاعدة. 10- التمييز بين الضاد والظاء كون مشكلة الفرق بين الضاد والظاء تكمن في النطق والكتابة وذلك بدراسة محاور الفرق بين الضاد والظاء من حيث الاسم والرسم والنطق والمعنى وغير ذلك. 11- التعرف على الهمزة كونها أحد حروف اللغة العربيَّة والتمييز بين همزة الوصل والقطع، وذلك بذكر مواضع كل منها، فضلاً عن قواعد كتابة همزة القطع وصورها المختلفة. 12- تمكن الطالب من استعمال علامات الترقيم في كتابة البحوث والتقارير أو أي نص آخر واستعمالها استعمالاً صحيحاً، لما لها من أثر في توضيح النص بين المتكلم والمتلقي. 13- التعرف على أهم الأغلاط اللغويَّة الشائعة: النحوية والصرفية، والإملائية. 14- التعرف على الشاعر العراقي محمد مهدي الجواهري كونه رمز من رموز الشعر العمودي في العراق، والشاعر بدر شاكر السياب كونه أحد رواد الشعر الحر في العراق.
Indicative Contents المحتويات الإرشادية تتضمن الكلمات المفتاحية المهمة للمحاضرات	- اللغة العربيَّة: خصائصها، مميزاتها، أهميتها. - أقسام الكلمة: الاسم والفعل والحرف. - المبني والمعرب: علامات البناء وعلامات الإعراب. - المبتدأ، الخبر. - النَّواسخ : كانَ وأخواتها، إنَّ وأخواتها، لا النافية للجنس، المشبهات بـ(ليس) ظنَّ وأخواتها، كاد وأخواتها. - العدد: أحكام العدد. - المشتقات: اسم الفَاعِل، اسم المَفعُول، صيغة المبالغة... - جمع التكسير: جمع القلة، جمع الكثرة. - التاء المربوطة والتاء المفتوحة في أخر الألفاظ: التاء المربوطة (القصيرة) في آخر الألفاظ ، التاء المفتوحة (الطويلة، المبسوطة) في آخر الألفاظ. - الفرق بين الضاد والظاء: صوت الضاد – حرف الضاد، صوت الظاء – حرف الظاء. - الهمزة وقواعد كتابتها: همزة الوصل وهمزة القطع. - علامات الترقيم: مواضع علامات الترقيم ، علامات التنقيط. - الأغلاط اللغويَّة الشائعة: الأغلاط اللغوية، النحوية، الصرفية، الإملائية. - الشاعر محمد مهدي الجواهري: حياته، مؤلفاته. - الشاعر بدر شاكر السياب: حياته، مؤلفاته.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	الاستراتيجية الرئيسية التي سيتم تبنيها في تقديم هذه الوحدة هي تشجيع الطلاب على المشاركة في التمارين والتطبيقات النحوية والإملائية، مع تحسين مهارات التفكير والتحليل في الوقت نفسه. ويتم تحقيق ذلك عن طريق الفصول والبرامج التعليمية التفاعلية والنظر في أنواع التطبيقات التي تتضمن بعض الأنشطة التي تهم الطلبة.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**33**	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	**2**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**17**	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	**1.13**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**50**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	3, 9	LO #1 ,2 and 8
	Assignments	2	10% (10)	5, 8	LO # 4 and 6
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	10	LO # ,1,2 ,3,4,5,6,8,9,10,11,12, and 14
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO # 1-6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	**اللغة العربيَّة : خصائصها وأهميتها.**
Week 2	**أقسام الكلمة والمبني والمعرب منها.**
Week 3	**العدد وأحكامه.**
Week 4	**المشتقات: ومنها (اسم الفَاعِل، اسم المفْعُول، صيغ المبالغة ...).**
Week 5	**قواعد كتابة التاء المربوطة والمفتوحة في آخر الألفاظ.**
Week 6	**الهمزة وقواعد كتابتها.**
Week 7	**امتحان نصف الفصل.**
Week 8	**المبتدأ والخبر.**
Week 9	**النّواسخ.**
Week 10	**جمع التكسير وأنواعه.**
Week 11	**علامات الترقيم: تعريفها وأنواعها ومواضع كل منها.**
Week 12	**الفرق بين الضاد والظاء.**
Week 13	**الأغلاط اللغويَّة الشائعة.**
Week 14	**الأدب: الشعراء العراقيون:** **- الشاعر العراقي محمد مهدي الجواهري.** **- الشاعر العراقي بدر شاكر السياب.**
Week 15	**امتحان نهائي.**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	القرآن الكريم. اللغة: التطبيق الصرفي: د. عبده الراجحي. جامع الدروس العربيَّة: الشيخ مصطفى الغلاييني. السلامة اللغويّة: د. علاء حسن مشكور. شرح ابن عقيل: ابن عقيل، تحقيق: محمد محي الدين عبد الحميد. فقه اللغة العربيَّة وخصائصها: د. إميل بديع يعقوب. كيف تكتب بحثاً أو رسالة : د. أحمد شلبي. الوجيز في اللغة العربيَّة: أ.د. محيي هلال السرحان. الأدب العربي: - ديوان بدر شاكر السياب: بدر شاكر السياب. - ديوان الجواهري: محمد مهدي الجواهري. - الشعر العراقي الحديث مرحلة وتطور: د. جلال الخياط.	Yes
Recommended Texts	Electromagnetic theory (book). 2000.vol.1	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electrical-engineering	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Level One (**UGI**)

Semester- **Two**

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Mechanics and properties of matters (2)			**Module Delivery**	
Module Type	Core			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PHY** 1217				
ECTS Credits	**8**				
SWL (hr/sem)	**200**				
Module Level	UGI		**Semester of Delivery**	2	
Administering Department	Physics		**College**	Science	
Module Leader	Dr. Muthafar F. Al-Hilli		**e-mail**	muthafar.jamil@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Muthafar F. Al-Hilli Dr. Zainab Raheem Muslim Dr. Amer Abbas Ramadhan		**e-mail**	**muthafar.jamil@sc.uobaghdad.edu.iq** Zainab.muslim@sc.uobaghdad.edu.iq Amer.ramadhan@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Raad Mohammed Saleh Al-Haddad		**e-mail**	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module	PHY 1101		**Semester**	1	
Co-requisites module			**Semester**		

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	6. Ensure to overcome the difficulties/limitations of students in understanding Newtonian mechanics. 7. To enable the students possess good comprehensive of mechanics applications being able to meet the needs of the labor market. 8. A main goal of this module is to assist students to develop a conceptual understanding of strategies in solving mechanic exercises. 9. Creating suitable aids and teaching methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 10. To offer the community graduates specialized in physics to contribute in the development of the community.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***A. Cognitive goals*** 6- To motivate the students realize and understand the basics of Work and kinetic energy relations. 7- To enable students understand the physics of mechanics from a mathematical point of view. 8- Making the student able to know and understand the basics of mechanics physics through the use of modern software and keeping pace with scientific development. 9- Creating students able to obtain knowledge and understand the laws of mechanics along with its practical applications to analyze the interpretation of physical phenomena. ***C.*** The skills goals special to the program 5- Sound scientific research skills and constructive scientific discussions and expressing of opinions 6- Usage and development skills. 7- Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life; taking into account industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	In this course *we introduce work and kinetic energy, power, conservative force, potential energy, Linear Momentum, In rotation motion we are concerned with angular displacement, velocity, and acceleration. Rolling motion and simple harmonic motion are being studied. Properties of matter deal with concepts of stress, elasticity, tensile properties, as well as compressive, shear, and torsional deformation.*

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	106	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**200**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10, 13	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Work and Energy, work done by a constant force, work done by a general variable force, one –dimensional analysis, three –dimensional analysis.
Week 2	Work and kinetic energy, work–kinetic energy theorem, work done by a gravitational force, work done in lifting and lowering an object.
Week 3	Power, work and potential energy, gravitational potential energy, elastic potential energy.
Week 4	Conservative and nonconservative forces, path independent of conservative force. conservation of mechanical energy, conservation of mechanical energy.
Week 5	work done on a system by an external force, Work done by an applied force (no friction involved), Work done by the force of kinetic friction (friction involved), Conservation of energy.
Week 6	Rotation of a Rigid Object about a fixed axis, The rotational variable angular displacement, velocity, and acceleration, Rotational motion with constant angular acceleration, Angular momentum.
Week 7	**Midterm exam**
Week 8	Kinetic energy of rotation and moment of inertia, Torque, Newton's second law for rotation, Relation between torque and angular.
Week 9	Work in rotational motion, Work and rotational kinetic energy, Power in rotational motion (rotational power).
Week 10	Rolling Motion and Simple Harmonic Motion, Rolling motion of a rigid object, The kinetic energy of rolling, Rolling down a ramp.
Week 11	Conservation of angular momentum, Oscillation motion, The simple harmonic oscillation, Simple harmonic motion (SHM) displacement.
Week 12	The velocity of SHM , The acceleration of SHM, The force law of SHM, Energy in simple harmonic motion.
Week 13	Material properties, Concepts of stress and strain, Elastic deformation, stress–strain behavior, Inelasticity.
Week 14	Elastic properties of materials, Tensile properties, True stress and strain. Elastic recovery after plastic deformation, Compressive, shear, and torsional deformation
Week 15	**Final exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to the experiments and devices of the second course in the mechanics Lab.
Week 2	Introduction to the measurement devices of properties of material.
Week 3	The surface tension using capillary tube
Week 4	Measuring terrestrial acceleration using inclined surface with different inclined angles
Week 5	Measuring terrestrial acceleration using inclined surface with different slotted masses
Week 6	The speed of sound by means of resonance tube closed at one end
Week 7	**Midterm exam**
Week 8	The bifilar pendulum.
Week 9	The radius of gyration for a rolling cylinder
Week 10	the Maxwell's wheel experiment.
Week 11	The Measuring Young modulus of a metallic wire
Week 12	The surface tension using a microscopic slide
Week 13	Measuring viscosity using Ostwald viscometer.
Week 14	A micro lab. Experiment using a matlab computer program
Week 15	A mechanical experiment using Arduino micro controller

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamentals of Physics, by Halliday, Resnick and Wallker.	
Recommended Texts	Fundamentals of University Physics, by Alonso and Finn, Vol.1.	
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Magnetism**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PHY 1218**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	UGI		**Semester of Delivery**	2	
Administering Department	Physics		**College**	Science	
Module Leader	Dr. Mohammed Ridha Abdulameer		**e-mail**	Mohammed_plasma@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Mohammed Ridha Abdulameer Dr. Lamiaa Khudhair Abbas Dr. Hadeel Obeid Ismeal		**e-mail**	Mohammed_plasma@sc.uobaghdad.edu.iq Lamia.abbas@sc.uobaghdad.edu.iq hadeel.o@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Thamir H. Khalaf		**e-mail**	Thamir.Khalaf@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PHY 1102	**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teaching students the basic principles of physics. 2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 3Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking,

	analysis and adaptation with the development of technologies, to keep up with the expansion of human needs. 3. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 4. The service of preparing graduates specialized in physics who contribute to development in the country. 5. Meeting the needs of various sectors with highly qualified personals in the field of physics. 6.Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-The student will be able to explain the relationship between the flow of current and magnetism, and show how this is the basis for electric motors and generators. 2- The student will be able to explain the effects of matter on electric and magnetic fields and the boundary conditions for such fields. 3- The student will be able to apply Maxwell's equations from the empirical laws of electromagnetism. 4-The student will be able to Identify and use vector calculus and other mathematical techniques to analyse and express scenarios in electricity and magnetism.
Indicative Contents المحتويات الإرشادية	This course aims to provide student with effective concept s and basic knowledge of magnetism, including Properties of the magnetic force on a charge moving in a magnetic field and differences between electric and magnetic forces. As well as study and describe the laws of magnetism such as Amperes' law Lenz's law and Faraday's law.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	81	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	175		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	10% (10)	5,7 and 10,12	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,4 and 9,11	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	**The Magnetic Field:** Properties of the magnetic force on a charge moving in a magnetic field, The definition of B.
Week 2	Magnetic force acting on a current- carrying conductor, Torque on a current loop in a uniform magnetic field, Motion of a charged particle in a uniform magnetic field.
Week 3	**Sources of the magnetic field:** The Biot – Savart law.
Week 4	The magnetic force between two parallel conductors, Magnetic field surrounding a thin, straight conductor.
Week 5	Ampere's law.
Week 6	The Magnetic Field Created by a Long Current-Carrying Wire, The Magnetic Field Created by a Toroid and Solenoid, The Magnetic flux.
Week 7	**Midterm Exam.**
Week 8	**Farady's law of induction:** Farady's experiment, Farady's law of induction, Motional emf.
Week 9	Lenz's law, Time varying magnetic fields, Eddy currents,
Week 10	Generators and motors,8 Maxwell's wonderful equations.
Week 11	**Inductance:** Inductance, Calculation of Inductance, Self- inductance.
Week 12	RL circuit
Week 13	Inductance of a Solenoid, Energy in a magnetic field.
Week 14	Energy density stored in the inductor, Mutual inductance.
Week 15	LC Circuit (Electromagnetic Oscillator), The RLC circuit

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduce the student to how to write the report, how to draw graphs and calculate the slope, as well as identify the equipment used in the laboratory.
Week 2	Introduction about A.C. Current measurement devices A.C.
Week 3	Exam on the graph and measurement devices A.C.
Week 4	The application of Ohm's law in a circuit on Induction Coil containing alternating current
Week 5	Ohm's Law application in a circuit alternating containing Capacitor.
Week 6	Account values of Induction and resistance of a coil.
Week 7	**Midterm exam**
Week 8	Find the Reduction Constant of Tangent Galvanometer.
Week 9	Permittivity or (electrical insulation constant).
Week 10	Find the Horizontal component of the Earth, s Magnetic Field.
Week 11	Generating of a Uniform Magnetic Field via Helmholtz Coil.
Week 12	Resonance in A.C. Circuits
Week 13	Comprehensive review of experiences
Week 14	Theoretical part exam (semester), Practical part exam (semester)
Week 15	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1-Fundamentals of Physics, 8th Edition, David Halliday, Robert Resnick, Jearl *Walker* 2008.	yes
Recommended Texts	2-Fundamentals of Physics Extended, 10th Edition, David Halliday, Robert Resnick, Jearl *Walker*. August 2013 3-Fundamentals of Physics Extended, 11th Edition, David Halliday, Robert Resnick, Jearl *Walker* 4-General Physics Practical Binding 5-Electricity and magnetism textbook for the first stage. 6-Practical Physics book by Dr. Siham Afif Qandal. 7-University Physics book by Abdel Amir Abdel Salam. Book of Practical Physics Experiments issued by the University of Berlin.	yes
Websites	Lecture Notes of Massachusetts Institute Technology	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Geometrical Optics			**Module Delivery**	
Module Type	Core			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**PHY 1209**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	UGI		**Semester of Delivery**	2	
Administering Department	physics		**College**	science	
Module Leader	Dr. Asama Natiq Naji		**e-mail**	asama.naje@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Asama Natiq Naji Dr. Fatima Amer Hasan		**e-mail**	asama.naje@sc.uobaghdad.edu.iq fatima.hasan1104@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Kais A. Al Naimee		**e-mail**	kais.a@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module			**Semester**		
Co-requisites module			**Semester**		

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	1. Teaching students the basic principles of physics. 2. Preparing specialists in the field of general physics and its practical applications, which bears the responsibility of studying the country's need for development and progress and capable of meeting the needs of the job market in state institutions and industry sectors. 3. Preparing an educated generation armed with science and adopts it as a sound basis to bring about radical changes and assign scientific knowledge and scientific methods in thinking, analysis and adaptation with the development of technologies, to keep up with the expansion of human needs.

	4. Effective contribution for deepening and documenting the connection of the university with the society through the implementation of advisory counseling, training and development of teaching and administrative staff. 5. The service of preparing graduates specialized in physics who contribute to development in the country. 6. Meeting the needs of various sectors with highly qualified personals in the field of physics. 7. Encouraging the distinguished in this field to work as teaching assistants in the department to be part of the academic teaching staff in the future.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***A. Cognitive goals*** 1- To enable the student to know and understand the basics of physics. 2- To make students able to understand physical phenomena from a optics point of view. 3- Making the student able to know and understand the basics of physics using modern software and keeping pace with scientific development. 4- Enable students to obtain knowledge, understand the scientific laws of physics and its practical applications, logical and scientific analysis, and the interpretation of physical phenomena. ***B. The skills goals special to the program*** 1- Sound scientific research skills and constructive scientific discussions and expressing of opinions. 2- Usage and development skills. 3- Thinking skills and enabling the student to understand and solve scientific problems related to the laws of physics. 4- Skills and ability to apply the theoretical and practical scientific experience, gained from his studies, in the areas of practical life, considering industrial and commercial constraints.
Indicative Contents المحتويات الإرشادية	In this course content a many subjects like nature of light, Plane harmonic waves and phase velocity, refraction of light, the superposition of waves, interference, diffraction and polarization.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering types of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ **15** اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10, 13	LO #3, #4 and #6, #7
	Projects / Lab.	1	1%	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	8	LO #1 - #7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	**Wave optics**. Simple Harmonic motion, the theory of simple harmonic motion, stretching of a Coiled spring.
Week 2	Vibrating spring, Transverse waves, and sine waves.
Week 3	Phase angle, phase velocity and wave velocity.
Week 4	Amplitude and Intensity.
Week 5	Frequency and wavelength
Week 6	Wave Packets.
Week 7	**Mid Term Exam**
Week 8	General discussion.
Week 9	**The superposition of waves.** Addition of simple harmonic motion along the same line. Vector addition of Amplitudes.
Week 10	Superposition of Two wave trains of the same frequency. Superposition of many waves with random phases.
Week 11	Complex waves.
Week 12	Fourier analysis.

Week 13	Group velocity.
Week 14	Graphical relation between waves and group velocity. Addition of simple harmonic motion at right angle.
Week 15	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	General information on optical laboratory.
Week 2	Determination of refractive index of a glass slab using a travelling microscope
Week 3	Verification of the laws of prism
Week 4	Deviation of light by a prism and its measurement
Week 5	Measurement of thickness of a wire using a travelling microscope
Week 6	Determination of radius of curvature of a spherical surface
Week 7	**Mid tem exam.**
Week 8	Measurement of angle of minimum deviation of a prism
Week 9	Determination of refractive index of a liquid using a hollow prism
Week 10	Measurement of refractive index of a solid by total internal reflection method
Week 11	Measurement of angle of incidence and angle of refraction using a spectrometer
Week 12	Determination of refractive index of a liquid using a hollow prism
Week 13	Measurement of the speed of light using a rotating mirror.
Week 14	Total internal reflection
Week 15	**Final Exam.**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamental of Optics by F. Jenkins and H. White	yes
Recommended Texts	Optics by E. Hecht	
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Mathematic II			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**COS 1210**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	UGI		**Semester of Delivery**	2	
Administering Department	Department of Physics		**College**	Science College/ University of Baghdad	
Module Leader	Dr. Zainab Hadi Mahmood		**e-mail**	zainab.mahmood@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Zainab Hadi Mahmood		**e-mail**	zainab.mahmood@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Raad Mohammed Saleh Al-Haddad		**e-mail**	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	COS 1105	**Semester**	1
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	The objectives of the academic program of teaching mathematics for the first stage in universities typically include the following: 6. **Developing fundamental mathematical skills**: The first stage of university mathematics education aims to develop students' fundamental mathematical skills, including algebra, geometry, trigonometry, and calculus. Students are expected to master these skills to build a strong foundation for more advanced mathematical concepts. 7. **Promoting critical thinking**: Mathematics education in universities aims to promote critical thinking skills by teaching students to solve problems using logical reasoning, deduction, and analysis. Students learn how to approach complex problems and break them down into simpler, more manageable parts. 8. **Fostering creativity**: Mathematics education can also foster creativity by encouraging students to explore new ideas and develop their own approaches to problem-solving. By encouraging creativity, students can develop a deeper appreciation for the beauty and elegance of mathematics. 9. **Preparing students for advanced study**: The first stage of university mathematics education is often a prerequisite for advanced study in mathematics and related fields. Therefore, one of the primary objectives is to prepare students for more advanced coursework by building a strong foundation in fundamental mathematical skills. 10. **Enhancing career prospects**: Mathematics education can also enhance students' career prospects by providing them with the analytical and problem-solving skills that are highly valued in a wide range of industries, including finance, engineering, and computer science. Thus, the academic program of teaching mathematics at the first stage in universities aims to equip students with the necessary skills and knowledge to succeed in their future careers.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***Module learning outcomes in math typically include the following***: 11. ***Knowledge***: Students should be able to demonstrate a comprehensive understanding of mathematical concepts, theories, and principles relevant to the module. 12. ***Problem-solving***: Students should be able to apply mathematical knowledge and skills to solve problems and analyze real-world situations. 13. ***Mathematical reasoning***: Students should be able to use mathematical reasoning to derive conclusions and make predictions based on available data. 14. ***Communication***: Students should be able to communicate mathematical ideas and concepts clearly and effectively, both in writing and orally.

	15. ***Use of technology***: Students should be able to use technology, such as calculators, computer software, and online resources, to enhance their understanding of mathematical concepts and solve problems. 16. ***Independent learning***: Students should be able to engage in independent learning, such as reading relevant literature, conducting research, and applying mathematical concepts to novel problems. 17. ***Critical thinking***: Students should be able to critically evaluate mathematical arguments and solutions, identify potential errors or weaknesses, and propose alternative solutions. 18. ***Numeracy:*** Students should be able to demonstrate proficiency in numerical skills, including arithmetic, algebra, geometry, and statistics, as appropriate to the module. 19. ***Mathematical modeling:*** Students should be able to create and interpret mathematical models of real-world phenomena, using appropriate mathematical tools and techniques. 20. ***Ethics and professionalism***: Students should be able to apply mathematical knowledge and skills in an ethical and professional manner, respecting the rights and dignity of others and adhering to relevant codes of conduct and professional standards.
Indicative Contents المحتويات الإرشادية	The mathematics course typically covers a range of fundamental mathematical topics, including calculus, Concept of function and inverse function, The logarithm and exponential function, trigonometric functions and the inverse of trigonometric functions with their derivatives, Hyperbolic functions and the inverse of Hyperbolic functions with their derivatives, Application of finite Integration. The course aims to develop students' mathematical skills, including problem-solving, critical thinking, and analytical reasoning, and to prepare them for advanced study in mathematics and related fields.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	***There are many effective learning and teaching strategies for math, including:*** 9. **Active learning**: In math, active learning can involve solving problems, working on projects, engaging in discussions, and participating in peer instruction. Active learning helps to reinforce concepts and skills, and encourages students to take ownership of their learning. 10. **Visual aids**: Visual aids, such as graphs, diagrams, and illustrations, can help to make abstract concepts more concrete and easier to understand. They can also help to illustrate complex ideas and relationships. 11. **Real-world applications**: Using real-world examples and applications can help to motivate students and show them the relevance of math to their lives and future careers. Real-world applications can also help to illustrate the practical value of mathematical concepts and techniques. 12. **Scaffolding**: Scaffolding involves breaking down complex concepts and skills into smaller, more manageable steps, and providing support and guidance as students work through each step. Scaffolding can help to

	build students' confidence and competence and reduce frustration and anxiety. 13. **Feedback**: Providing timely and constructive feedback is essential for effective learning in math. Feedback can help to identify strengths and weaknesses, reinforce good practices, and provide guidance for improvement. 14. **Collaborative learning**: Collaborative learning involves working in groups or pairs to solve problems, discuss ideas, and provide feedback to one another. Collaborative learning can help to build teamwork skills, deepen understanding of concepts, and promote critical thinking. 15. **Use of technology**: Technology, such as calculators, computer software, and online resources, can be used to enhance learning and teaching in math. Technology can help to visualize abstract concepts, simulate complex systems, and provide interactive and engaging learning experiences. 16. **Differentiated instruction**: Differentiated instruction involves tailoring instruction to meet the diverse learning needs of students. This can involve providing multiple modes of instruction, varying the pace and complexity of instruction, and providing additional support or challenge as needed. **These strategies can be used in combination to create a rich and engaging learning environment for math students.**

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10, 13	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Concept of function and inverse function
Week 2	The logarithm function and exponential function
Week 3	A review for the derivatives' laws, and add the definitions of the trigonometric functions and the inverse of trigonometric functions with their derivatives
Week 4	Solve some examples on the subject (A review for the derivatives' laws, and add the definitions of the trigonometric functions and the inverse of trigonometric functions with their derivatives)
Week 5	Hyperbolic functions and the inverse of Hyperbolic functions with their derivatives
Week 6	Solve some examples on the subject "Hyperbolic functions and the inverse of Hyperbolic functions with their derivatives"
Week 7	**Midterm exam**
Week 8	Integration
Week 9	Application of finite Integration
Week 10	Application of finite Integration
Week 11	Integration methods by part
Week 12	Integration methods by partial fraction (part 1)
Week 13	Integration methods by partial fraction(part 2)
Week 14	Integration methods power Trigonometric, Examples
Week 15	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Stewart. J. "Calculas", 7th Edition, 2012. 2. Thomas. G. B. & Finney. R. L., "Calculas and Analytic Geometry", 6th Edition, 1984.	yes
Recommended Texts		
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A -** Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	General Chemistry			**Module Delivery**	
Module Type	Support or related learning activity			☒**Theory** **Lecture** ☒**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	COS 1211				
ECTS Credits	3				
SWL (hr/sem)	**75**				
Module Level	UGI		**Semester of Delivery**	2	
Administering Department	Department of Chemistry		**College**	Science College/ University of Baghdad	
Module Leader	Dr. Wafaa Waleed Al-Qaysi		**e-mail**	wafa.w@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Wafaa Waleed Al-Qaysi		**e-mail**	wafa.w@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr. Raad Mohammed Saleh Al-Haddad		**e-mail**	raad.m@sc.uobaghdad.edu.iq	
Scientific Committee ApprovalDate	01/10/2024		**Version Number**		
Relation with other Modules العلاقة مع المواد الدراسية الاخرى					
Prerequisite module			**Semester**		
Co-requisites module			**Semester**		

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Objectives أهداف المادة الدراسية	1. Provide students with a comprehensive understanding of the fundamental principles underlying volumetric analysis and quantitative analysis methods. 2. Develop specialists in the field of general chemistry and its practical applications, preparing them to fulfill the country's developmental and industrial needs. 3. Foster a scientifically literate generation that recognizes the value of science as a catalyst for transformative change. This includes cultivating critical thinking skills, promoting analytical thinking, and facilitating adaptability to evolving technologies and societal demands. 4. Strengthen the connection between the university and society by offering advisory counseling, training programs, and professional development opportunities for faculty and staff, ensuring that academic knowledge is effectively applied to real-world contexts. 5. Contribute to the country's overall progress by producing chemistry graduates who possess the skills and knowledge to actively contribute to its development. 6. Address the increasing demand for highly qualified professionals in various sectors that require specialized expertise in chemistry. 7. Encourage exceptional students to serve as teaching assistants within the department, nurturing their potential to become future members of the academic teaching staff and fostering the growth of a knowledgeable and skilled workforce.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	***A. Cognitive goals*** 1- Introduce students to the fundamental principles of volumetric analysis and quantitative analysis methods, establishing a solid foundation in the field. 2- Foster an understanding of the theoretical principles and practical applications of titration, enabling students to detect both inorganic and organic compounds effectively. 3- Provide students with a comprehensive knowledge of volumetric analysis, with a specific focus on titration, and its extensive range of applications in various scientific disciplines. 4- Equip students with the necessary knowledge and skills to proficiently apply classical quantitative analytical methods in diverse laboratory environments. ***B. The skills goals special to the program*** 1- Enhance students' research skills by encouraging them to engage in scientific exploration and facilitating constructive discussions were informed opinions are shared. 2- Develop proficiency in the use and development of laboratory techniques and equipment, enabling students to conduct experiments effectively and obtain accurate results. 3- Cultivate critical thinking skills that allow students to analyze and solve scientific problems related to the laws of chemistry, promoting a deeper understanding of the subject. 4- Foster the development of practical skills and the ability to apply theoretical and empirical scientific knowledge gained through their studies in real-life situations, taking into account industrial and commercial constraints.
Indicative Contents المحتويات الارشادية	The course aims to provide students with a comprehensive understanding of classical titration methods in analytical chemistry. It covers the fundamental principles of acid/base titration, complexometric titration, redox titration, and precipitation titration. Students will delve into the theory behind these methods and explore their wide-ranging applications. In addition to theoretical knowledge, the course emphasizes practical skills. Students will learn how to calculate pH values for various acids, bases, salts, and buffers, enabling them to make accurate determinations in real-world scenarios. They will also develop the ability to evaluate and

	interpret the results obtained from titration experiments, enhancing their analytical capabilities. Throughout the course, selected classical quantitative analytical methods will be highlighted, giving students a deeper understanding of their importance and practical use. By the end of the course, students will have gained the necessary knowledge and skills to apply classical titration methods effectively in analytical chemistry, both in theory and practice.

Learning and Teaching Strategies

إستراتيجيات التعلم والتعليم

Strategies	The module will be conducted using a student-centered approach, placing emphasis on active participation and the cultivation of critical thinking skills. Through a combination of classes, interactive tutorials, and purposeful experiments, students will be actively engaged in the learning process, fostering the development of their critical thinking abilities. The aim is to create an interactive and dynamic learning environment that encourages students to actively participate, think critically, and attain a profound comprehension of the subject matter. By adopting this strategy, students will have the opportunity to apply their knowledge, engage in analytical discussions, and enhance their overall learning experience.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	11	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**75**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10, 13	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	General introduction, what is chemistry and its branches? Branches of analytical chemistry, Quantitati analysis, Qualitative analysis.
Week 2	Weight and concentration unites, Concentration, The mole, Examples, Molarity, Normality. Percent concentrations, Part per million,
Week 3	Calculations of equivalent weight, Converting of percentage to molarity. The dilute solutions, Preparatio of solid materials solutions, Preparation of liquid materials solutions
Week 4	Chemical equilibrium, Types of equilibrium, Equilibrium constants (Ionic -product constant of water. Solubility and Solubility product constant, examples, calculations.
Week 5	Dissociation of a weak acid or base, Hydrolysis constant (KH),
Week 6	Volumetric Methods of Analysis, Requirements for a primary standard, Volumetric Calculations for Acid-Base Titrations.
Week 7	**Mid Term Exam**
Week 8	Equilibrium in acid-base solutions, Calculating the pH of weak acids and base solutions, Calculating the pH of salts solutions, 1-Salt differential from strong acid and strong base.
Week 9	2-Salt differential from weak acid and strong base, 3-Salt differential from strong acid and weak base, 4-Salt differential from weak acid and weak base.
Week 10	Buffer Solutions, Calculating the pH of Buffer solutions, Buffer capacity, Acid – Base Titration, Acid – Base Indicators, Methyl Orange, Phenolphthalein
Week 11	Titrating a Weak Acid with a Strong base, Differential titration, Titration mixtures of two acids, Titration one Base or Mixture of two Bases with Strong Acid.
Week 12	Precipitation titrations, Solubility, The Solubility of Precipitates. Applying solubility-product constants, Common Ion Effect on Solubility.
Week 13	Oxidation-Reduction Titration, Indicators in oxidation-reduction titrations.
Week 14	Complexometric titration, Types of ligands, Complex formation constant, EDTA equilibrium, Titration curve of EDTA
Week 15	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Learn about laboratory tools and equipment and how to use them.
Week 2	Learn the principles of descriptive analysis and the descriptive interactions of the first group of ions
Week 3	A test on the analysis of information samples for the first group, based on the descriptive analysis
Week 4	A test on the analysis of the anonymous samples of the first group, based on the descriptive analysis
Week 5	Characteristic descriptive interactions of the second group ions
Week 6	A test on the analysis of the known samples of the second group

Week 7	**Mid Term Exam**
Week 8	A test on the analysis of anonymous samples of the second group
Week 9	Calculations of volumetric analysis, preparation of approximately (0.1N) HCI and (0.IN) sodium carbonate,
Week 10	Standardization of HCl solution with standard solution of Na_2CO_3.
Week 11	Analysis of a mixture (sodium hydroxide + sodium carbonate)
Week 12	Analysis of a mixture (sodium bicarbonate + sodium carbonate)
Week 13	Oxidation-reduction reactions, A: Preparation of 0.1N potassium permanganate, Preparation of 0.1 N sodium oxalate ($Na_2C_2O_4$).
Week 14	Determination the concentration of ferrous ion. Complexometric titration, Determination of total hardness (permanent and temporary) of water
Week 15	**Final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Fundamental of analytical chemistry by Skoog, West, Holler & Crouch, 8th, 2004.	Yes
Recommended Texts	1-Fundamental of analytical chemistry by Skoog, West, Holler, 6th, 1992. 2-Principles of instrumental analysis by Skoog, West, Holler & Crouch, 8th, 2004. 3-K. Burger D, Sc, "Organic regents in metal analysis", 1st, New York, 1973. 4-J.N. Miller & J.C. Miller" Statistical for anal. Chem.", 2nd, New York,1988.	
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks %	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks with decimal places above or below 0.5 will be rounded to the higher or lower full mark accordingly. For instance, a mark of 54.5 will be rounded up to 55, while a mark of 54.4 will be rounded down to 54. The University strictly adheres to a policy that does not allow for "near-pass fails," and therefore, the only adjustment made to the marks awarded by the original marker(s) will be the automatic rounding as described above.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	English Language (1)			Module Delivery	
Module Type	Basic learning activities			☒ Theory ☐ Lecture ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	UOB 102				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	UGI		Semester of Delivery	2	
Administering Department	Physics		College	Science	
Module Leader	Zahraa Abdulhussien Abd Ali		e-mail	Zahraa.a@sc.uobaghdad.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		Module Leader's Qualification	M. Sc.	
Module Tutor	Zahraa Abdulhussien Abd Ali		e-mail	Zahraa.a@sc.uobaghdad.edu.iq	
Peer Reviewer Name	Dr.Farah Tariq M.Noori		e-mail	farah.noori@sc.uobaghdad.edu.iq	
Scientific Committee Approval Date	01/10/2024		Version Number	1.0	
Relation with other Modules العلاقة مع المواد الدراسية الأخرى					
Prerequisite module	None		Semester		
Co-requisites module	None		Semester		

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	New Headway Beginner Plus is a Beginner course in English intended to provide students with the fundamentals of the language and a foundation at First Year students / college of science, moving towards a higher level of proficiency at this stage. 1. Listening Objectives: • Understand and respond to basic greetings, introductions, and simple instructions. • Comprehend and extract information from short, simple spoken passages related to everyday topics. • Identify and understand common vocabulary and expressions in spoken English. 2. Speaking Objectives: • Engage in basic conversations using simple greetings, introductions, and expressions related to personal information. • Ask and answer simple questions about personal details, daily routines, and familiar topics. • Participate in short dialogues and role-plays to practice communication skills. 3. Reading Objectives: • Read and comprehend simple texts, such as signs, labels, short passages, and dialogues. • Recognize and understand basic vocabulary words and phrases in context. • Extract information from texts related to everyday situations and topics. 4. Writing Objectives: • Write short sentences and paragraphs about personal information, experiences, and familiar topics. • Fill out basic forms with personal details, such as name, age, and nationality. • Write simple messages, notes, and emails related to everyday situations. 5. Vocabulary and Grammar Objectives: • Acquire a basic vocabulary related to common topics, such as greetings, numbers, time, family, food, and everyday objects. • Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms. • Recognize and use common prepositions, articles, and basic sentence structures. 6. Cultural Awareness Objectives: • Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries. • Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of the course, the students will be able to: 1. Listening and Speaking Skills: • Understand and respond appropriately to basic questions and statements. • Engage in simple conversations related to personal information, daily routines, and immediate surroundings. • Follow simple instructions and directions. • Develop basic pronunciation and intonation skills. 2. Reading Skills: • Recognize and understand basic vocabulary words and phrases in simple texts. • Comprehend and extract information from short, simple texts such as signs, notices, and labels. • Understand basic sentence structures and common grammatical patterns. 3. Writing Skills: • Write simple sentences and short paragraphs about personal information, experiences, and familiar topics. • Fill out simple forms and write basic personal information. • Write simple messages, notes, and emails related to everyday situations. 4. Vocabulary and Grammar: • Acquire and use a basic range of vocabulary related to everyday topics, such as greetings, numbers, time, family, food, and common objects. • Understand and use basic grammatical structures, including present simple, present continuous, simple past, and basic question forms. • Recognize and use common prepositions, articles, and basic sentence structures. 5. Cultural Awareness: • Develop an understanding of cultural customs and practices related to greetings, social norms, and everyday interactions in English-speaking countries. • Gain exposure to cultural elements through reading or listening to texts about customs, traditions, and holidays.
Indicative Contents المحتويات الإرشادية	1. Use simple forms of polite expressions to establish basic social contact and to perform everyday functions including making requests and offers, conducting simple phone conversations, asking and telling time, giving simple directions, asking about price, ordering a meal, etc. 2. Use a narrow range of positive and negative adjectives to describe objects, people and places. 2.3. Exchange information by forming and responding to simple questions. 3. Produce simple sentences using the correct word order and punctuation marks. 4. Use capital and lower case letters accurately in writing.

	5. Construct a short guided paragraph on a familiar topic concerning home, family, friends and holidays. 5. Use the basic tenses including the present and past simple, and present continuous correctly. 6. Use the basic auxiliary verbs (am/is/are/was/were/can) and a range of regular and irregular verbs. 7. Demonstrate awareness of the essential grammatical features and functions including questions and negatives, plural nouns, frequency adverbs, possessives, pronouns and determiners.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1.Communicative Approach: Emphasize communicative activities that promote interaction among students. Encourage pair and group work, role-plays, and discussions to practice language skills in meaningful contexts. 2.Integrated Skills: Integrate the four language skills (speaking, listening, reading, and writing) in lessons to create a balanced approach to language learning. Provide opportunities for students to use and develop these skills simultaneously. 3.Vocabulary Expansion: Incorporate vocabulary-building exercises and activities throughout the course. Use real-life contexts, visuals, and practical examples to help students learn and remember new words. 4.Grammar Focus: Teach and reinforce grammar structures in a systematic and progressive manner. Provide clear explanations, examples, and practice exercises to ensure students understand and can apply the grammar rules correctly. 5.Authentic Materials: Include authentic texts, such as articles, newspaper clippings, songs, and videos, to expose students to real-world language usage. This helps develop their reading and listening comprehension skills and exposes them to cultural aspects of English-speaking countries. 6.Cultural Awareness: Integrate cultural topics and discussions into the lessons to foster cultural awareness and sensitivity. Encourage students to share their own cultural backgrounds and experiences to promote understanding and appreciation of diverse perspectives. 7.Error Correction: Provide constructive feedback and error correction during speaking and writing activities. Help students identify and correct their mistakes, focusing on accuracy while encouraging fluency and self-expression.

	8.Technology Integration: Utilize technology tools, such as interactive whiteboards, online resources, and language learning apps, to engage students and enhance their language learning experience. Incorporate multimedia materials for listening and speaking practice. 9.Regular Assessment: Assess students' progress regularly through quizzes, tests, and assignments. Provide timely feedback to guide their learning and address areas that need improvement. 10.Individualization: Cater to the individual needs and learning styles of students. Offer differentiated tasks and activities to ensure all learners are appropriately challenged and supported. 11.Cooperative Learning: Promote collaboration and teamwork among students through pair work, group projects, and peer feedback. This encourages active participation and a supportive learning environment. 12.Review and Revision: Schedule regular review sessions to consolidate previously learned material. Encourage students to revise and practice independently, providing resources for self-study and additional practice.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ **15** اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	10% (10)	3,6 and 10,13	LO #1, #2 and #10, #11
	Assignments	4	10% (10)	2,5 and 10, 13	LO #3, #4 and #6, #7
	Projects	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	8	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Hello! p6 ***am/are/is, my/your*** *I'm Pablo.* *My name's Judy.* *What's your name?* p6 ***This is ...*** *This is Ben.* *Nice to meet you.* p7
Week 2	Your world p12***he/she/they, his/her*** *He's from the United States.* *Her name's Karima.* p13 *They're on holiday.* p16 Questions *What's his name?* *Where's she from?* p13
Week 3	All about you p18 ***am/are/is*** *We're all singers.* p20

	Negatives *She isn't a nurse.* p18 *I'm not from Scotland.* p20 *They aren't builders.* p20 Questions *What's her address? How old is she?* *Is she married?* p19 Short answers *Yes, she is. / No, she isn't.* p20
Week 4	# Family and friends p24 **Possessive adjectives** *my, your, our, their* p24 **Possessive *'s*** *Annie's husband Jim's office* p24 ***has/have*** *I have a small hotel. She has a job.* *We have three sons.* p27 **Adjective + noun** *a small hotel a big house a good job* p27*apples, beer, bread, cake* p36 **Shopping** *newsagent's, chemist's,* *off-licence* p36 **Can you come for dinner?** *Would you like some* *more rice?* *Could you pass the* *salt, please?* *How would you like* *your coffee?* *This is delicious!* p37
Week 5	# The way I live p32 **Present Simple *I/you/we/they*** *I like ice-cream. I don't like tennis.* *Do you like football?* p33 *Where do you work? Do you live in Dundee?* p34 *In Brazil they speak Portuguese.* p36 ***a* and *an*** *a waiter, an actor, an Italian restaurant* p34 **Adjective + noun** *an American car Spanish oranges* p37
Week 6	# Every day p40 **Present Simple *he/she*** *He gets up at 6.00.* *He has lunch in his office.* p42 *She lives in a small house.* p44 Questions and negatives *What time does he have breakfast?* *He doesn't live in London.* p43 **Adverbs of frequency** *He always works late.* *He never goes out.* p42
Week 7	Mid-term Exam
Week 8	# My favourites

	p48 **Question words** *who, where, why, how* p48 **Pronouns** Subject/Object/Possessive *I/me/my we/us/our they/them/ their* p49 ***this* and *that*** *I like this wine. Who's that?* p50
Week 9	# Where I live p56 ***There is/are …*** *There's an old sofa.* *Are there any armchairs?* *There are some books.* p57 **Prepositions** *in, on, under, next to* p58
Week 10	# Times past p64 ***was/were born*** *When were you born?* *I was born in 1996.* p65 **Past Simple – irregular verbs** *went, came, saw* *She went shopping.* p68
Week 11	# We had a great time! p72 **Past Simple – regular and irregular** *played, got, watched, did* p72 Questions *What did you do?* *Did you go out?* p73 Negatives *They didn't go to work.* p73 ***ago*** *I went to Rome ten years ago.* p78
Week 12	# I can do that! p80 ***can/can't*** *He can speak French. I can't draw.* *Can she run fast?* p80 **Adverbs** *I can cook a little bit. I can't cook at all.* *really well, fluently* p82 **Requests and offers** *Can you tell me the time? Can I help you?* p83
Week 13	# Please and thank you p88 ***I'd like …*** *I'd like some ham.* *How much would you like?* p88 ***some* and *any*** *I'd like some cheese.* *Do you have any Emmental?* *I don't have any apple juice.* p89

	like **and** ***would like*** *I like Coke.* *I like going to the cinema.* *I'd like to go out.* p91
Week 14	Here and now p96 **Present Continuous** *She's wearing a T-shirt.* *What's he doing?* p97 **Present Simple and Present Continuous** *He lives in London.* *They're staying in a hotel.* p98
Week 15	It's time to go! p104 **Future plans** *They're going on holiday.* *Which countries are you going to visit?* *I'm leaving on Tuesday.* *What are you doing this evening?* p104 **Revision** Question words – *when, where, who, how* p106 Tenses – present, past, and future tenses p110
Week 16	Final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Soars, John and Liz, (2011), New Headway Plus, Special Edition, Beginner Level, Oxford University Press.	Yes
Recommended Texts	New Headway Plus provides an integrated skills course with each unit divided into grammar, vocabulary, skills work and everyday English segments	yes
Websites	Oxford University Press: The New Headway series is published by Oxford University Press. Visit their website at www.oup.com and search for "New Headway Plus, Special Edition, Beginner Level " or browse their English language teaching section for information on the course.	

Grading Scheme مخطط الدرجات				
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