MODULE DESCRIPTION FORM

Module Information					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	**Supportive**			☒ **Lecture**	
Module Code	**UOWA103**				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	**Medical Physics**		**College**	College of Science	
Module Leader	Ayad Karim		**e-mail**	ayadalsalahi@uowa.edu.iq	
Module Leader's Acad. Title	Prof. Dr.		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Ayad Karim		**e-mail**	ayadalsalahi@uowa.edu.iq	
Peer Reviewer Name	**Karrar Sadiq Mohsen**		**e-mail**	karar.sadeq@uowa.edu.iq	
Scientific Committee Approval Date	**2024-12-09**		**Version Number**	V 1.0	

Relation with other Modules			
Prerequisite module	-	**Semester**	-
Co-requisites module	-	**Semester**	-

Department Head Approval

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Module Aims, Learning Outcomes and Indicative Contents	
Module Objective	The objectives of this course in Arabic Language are focused on introducing students to the fundamental rules of correct spelling and orthography, enabling them to avoid errors in written expression and to develop proficiency appropriate to their cultural and academic level. The main objectives include: 1. Understanding the fundamental principles of Arabic orthography necessary for academic study and future professional practice. 2. Developing the ability to apply these rules accurately and with ease, without the need for rote memorization. 3. Identifying and avoiding common spelling and linguistic errors. 4. Acquiring the ability to express ideas correctly and independently. 5. Recognizing the importance of Arabic language in personal and professional life, expanding linguistic repertoire, and diagnosing and addressing common difficulties and errors.
Module Learning Outcomes	Upon successful completion of this module, students will be able to: 1. Explain the fundamental rules of writing in Arabic. 2. Apply linguistic knowledge accurately and with confidence. 3. Analyze basic linguistic structures and simple texts relevant to daily life. 4. Demonstrate self-confidence and the ability to communicate effectively. 5. Correct and overcome their own basic linguistic errors.
Indicative Contents	1. Promoting the use of the Arabic language among members of society to open new horizons for linguistic development and support. 2. Addressing the challenges faced by society in education, particularly in the teaching of Arabic, and exploring effective solutions to enhance linguistic competence. 3. Utilizing modern communication tools such as the internet and digital resources in the learning process.

Learning and Teaching Strategies	
Strategies	A variety of simple yet effective strategies can be employed to enhance the learning process, making it both engaging and beneficial. These include: 1. Numbered Heads Together Strategy 2. Popsicle Sticks Strategy 3. Think–Pair–Share Strategy 4. Cube Strategy 5. Correct the Error Strategy 6. Hot Seat Strategy

Student Workload (SWL)			
Structured SWL (h/sem)	28	**Structured SWL (h/w)**	2
Unstructured SWL (h/sem)	19	**Unstructured SWL (h/w)**	1
Total SWL (h/sem)	47 + 3 Final Exam = 50		

Module Evaluation					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (5)	3,10	1,2,4,6
	Project	1	10% (10)	13	all
	Online Assig.	2	10% (5)	6,11	4,5
	Reports	1	10% (10)	9	2,5
Summative assessment	**Midterm Exam**	2 hr.	10% (10)	7	1 – 7
	Final Exam	3 hrs.	50% (50)	16	all
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	An introductory introduction to the science of spelling, its founder, and its advanced development
Week 2	The initial hamza
Week 3	Middle hamza 1
Week 4	Middle hamza 2
Week 5	extreme hamza
Week 6	The extreme hamza and the fatha tanween
Week 7	The tied taa and the extended taa
Week 8	Da’a and Tha’a
Week 9	Al-Maqsura Alif
Week 10	Letters of Augmentation and Omission
Week 11	Number and Counted Noun (1)
Week 12	Number and Counted Noun (2)
Week 13	Number and Counted Noun (3)
Week 14	Shaddah and Maddah
Week 15	Preparing for the Final Exam

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	• الإملاء الفريد، نعوم جرجيس زرازير ، مكتبة اللغة العربية ، بغداد- العراق، ط6، 2017م. • الإملاء الواضح، عبد المجيد النعيمي، مكتبة دار المتنبي، بغداد- العراق، ط3، 1967م.	Yes
Recommended Texts	الإملاء الفريد، نعوم جرجيس زرازير ، مكتبة اللغة العربية ، بغداد- العراق، ط6، 2017م. الإملاء الواضح، عبد المجيد النعيمي، مكتبة دار المتنبي، بغداد- العراق، ط3، 1967م.	NO
Websites	Lisān al-‘Arab Digital Library (مكتبة لسان العرب الإلكترونية) Alukah Network (شبكة الألوكة) Fasih Platform (موقع فصيح) Nargis Digital Library (مكتبة نرجس الإلكترونية) Al-Waqfeya Digital Library (المكتبة الوقفية الإلكترونية) Noor Digital Library (مكتبة نور الإلكترونية)	

Grading Scheme				
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

Module Information					
Module Title	**Electricity and magnetism**			**Module Delivery**	
Module Type	**basic**			☒ **Theory** ☐**Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**MPH201**				
ECTS Credits	**8**				
SWL (hr/sem)	**200**				
Module Level		1	**Semester of Delivery**		2
Administering Department		Medical Physics	**College**	College of Sciences	
Module Leader	Ahmed Mousa Jaafar		**e-mail**	ahmed.mo@uowa.edu.iq	
Module Leader's Acad. Title		Assistant Dr.	**Module Leader's Qualification**		Ph.D.
Module Tutor	Assist.Lec. Alhanoof Salam Shakir		**e-mail**	alhanoof.salam@uowa.edu.iq	
Peer Reviewer Name		Assist.Lec.Saja Basim Ali	**e-mail**	Saja.b@uowa.edu.iq	
Scientific Committee Approval Date		2025-4-19	**Version Number**		V 1.0

Relation with other Modules			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Department Head Approval

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Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	The course aims to provide students with information and skills in static electricity and magnetism necessary for the undergraduate level. Potentially qualifying undergraduate studies in the physical sciences, building a strong background for those who will continue to study materials related to the applications of static electricity and magnetism.
Module Learning Outcomes	1. Recognizing the Charges at rest: Electrostatics Charges in motion: Electric current. 2. Explaining COULOMBS LAW AND ELECTRIC FIELDS 3.. Explaining CURRENT, RESISTANCS. 4 . Discussing the reaction and involvement of atoms in electric circuits. 5. Describing electrical power, charge, and current. 6. Defining Ohm's law. 7 .Explaining the LENZ S LAW 8. Identifying the basic circuit elements and their applications. 9. Discussing the Magnetism force in magnetic field. 10. Discussing the magnetic moment , magnetic field.
Indicative Contents	DC circuits – Current and voltage definitions, Passive sign convention and circuit elements, Combining resistive elements in series and parallel. Kirchhoff's laws and Ohm's law. Anatomy of a circuit, Network reduction, Introduction to mesh and nodal analysis. AC circuits I – Time dependent signals, average and RMS values. Capacitance and inductance, energy storage elements, simple AC steady-state sinusoidal analysis. AC Circuits II - Phasor diagrams, definition of complex impedance, AC circuit analysis with complex numbers. RL, RC and RLC circuits - Frequency response of RLC circuits, simple filter and band-pass circuits, resonance and Q-factor, use of Bode plots, use of differential equations and their solutions. Time response (natural and step responses. Fundamentals Resistive networks, voltage and current sources, Thevenin and Norton equivalent circuits, current and voltage division, input resistance, output resistance, coupling and decoupling capacitors, maximum power transfer, RMS and power dissipation, current limiting and over voltage protection. Components and active devices – Components vs elements and circuit modeling, real and ideal elements. Introduction to sensors and actuators, self-generating vs modulating type sensors, simple circuit interfacing. Diodes and Diode circuits – Diode characteristics and equations, ideal vs real. Signal conditioning, clamping and clipping, rectification and peak detection, photodiodes, LEDs, Zener diodes, voltage stabilization, voltage reference, power supplies

Learning and Teaching Strategies	
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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)			
Structured SWL (hr/sem)	87	**Structured SWL (h/w)**	9
Unstructured SWL (hr/sem)	110	**Unstructured SWL (h/w)**	31
Total SWL (hr/sem)	**197 + 3 final = 200**		

Module Evaluation					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	5	20% (4)	2,4,5,6,9	1,2,3,6
	Projects	1	4% (4)	8	6,8,9
	Online Assig.	2	6% (3)	3,7	3,7,9
	Reports	10	10% (1)	15	4,5
Summative assessment	**Midterm Exam**	1 hr.	10% (10)	7	
	Final Exam	3 hr.	50% (50)	15	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Charges at rest: Electrostatics.
Week 2	Charges in motion: Electric currents.
Week 3	COULOMBS LAW AND ELECTRIC FIELDS.
Week 4	POTNTIAL, CURRENT.
Week 5	RESISTANCS.
Week 6	OHMS LAW.
Week 7	Med- term exam
Week 8	RESISTANCE; SIMPLE CIRCUTS.
Week 9	KIRCHHOFF S LAWS EQUIVALENT.
Week 10	Magnetism.
Week 11	IN MAGNETIC FIELDS.
Week 12	MAGNETIC MOMENT, SOURCES OF MAGNETIC FLUX FORCES.
Week 13	LENZ S LAW.
Week 14	MAGNETIC FIELD
Week 15	Final exam

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	EXP 1: Capacitive Reactance in the AC Circuit
Week 2	EXP 2: Study of Self-Inductance and Inductive Reactance in Alternating Current Circuits
Week 3	EXP 3: Capacitor Charging
Week 4	EXP 4: Earth's Magnetic Field
Week 5	EXP 5: Determination of the Internal Resistance and Maximum Power of a Cell
Week 6	Discussion for the project 1
Week 7	EXP 6: Discussion for the experiments (1-5)
Week8	EXP 7: Mapping the Electric Field
Week9	EXP 8: Determination of the Resistance of Resistors in Parallel Connection
Week10	EXP 9: Slide-Wire Wheatstone Bridge
Week11	EXP 10: LCR Series Resonant Circuit
Week12	Discussion for the experiments (6-9)
Week13	Discussion for the project Project 2
Week14	Discussion for the project 3
Week15	Final Exam

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Schaum's outlines of theory and problems of college physics More Physics: electric charges and fields – electromagnetism	No
Recommended Texts	Electronics basics books	No
Websites	https://books-library.net/free-32056793-download	

Grading Scheme				
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 DESCRIPTOR FORM

Module Information					
Module Title	ENGLISH LANGUAGE			**Module Delivery**	
Module Type	SUPPLEMENT			☒ **Lecture**	
Module Code	UOWA105				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1	**Semester of Delivery**	2		
Administering Department	Medical Physics	**College**	College Sciences		
Module Leader	Bandar Abdul abbas Almankoshi	**e-mail**	bandar@uowa.edu.iq		
Module Leader's Acad. Title	Assistant Lecturer	**Module Leader's Qualification**	M.Sc.		
Module Tutor	Bandar Abdul abbas Almankoshi	**e-mail**	bandar@uowa.edu.iq		
Peer Reviewer Name	Ali Hamed Arebe	**e-mail**	ali.h@uowa.edu.iq		
Review Committee Approval	2024-4-21	**Version Number**	V 1.0		

Relation With Other Modules			
Prerequisite module	None	**Semester**	**None**
Co-requisites module	None	**Semester**	**None**

Department Head Approval

Dean of the College Approval

Module Aims, Learning Outcomes and Indicative Contents	
Module Aims	This course aims at: 1- Enhancing a mastery over the basic structure of a standard English Sentence. and the type of language used in scientific fields of study. 2- Knowing a good bit of information about the basic phrases in English Language regarding their formation, position in sentence word order, uses in real life situation as related to their field of work. 3- Focusing on the difference between simple and continuous present and past tenses as related to their study and career. 4- Enabling students to write certain types of expressions and texts useful for their field of study and future career. 5- Stimulating and directing students to speak and practice English language correctly, asserting the type of language used in real life situations and scientific field of study. 6- Specifying points of weakness in students' performance, trying to amend them. 7- Building a type of scheme in students' minds about what writing and speaking standard English language is supposed to be. 8- Forcing students to think critically while doing the assignments, quizzes and other similar activities.
Module Learning Outcomes	The student would be able to: 1- Speak and write a good standard sentence or type of English Language. 2- Differentiate between types of basic tenses. 3- Have a fluency while speaking the English Language. 4- Write acceptable formal and informal texts. 5- Comprehend the idea behind string of words in a sentence. 6- Work collectively within a teamwork.
Indicative Contents	Indicative content includes the following: - Word order: Statements, questions imperatives (command, request, instructions). - Phrases: Nouns, Adjectives, Adverbs, Verbs, Prepositions. - Verbs: Tenses (Form and basic uses), Passive. - Knowing how to say and write some useful texts. - Some text for reading comprehension and videos or recordings for listening. - Basic guide lines in writing a summary, letters, paragraphs, CV. - Topics for discussion.

Learning and Teaching Strategies	
Strategies	The program is designed to have two theoretical hours in points related to grammar and other three hours for the sake of practicing including doing the exercises. Before an exam, the student will have the chance to review the previous given materials. The practical hours include some basic information in pronunciation, reading, speaking, listening and writing skills. The program instructor will follow a mixture of traditional and communicative approaches to achieve the above-mentioned aims. The students will be asked to do some exercises and quizzes in relation to grammar. They could be divided into groups having certain duties related to different practical activities to be done by them. Each student will have his own evaluation which will raise the grade of each group work as a whole. The best group work will be rewarded at the end of the semester with some additional marks for their good performance during the course. Doing quizzes and assignments inside the classroom are very important to adjust some important grammatical points. To ensure self-learning, some websites and parts of texts related to the given lectures are going to be given to them. Certain activities such as speaking and listening are going to be given forward so as to be ready for the duties while practicing them inside the classroom.

Student Workload (SWL)			
Structured SWL (h/sem.)	26	**Structured SWL (h/w)**	1.75
Unstructured SWL (h/sem.)	21	**Unstructured SWL (h/w)**	1.4
Total SWL (h/sem.)	47 + 3 final = 50		

Module Evaluation

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment	**Quizzes**	2	10% (5)	3,10	1,2,4,6
	Projects	1	10% (10)	13	All
	Online Assig.	2	10% (5)	6,11	4,5
	Reports	1	10% (10)	9	2,5
Summative Assessment	**Midterm Exam**	1 hr.	10% (10)	7	1 – 7
	Final Exam	3 hrs.	50% (50)	15	All
Total Assessment			100		

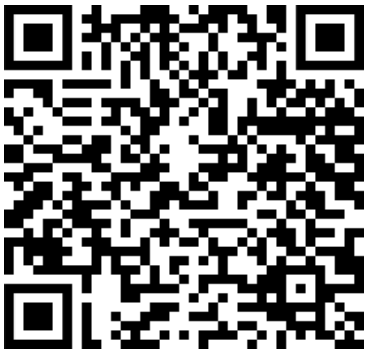
Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Word Order in Standard English – Statement: Positive vs. Negative, Questions.
Week 2	Word Order in Standard English – Imperative Sentence: Instructions, Request, Command.
Week 3	Nouns: singular nouns vs. plural nouns, Gender, Pure Nouns-Derived nouns, Articles.
Week 4	Nouns: Pronouns, Expressions of Quantity, Position in Word Order.
Week 5	Adjectives: Pure adjectives -Derived adjectives, Comparison Degrees, Position in Word Order.
Week 6	Adverbs: Pure adverbs-derived adverbs, Position in Word Order, Adverbs of Degree.
Week 7	Mid-Term Exam
Week 8	Expressing: Time, conditional, result, reason, purpose, contrast.
Week 9	Prepositions: Uses, position in Word Order.
Week 10	Verbs: Tenses-Present (Simple vs. Continuous).
Week 11	Verbs: Tenses-Past (Simple vs. Continuous).
Week 12	Verbs: Futurity, Modals (can, may, should, etc.).
Week 13	Verbs: Passive Voice.
Week 14	General Review and some Additional Notes.
Week 15	Final Exam

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	John and Liz Soars, New Headway Plus, United Kingdom: Oxford University Press.	Yes
Recommended Texts	Baily, Stephen. 2011. *Academic writing*. London: Rutledge. Hewings, Martin. 2012. *Advanced grammar in Use.* United Kingdom: Cambridge university Press.	Yes Yes
Websites	- https://www.oxfordonlineenglish.com/ - https://www.grammarly.com/ - https://www.softschools.com/language_arts/reading_comprehension/science/8/magnetism/ - https://eslflow.com/	

GRADING SCHEME				
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.



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

MODULE DESCRIPTOR FORM

Module Information					
Module Title	MATHEMATICS			**Module Delivery**	
Module Type	BASIC			☒ **Theory** ☒ **Tutorial**	
Module Code	MPH202				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Medical Physics		**College**	College Sciences	
Module Leader	Saja Basim Ali		**e-mail**	Saja.b@uowa.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	MS.c.	
Module Tutor	Saja Basim Ali		**e-mail**	Saja.b@uowa.edu.iq	
Peer Reviewer Name	Ali Nadhom Munif		**e-mail**	Ali.n@uowa.edu.iq	
Review Committee Approval	2024-04-19		**Version Number**	V 1.0	

Relation With Other Modules			
Prerequisite module	No	**Semester**	-
Co-requisites module	No	**Semester**	-

Department Head Approval

Dean of the College Approval

Module Aims, Learning Outcomes and Indicative Contents	
Module Aims	This course aims at: 1- Developing a solid understanding of fundamental mathematical concepts and their applications. 2- Fostering critical thinking and problem-solving abilities by engaging students in analyzing complex mathematical problems and applying appropriate strategies and techniques to arrive at logical solutions. 3- Enhancing students' ability to communicate mathematical ideas effectively, both orally and in written form, through clear explanations, rigorous proofs, and mathematical modeling. 4- Promoting a deep understanding of mathematical concepts, principles, and relationships by encouraging students to explore mathematical structures, patterns, and connections within and across different areas of mathematics. 5- Cultivating mathematical reasoning and logical thinking skills by providing opportunities for students to construct and evaluate mathematical arguments, justify mathematical claims, and make conjectures. 6- Encouraging students to appreciate the beauty and elegance of mathematics by exposing them to diverse mathematical topics, including geometry, algebra, calculus, statistics, and discrete mathematics. 7- Promoting mathematical literacy and numeracy by helping students develop a practical understanding of mathematical concepts and their applications.
Module Learning Outcomes	The student would be able to: 1- Master the proficiency in applying differential calculus concepts, including derivatives and rates of change. 2- Have the competence in utilizing integral calculus techniques to find areas, volumes, and solve related problems. 3- Analyze mathematical models involving differentiation. 4- Master the solving of practical problems using integral calculus. 5- Improve critical thinking and problem-solving skills through the study of differential mathematics. 6- Develop mathematical reasoning and logical thinking abilities in the context of calculus.
Indicative Contents	Indicative content includes the following: Introduction to differentiation: limits, derivatives, and their basic properties. Applications of differentiation: rates of change, optimization, and related rates. Introduction to integration: antiderivatives, definite and indefinite integrals. Techniques of integration: substitution, integration by parts, and partial fractions. Applications of integration: areas under curves, volumes, and solving practical problems.

Learning and Teaching Strategies	
Strategies	Lectures: Engaging and interactive lectures to introduce new concepts, theories, and problem-solving techniques. Tutorials: Small group sessions where students can actively participate in solving mathematical problems, reinforcing their understanding and receiving feedback. Practical Exercises: Assignments and homework that provide opportunities for students to practice and apply the learned mathematical principles. Collaborative Learning: Group projects and discussions that encourage peer-to-peer interaction and collaborative problem-solving, fostering a deeper understanding of mathematical concepts. Technology Integration: Utilizing mathematical software, computer simulations, and online resources to enhance visualization and exploration of mathematical concepts.

Student Workload (SWL)			
Structured SWL (h/sem)	42	**Structured SWL (h/w)**	2.8
Unstructured SWL (h/sem)	105	**Unstructured SWL (h/w)**	7
Total SWL (h/sem)	147+ 3 final =150.		

Module Evaluation					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative Assessment	**Quizzes**	2	10% (5)	3,8	1,3
	Projects	1	5% (5)	13	2,4,6
	Online Assig.	4	20% (5)	2,5,9,14	1,4,5,6
	Reports	1	5% (5)	5,6	2,4,5,6
Summative Assessment	**Midterm Exam**	1 hr.	10% (10)	8	1 – 7
	Final Exam	3 hrs.	50% (50)	15	All
Total Assessment			100		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Reviewing of Algebraic Concepts, Algebraic Expressions, Exponents and Logarithms.
Week 2	Differentiation, Techniques of Differentiation, Functions and Graphs, H.W_1.
Week 3	More Differentiation, Optimization Problems Using Derivatives, Problem-Solving.
Week 4	Techniques of differentiation, Limits and Continuity, Class participation.
Week 5	Applications of Derivatives, Solving First-Order Ordinary.
Week 6	Continuity of functions H.W_2, Class participation.
Week 7	Differential Equations, Applications of Differential Equations, Problem-Solving.
Week 8	Mid-Term Exam.
Week 9	Integration, Class Participation.
Week 10	Antiderivatives and Indefinite Integration.
Week 11	Techniques of Integration, Problem-Solving.
Week 12	Applications of Integration, Class Participation.
Week 13	Exponential and Logarithmic Functions.
Week 14	Review and Assessment, Problem-Solving
Week 15	Final Exam

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	Gilbert Strang, Calculus, Massachusetts Institute of Technology: Wellesley-Cambridge Press.	
Recommended Texts	James Stewart, McMaster University 2008. United States of America.	
Websites	• https://www.khanacademy.org/ • https://www.mathsisfun.com/ • https://www.mathsisfun.com/ • https://www.youtube.com/@DrTrefor	

APPENDIX:

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

Note:

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ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي

MODULE DESCRIPTION FORM

Module Information					
Module Title	**MATLAB**			**Module Delivery**	
Module Type	**Supportive**			☒ **Lecture** ☒ **Practical**	
Module Code	**MPH204**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	2	
Administering Department	Medical Physics		**College**	College of Science	
Module Leader	Nabil Sadiq Abdul Abbas		**e-mail**	Nabeel.alshreefy@uowa.edu.iq	
Module Leader's Acad. Title	Asst. Lecturer		**Module Leader's Qualification**	MS.c	
Module Tutor	Nabil Sadiq Abdul Abbas		**e-mail**	Nabeel.alshreefy@uowa.edu.iq	
Peer Reviewer Name	Karar Sadiq Mohsen		**e-mail**	karar.sadeq@uowa.edu.iq	
Scientific Committee Approval Date	2024-09-17		**Version Number**	V 1.0	

Relation with other Modules			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Department Head Approval

Dean of the College Approval

Module Aims, Learning Outcomes and Indicative Contents	
Module Aims	This course aims at: 1- Introducing MATLAB: The lectures aim to familiarize students with the MATLAB software, its interface, basic commands, and programming concepts. 2- Knowing MATLAB Fundamentals: The lectures aim to provide a solid foundation in MATLAB programming, covering topics such as data types, arrays, matrices, operators, functions, and control flow structures. 3- Exploring Data Analysis and Visualization: The lectures aim at enabling students to explore various techniques and tools available in MATLAB for data analysis, manipulation, and visualization. This may include topics such as data importing, filtering, statistics, plotting, and creating graphical representations of data. 4- Enhancing Algorithm Development: The lectures aim to enhance students' skills in algorithm development using MATLAB. This involves understanding and implementing algorithms, problem-solving strategies, and efficient programming techniques. 5- Introducing Numerical Methods: The lectures aim to introduce students to numerical methods and how MATLAB can be used to solve mathematical problems such as solving equations, numerical integration, interpolation, and optimization. 6- Demonstrating Simulations and Modeling: The lectures aim to demonstrate how MATLAB can be used for simulation and modeling purposes. This may include topics like creating mathematical models, simulating physical systems, and analyzing simulation results.
Module Learning Outcomes	The student would be able to: 1- Understand the basics of MATLAB software and its command syntax. 2- Apply MATLAB programming concepts to solve computational problems. 3- Manipulate and analyze data using MATLAB's built-in functions. 4- Develop algorithms and implement numerical methods using MATLAB. 5- Perform basic data visualization using MATLAB's plotting capabilities. 6- Solve mathematical equations and perform mathematical computations using MATLAB. 7- Apply MATLAB for basic simulations and modeling tasks. 8- Apply critical thinking and problem-solving skills to MATLAB projects. 9- Document and present MATLAB projects effectively.
Indicative Contents	Indicative content includes the following: It encompasses topics such as variables and data types, control flow structures, functions and scripts, data import/export, data analysis, plotting and visualization, numerical computations, algorithm development, simulations and modeling, advanced topics (if applicable), problem-solving and application, project work, and documentation/presentation skills. These contents aim to provide students with a comprehensive understanding of MATLAB's capabilities, programming concepts, and practical application in various domains.

Learning and Teaching Strategies

Strategies	**Lectures: Engaging and interactive lectures to introduce new concepts, theories, and problem-solving techniques.** **Hands-on Practice: Active engagement and practical exercises are key to learning computer software effectively.** **Demonstration and Explanation: Instructors demonstrate software features and explain concepts using examples and visuals.** **Step-by-Step Tutorials: Providing clear instructions and visuals helps learners follow along and grasp software functionalities.** **Collaborative Learning: Encouraging collaboration among learners through group projects or peer feedback fosters a supportive learning environment.** **Online Resources and Documentation: Supplementing learning with online resources, official documentation, and forums enhances understanding and troubleshooting.** **Real-World Applications: Relating software learning to real-world scenarios increases student engagement and practical relevance.**

Student Workload (SWL)

Structured SWL (h/sem)	44	**Structured SWL (h/w)**	3.2
Unstructured SWL (h/sem)	78	**Unstructured SWL (h/w)**	5.2
Total SWL (h/sem)	**122 + 3 final = 125**		

Module Evaluation

		Time / Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	3	15% (5)	4,11	2,6
	Projects	1	5% (5)	13	6,7,9
	Online Assig.	5	15% (3)	3,5,7,9,12	3,4,5,8,9
	Reports	1	5% (5)	6	1,2,4,6
Summative assessment	**Midterm Exam**	1 hr.	10% (10)	7	1 – 7
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	The MATLAB System, Installation, User Interface.
Week 2	Desktop Tools and Development Environment, Mathematical Function Library, The Language, Graphics, External Interfaces, Lab participation.
Week 3	Expressions, Commands, Formats, Symbolic Computation H.W_1
Week 4	Operator Precedence, MATLAB Fundamentals.
Week 5	Script File, Comments.
Week 6	Lab Participation, Programming.
Week 7	Help Menu, Constructing Symbolic Objects.
Week 8	Mid-Term Exam, Pretty Command,
Week 9	Sin, Cos, Tan, Cot, Sec, Csc Commands.
Week 10	Function M-Files, Data Import-Export, H.W_2, Programming.
Week 11	Vectors Create and Given Size and Plot, Solving Equations.
Week 12	Factorial Command, Sort Command.
Week 13	Matrices, Loops, Matlab Graphics, Solving Equations.
Week 14	Review and Assessment.
Week 15	Final Exam

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	1- Brian D. Hahn and Daniel T. Valentine, Essential MATLAB for Engineers and Scientists, 7th Edition, Elsevier, London 2019.Stormy Attaway, MATLAB, 2016, United States	Yes
Recommended Texts	1- Rudra Pratap, Getting Started with MATLAB, 2010, United States 2- Duane Hanselman and Bruce Littlefield, Mastering MATLAB, 2019, United States	Yes
Websites	https://www.mathworks.com/help/ https://www.mathworks.com/matlabcentral/answers/ https://www.mathworks.com/products/matlab-online.html https://octave-online.net/	

Grading Scheme

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

Module Information					
Module Title	**Organic chemistry**			**Module Delivery**	
Module Type	**Basic**			**Theory √** **Lab √** **Tutorial √** **Seminar √**	
Module Code	**MPH203**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level		1	**Semester of Delivery**		2
Administering Department		Medical Physics	**College**	College of Sciences	
Module Leader	Prof. Dr. Ali Jasim Hassan		**e-mail**	dr.ali.jasim@uowa.edu.iq	
Module Leader's Acad. Title		Assistant Prof. Dr.	**Module Leader's Qualification**		Assist. Prof. Dr.
Module Tutor	Ashraf Hussain Saleh		**e-mail**	ashraf.h@uowa.edu.iq	
Peer Reviewer Name		Krrar Sadeq Mohsin	**e-mail**	karar.sadeq@uowa.edu.iq	
Scientific Committee Approval Date		2024-11-24	**Version Number**		V 1.0

Relation with other Modules			
Prerequisite module	No	**Semester**	/
Co-requisites module	No	**Semester**	/

Department Head Approval

Dean of the College Approval

Module Aims, Learning Outcomes and Indicative Contents	
Module Objectives	- Teaching the students organic chemical reactions, chemical structures, knowing the form of organic compounds, and how to - Clarifying the mechanics of organic reactions and their practical applications aimed at developing and keeping pace with scientific development. For organic chemistry. Teaching and educating students on all the necessary and necessary information related to organic chemistry, qualifies them to work and research in all areas of organic chemistry
Module Learning Outcomes	1- Sudents will be able to obtain knowledge and understanding of organic chemistry. 2- Students will be able to obtain knowledge and understanding of structures. 3- Students will be able to obtain knowledge and understanding of pile mechanics. 4- Students will be able to obtain knowledge and understanding of the functional communication of organic chemistry. 5- Students will be able to obtain knowledge and understanding of classical and modern methods of extraction. 6.Students will be able to obtain knowledge and understanding the research through analyzing the published research papers and writing mini-research from them.
Indicative Contents	1- Introducing students to organic chemistry and its importance in our lives 2- Introducing students to hydrocarbons and their types. (Alkanes, alkenes and alkynes). 3- Introducing the student to methane gas and the method of its preparation. 4- Introducing students to alkanes and their properties. 5- Introduce students to the interactions of alkanes. 6- Defining and unsaturateding hydrocarbons and their types. 7- Introducing the student to alkenes, naming them and their characteristics. 8- Introducing students to the methods of preparing alkenes. 9- Introducing the student to the reactions of alkenes. 10- Familiarizing students with the detection of alkenes. 11- Introducing the student to the entities and their characteristics and naming them 12- Introducing the student to the interactions of alkynes 13- Introduce the student to the reactions of aliphatic cyclic compounds 14- Identification, description and naming of aromatic compounds. Introducing the student to the reactions of aromatic compound.

Learning and Teaching Strategies	
Strategies	1- Following Lecture method and the use of the interactive whiteboard 2- Explanation and clarification Providing students with the basics and additional topics related to the outputs of chemical thinking and analysis organic. 3- Forming discussion groups during lectures to discuss organic chemistry topics that require thinking and analysis 4- Asking students a set of reflective questions during the lectures, such as what, how, when and why for specific topics Giving students homework that requires self-explanations in causal ways

Student Workload (SWL)			
Structured SWL (h/sem)	87	**Structured SWL (h/w)**	5.8
Unstructured SWL (h/sem)	85	**Unstructured SWL (h/w)**	5.6
Total SWL (h/sem)	172 **+ 3 final = 175**		

Module Evaluation					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	20% (5)	2,4,6,9	1,3,4
	Project	1	7% (7)	8	2,6
	Online Assig.	2	6% (3)	3,5,7	1,4,5
	Report	7	7% (1)	15	3,4,5
Summative assessment	**Midterm Exam**	1 hr.	10% (10)	7	1 - 7
	Final Exam	3 hrs.	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	General Principles in Organic Chemistry.
Week 2	Saturated Aliphatic Hydrocarbons.
Week 3	Aliphatic Cyclic Compounds.
Week 4	Alkanes Concept.
Week 5	Alkanes Concept.
Week 6	Alkanes Concept.
Week 7	Organic Halides.
Week 8	Mid-term exam.
Week 9	Ethers Concept.
Week 10	Alcohols Concept.
Week 11	Aldehydes and ketones.
Week 12	Carboxylic Acids.
Week 13	Introduction to Amines.
Week 14	Ammonium Compounds.
Week 15	**Final exam**

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Laboratory safety and Acquaintance with glassware and apparatus in the organic chemistry laboratory
Week 2	Exp1: Determine the melting point by means of a capillary tube for some organic substances and using the point m device.
Week 3	Exp2: Analyzing the melting of some solids and choosing the appropriate solution for recrystallization.
Week 4	Exp3: Determine the boiling point by means of a capillary tube for some organic substances and using the point m device.
Week 5	Discussion for the reports of experiment 1, 2 and 3.
Week 6	Discussion of Project-1
Week 7	Ex4: Extraction (base acid extraction).
Week 8	Ex5: Crystallization Filtration Types
Week 9	Discussion for the reports of experiment 4 and 5.
Week 10	Discussion of Project-2
Week 11	Ex6: Application of some methods of separation of sublimated organic compounds.
Week 12	Ex7: TLC Extraction
Week 13	Discussion for the reports of experiment 6 and 7.
Week 14	Discussion of Project-3
Week 15	Final Exam

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	1- Organic chemistry, Morrison and Boyd. 2- Chemistry, Clayden J., Creeves N., Warren S and Wother P., Oxford, 2001.	No
Recommended Texts	Organic Chemistry	No
Websites	https://en.wikipedia.org/wiki/Organic_chemistry	

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Fail Group (0 – 49)	**FX –** Fail	Fail	(45-49)	More work required but credit awarded
	F – Fail	Fail	(0-44)	Considerable amount of work required

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