MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Basic Computer Science**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☒ **Seminar**	
Module Code	**FOR12011**				
ECTS Credits	4				
SWL (hr/sem)	**100**				
Module Level		First	**Semester of Delivery**		1
Administering Department		FOR	**College**	Science	
Module Leader	Dr. Nada Abdullah Rasheed		**e-mail**	Nadaar63@kus.edu.iq	
Module Leader's Acad. Title		Assistant Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Lecturer: Osama Mohammed		**e-mail**	osama20111989@kus.edu.iq	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		17/06/2023	**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	The computer course includes, on the theoretical side, the basics of computers, as well as a brief historical summary of the development and generations of computers. It also covers different computer types. There is a detailed explanation of computer components (hardware and software), along with an introduction to number systems (decimal and binary) from the student's perspective. Furthermore, the course provides a manual for operating MATLAB, presenting its code capabilities required for general programming. On the practical side, students are taught ready-made basic programs that include Microsoft Office and the Windows operating system. The course includes practical hours, with the main goal being the student's mastery in using the calculator as an essential tool.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The learning outcomes of studying medical image analysis include: 1. Defining computer components (hardware and software) to the students. 2. Explaining input and output devices to the students. 3. Enabling students to recognize different types of memory. 4. Teaching students about number systems and how to convert between decimal and binary. 5. Providing the student with cognitive skills from the basic concepts of programming language and enables them to the skills to run the MATLAB program and dealing with the MATLAB windows and all the types of Statements. 6. Enables students to understood and run all Statements (Loop, Control, Branch), reading and writing data file. 7. Providing the student with cognitive skills to deal with operations with Arrays or Matrices. 8. Providing hands-on experience with basic programs, including Microsoft Office and the Windows operating system, to students.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A</u> Introduction to Computer, Definition of Computer, Computer History, Generations of Computers, Categories of Computer, Computer Components, Software. [8 hrs] <u>Part B</u> Computer Components, Hardware, Input Devices, Output Devices, Components of the System Unit, Central Processing Unit (CPU), Memory .[10 hrs] <u>Part C</u> Hardware, Cache Memory, Primary, Memory (Main Memory) ,Random Access Memory, Read Only Memory, Secondary Memory, Memory Units, Storage Devices.

	[10 hrs] Part D Numbers Systems, Decimal Number System, Binary Number System, Convert Decimal to Binary System, Numbers Systems, Convert Binary to Decimal System. [8 hrs] Part E Defining Internet and Intranet, Types of Computer Network, Computer network. [5 hrs] Part F MATLAB Windows: Window layout, Command Windows, History Window, Workspace Window, Editor Window, Figure Window, General MATLAB Code: Types of Statements, Rules for Statement Editing, Arithmetic Statement. Constant Value, Variables, Numerical. Variable, Logical Variable, Character Variable. [6 hrs] Part G Arrays and Matrices: Index Concept Numerical Arrays and Matrices, Operations on one , Arrays or Matrices, N-Dimension Matrices, Logical Arrays, character and String Variables, Operators, Expression, Loop Statement, Control Statement, Branch Statement, reading and writing data file. [7 hrs] Part H Plotting: Plotting Elementary Function- XY- plotting functions, Generating Sub-Plots, Create Line Plot from Matrix, Specify Line Style, Specify Line Style and Color, Specify Line Width, and Color, Add Title and Axis Labels. [6 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	In order to enable students to learn computer skills effectively and programming using MATLAB, here are some strategies that can be employed: 1. Provide hands-on activities: Incorporate hands-on activities, projects, and exercises to engage students actively in the learning process. Practical application of concepts helps students understand how computers work and reinforces their understanding. 2. By using visual aids and interactive resources: Utilize visual aids, diagrams, charts, and interactive resources like educational software, simulations, and coding platforms to make abstract concepts more tangible and engaging. 3. Foster a collaborative learning environment: Encourage students to work in teams or pairs on projects or coding exercises. Collaborative learning allows students to share ideas, help one another, and learn from different perspectives. 4. Personalize the learning experience: Recognize that students have different learning styles and paces. Provide opportunities for individualized learning,

	allowing students to progress at their own speed and explore topics of interest to them. Tailor the learning experience to accommodate diverse learning needs. 5. Encourage exploration and experimentation: Encourage students to explore and experiment with different programming languages, tools, and technologies. Let them pursue their own coding projects and interests. This fosters curiosity and self-directed learning. 6. Connect with real-world applications: Demonstrate how computer skills are applied in various fields and industries. Show examples of how coding is used in creating websites, mobile apps, robotics, or data analysis. Connecting computer skills to real-world applications can motivate students and help them understand the practical significance of what they are learning. 7. Through updated with technology trends: Stay abreast of the latest technology trends, tools, and programming languages. Integrate relevant and up-to-date content into the curriculum to ensure students are learning skills that are in demand in the job market. It is important to create a supportive and inclusive learning environment where students feel encouraged to ask questions, take risks, and explore their interests. By implementing these strategies, we can help students develop a solid foundation in computer skills and foster their passion for technology.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	60	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	40	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.7
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**	2	5% (5)	6, 13	LO # 2,3,4,5,11 and 12
	Assignments	2	10% (10)	9, 15	LO # 6,7,8, 13 and 14
	Projects / Lab.	1	20% (20)		
	Report	1	5% (5)	11, 16	LO # 1,9,10 and 15
Summative	**Midterm Exam**	2hr	10% (10)	9	LO # 1-8

assessment	**Final Exam**	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Computer, Definition of Computer, Computer History, Generations of Computers,
Week 2	Categories of Computer.
Week 3	Computer Components, Software
Week 4	Computer Components, Hardware, Input Devices, Output Devices.
Week 5	Components of the System Unit, Central Processing Unit (CPU), Memory
Week 6	Hardware, Cache Memory, Primary, Memory (Main Memory) ,Random Access Memory, Read Only Memory, Secondary Memory, Memory Units, Storage Devices
Week 7	Numbers Systems, Decimal Number System, Binary Number System,
Week 8	Numbers Systems, Convert Decimal to Binary System, Numbers Systems, Convert Binary to Decimal System, Examples
Week 9	Defining Internet and Intranet
Week 10	Types of Computer Network, Computer network
Week 11	MATLAB Windows: Window layout, Command Windows, History Window, Workspace Window, Editor Window, Figure Window.
Week 12	General MATLAB Code: Types of Statements, Rules for Statement Editing, Arithmetic Statement. Constant Value, Variables, Numerical. Variable, Logical Variable, Character Variable.
Week 13	Arrays and Matrices: Index Concept Numerical Arrays and Matrices, Operations on one Arrays or Matrices, N-Dimension Matrices, Logical Arrays, character and String Variables.
Week 14	Operators, Expression, Loop Statement, Control Statement, Branch Statement, reading and writing data file.
Week 15	Plotting: Plotting Elementary Function- XY- plotting functions, Generating Sub-Plots, Create Line Plot from Matrix, Specify Line Style, Specify Line Style and Color, Specify Line Width, and Color, Add Title and Axis Labels.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Windows 10: An introduction to windows 10, The start menu, Notification pane and action center, Cortana, Microsoft edge, Use multiple desktops, Tablet mode, The settings App.
Week 2	Lab 2: Microsoft word 2016: An introduction to Microsoft Word 2016, Starting Word, The Home Ribbon, The Insert Ribbon, Adding Tables, Headers and Footers, Inserting Headers & Footers, Editing Headers & Footers.
Week 3	Lab 3: Page Numbering: The Design Ribbon (Page Borders, Page Color, Watermarks, Page Numbering: The Page Layout Ribbon, Page Setup, The References Ribbon, The Mailings Ribbon, The Format Ribbon, File Backstage, Saving Documents, Saving as a Different Format, Opening Saved Documents, Printing Documents.
Week 4	Lab 4: Microsoft Excel 2016: An introduction to Microsoft Excel 2016, Starting Excel, The Home Ribbon, The Insert Ribbon, The Page Layout Ribbon, The Formulas Ribbon, The Data Ribbon, The Review Ribbon, The View Ribbon, File Backstage, Introduction to a Spreadsheet, Entering Data.
Week 5	Lab 5: Simple Text Formatting, Text Orientation, Resizing Rows and Columns, inserting Rows & Columns, Cut, Copy & Poste, Sorting Data, Formatting Spreadsheet, Cell Alignment, Text Format, Cell Borders, Using Formulas, Using Functions, Count, Count IF, Auto Sum, Average, Max & Min, lF Function, Adding Charts, Change Chart Type.
Week 6	Lab 6: MATLAB Windows, example of Constant Value, Variables, Numerical. Variable, Logical Variable, Character Variable, Examples of Arrays and Matrices
Week 7	Lab 7: Examples of Expression, Loop Statement, Control Statement, Branch Statement, reading and writing data file, Examples of Plotting.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Ata Elahi, "Computer Systems, Digital Design, Fundamentals of Computer, Architecture and Assembly Language", Springer International Publishing AG 2018. 2- Peter Norton "Introduction to Computers", sixth Edition, 2008, ISBN-13:978-0-07-059374-9. 3- B. Hemanta, Computer Fundamental, Stratford College London, pp.1-20. 4- R Mansfield, "Mastering VBA for Microsoft Office", 2019, 944 Pages. 5- Matlab: Numerical Computing, Tutorials point,2014.	Yes
Recommended Texts	1- Steven Freund, Gary B. Shelly, Thomas J. Cashman, Misty Vermaat, Introduction to Computers, Eighth Edition, 2012, ISBN10 143908131X, ISBN13 9781439081310	No
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	**Calculus 1**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**KUCA 006**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level		1	**Semester of Delivery**		1
Administering Department		Type Dept. Code	**College**	Type College Code	
Module Leader	Amer Basim Shaalan		**e-mail**	ame72r@kus.edu.iq	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		Amer Basim Shaalan	**e-mail**	ame72r@kus.edu.iq	
Scientific Committee Approval Date		01/09/2023	**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 module gives students an understanding of the principles of calcules can be give improve in forensic program. 2. To provide the student with the ability to apply introductory level mathematics to skills that deals with forensic science.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On completion of this module, students are expected to be able to: 1. Apply vectors, complex numbers and trigonometry to problems in mathematical program that could be used in forensics science. 2. Apply matrix techniques and elementary probability theory to problems in forensic. 3. Apply rules of calculus to solve forensic problems including differential equations.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - primary information of calculus science</u> On completion of this module, students are expected to be able to: 1 Trigonometry: Trigonometric identities and their application in solving trigonometric equations. [5h] 2 The combination of simple waveform using standard trigonometric formulae. Vectors: Simple vector algebra.[5h] 3 The scalar and vector products. Complex numbers: The arithmetic of complex numbers. Rectangular and polar forms. [12h] Section 2 1 The Argand diagram. De Moivre's theorem and complex roots. Differential Calculus: Differentiation of elementary functions. 2 The rules of differentiation: chain rule, product rule, quotient rule. Integral Calculus: Integration of elementary functions. Partial fractions.[12h] Application to problems in forensic . Matrices: Simple matrix algebra. Determinants. Applications to the solution of simultaneous linear equations. Differential Equations: Solution of 1st order ODEs by separation of variables and integration factor methods.[12h] Power series for elementary functions. Partial differentiation. Statistics: Simple descriptive statistics. Probability and reliability. Elementary probability distributions.

	The use of a computer mathematics package for solving problems in engineering mathematics. [10 hrs] Part B - essential and details Fundamentals To publicist the key learning resources that are important or essential for those studying the module or to demonstrate the academic foundation of the module. To provide a short list, indicating the type and level of information that students are expected to consult. Further, in depth, guidance and a comprehensive list of reading and resources should be made available . [15 hrs] Normally a short list of books or articles in reference format (author, date, title, and publisher). If a core text or textbook exists, this should be indicated. Lists should be indicative, rather than a full bibliography.. [7 hrs] To identify where the whole module may be taken by students at a distance, either by arrangement with the Programme Director or because it forms part of a programme that is wholly or partly delivered virtually. If distance learning is possible, a second module descriptor will need to be created, to identify learning, teaching, assessment and contact methods/support for students in the distance learning version of the module.. [15 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	To describe the learning activities of the students and the teaching methods of the staff. Effective module design should result in a varied range of active learning experiences for students, including learning activities which are 'research-like'. Activities should, of course, motivate and encourage deep learning (reflection on wider meanings, rather than superficial memorisation of information). They should also be varied and flexible enough to accommodate different learning styles and orientations, and allow for inclusivity of students from different backgrounds and with different kinds of learning abilities. Learning activities therefore need to include reference to independent, interdependent (peer- supported) and online activities, as well as participation in different kinds of taught class.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	51	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	49	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
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**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / tutorial.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	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	The rate of change of function
Week 2	Coordinates
Week 3	Increments
Week 4	Equation and slop of straight line
Week 5	Functions and graphs
Week 6	Ways of combining functions
Week 7	Exam
Week 8	Derivative of a functions, velocity and acceleration

Week 9	Limits
Week 10	**The continuity**
Week 11	**Infinity functions**
Week 12	**Derivative of algebraic functions, polynomial, rational and inverse functions**
Week 13	**Composite functions and their derivative, Chain rule**
Week 14	**Roll's theorem**
Week 15	**Exam**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly tutorial. Syllabus) المنهاج الاسبوعي	
	Material Covered
Week 1-2	The rate of change of function Coordinates
Week 3-4	Increments Equation and slop of straight line
Week 5-6	Functions and graphs Ways of combining functions
Week 7-8	Prepering**Exam**
Week 9-10	Derivative of a functions, velocity and acceleration Limits The continuity
Week 11-12	Infinity functions Derivative of algebraic functions, polynomial, rational and inverse functions Composite functions and their derivative, Chain rule Roll's theorem
Week 13-15	Prepering**Exam**

Learning and Teaching Resources مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	STROUD, K.A. AND BOOTH, D.J., 2020, Engineering Mathematics, 8th ed, Red Globe Press.	Yes
Recommended Texts	SINGH, K., 2011, Engineering Mathematics Through Applications, 2nd ed, Palgrave.	No
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

Electricity

Module Information معلومات المادة الدراسية					
Module Title	**Electricity**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	MPH1106				
ECTS Credits	6				
SWL (hr/sem)	**150**				
Module Level	1		**Semester of Delivery**	1st	
Administering Department	Medical Physics		**College**	Science	
Module Leader	Dr. Amer Basim Shaalan		**e-mail**	ame7@kus.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	/ /2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	Magnetism	**Semester**	2nd

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The study of electric charge involves differentiating between conductors and insulators and using them to demonstrate the existence of charges. In addition, Coulomb's law will be stated and its expression derived and used in calculations. Along with this, electric field, dipole moments; potential energy; and torque on an electric dipole and flux of electric field will be defined. Their expressions will be derived and also used to solve problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Differentiate between conductors and insulators; 2. Explain charging processes. 3. State, derive and use Coulomb's law to solve problems about electric field and electric potential. 4. Use Gauss' law to a number of kinds of charge distributions in space having high symmetry (spherical, cylindrical, and uniform-plane distribution). 5. Derive the expression for calculating capacitance. 6. Explain the physical basis of Ohm's law and use Ohm's law in solving various problem of resistors connected in parallel and in series.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Unit 1: Electrostatics You'll begin your study of the electric force with an exploration of electric charges. 24 hr's Unit 2: Conductors, Capacitors, Dielectrics You'll explore how electric charge can move through an object and the factors that affect the way charge moves. 24 hr's Unit 3: Electric Circuits You'll build on your knowledge of electrical components to investigate the nature of electric circuits and explore current, resistance, and power. 24 hr's

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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
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	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
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**	2	10% (10)	5, 10	LO #1, 2, and 5
	Assignments	2	10% (10)	2, 12	LO # 3, 4, and 6
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 3, 4 and 6
Summative assessment	**Midterm Exam**	1 hr	10% (10)	7	LO # 1-4
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري

	Material Covered
Week 1	Electric charge, Charge is conserved, Electric Charge and the Structure of Matter
Week 2	Conductors, Insulators, and Induced Charges, Charging an object
Week 3	Coulomb's law.
Week 4	Electric field, A point charge in an electric field, A dipole in an electric field.
Week 5	Flux of the electric field, Gauss's law.
Week 6	Gauss's law and Coulomb law, An insulated conductor.
Week 7	Electric potential, Potential and the electric field, A group of point charges.
Week 8	Potential due to a dipole, Electric potential energy.
Week 9	Capacitance, Calculating Capacitance.
Week 10	Energy storage in an electric field, Parallel plate capacitor with dielectric.
Week 11	Dielectrics and atomic view.
Week 12	Current and current density, Ohm's law-A microscopic view.
Week 13	Electromotive force, Calculating the current.
Week 14	Potential difference.
Week 15	Multi loop circuits.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1-2	Lab 1: Introduction, Measurement, graph drawing and lab safity.
Week 3-4	Lab 2: Verification of Ohm's Low.
Week 5-6	Lab 3: A graphical Method for Calculating Ammeter Resistance.
Week 7	Test 1
Week 8-9	Lab 4: Calculating the Value of Unknown Resistance.
Week 10-11	Lab 5: The Ratio Between Lamp Power Dissipation and Resistance Power Dissipation.
Week 12-13	Lab 6: Capacitor Discharge and Calculating Time Constant.
Week 14	Test 2

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Physics/John D. Cutnell & Kenneth W. Johnson—9th ed.	No
Recommended Texts	Fundamentals of Physics Extended 9th-HQ-Halliday	No
Websites	https://engineeringinterviewquestions.com/electrostatic-electrical-engineering-multiple-choice-questions-and-answers/	

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 Biology**			**Module Delivery**	
Module Type	**Basic**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**SCI 1104**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level		1	**Semester of Delivery**		1
Administering Department		MBO	**College**	SC	
Module Leader	Dr. Sraa Nsayef Muslim		**e-mail**	Sraa.N.Muslim@kus.edu.iq	
Module Leader's Acad. Title		Asst. Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	----------		**e-mail**	----------	
Peer Reviewer Name		Dr. Saad Hussein	**e-mail**	saad_2019@ku.edu.iq	
Scientific Committee Approval Date		18/06/2023	**Version Number**		ق/أ.م/ ٥٠٨

Relation with other Modules العلاقة مع المواد الدراسية الاخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	General Microbiology	**Semester**	2

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الارشادية	
Module Aims أهداف المادة الدراسية	1. Give a general understanding of the types, divisions, and components of organisms. 2. Understand the effect of organisms on humans and their environments. 3. Gain practical knowledge of the classification of organisms 4. Complete the reports, seminars, and presentations to develop the student's skills.
Module Learning Outcomes مخرجات التلم للمادة الدراسية	1. Identify the most important differences between animals, plants, and microorganisms 2. Identify the processes of evolution in the organisms and the theories of their emergence 3. Statement the divisions of the plant kingdom and the animal kingdom 4. Identify the types of animal and plant tissues 5. Identifying the interdependent relationship between animals and plants.
Indicative Contents المحتويات الارشادية	Indicative content includes the following: <u>Part A - Life and science</u> Life - Characteristics of life, The scientific method, Development of the scientific attitude, Biology today, Biology as a science. [22 hrs.] <u>Part B - Different forms of life</u> The kingdoms of organisms - The animals, plants, and Monera, Their structure, Components, Functions, and Classification. [10 hrs.] Revision problem classes. [6hrs.] <u>Part C - Chemistry of life</u> Matter and elements - How elements differ, Structure of matter, Chemical bonding, Ionic bonding, Inorganic compounds, and Organic compounds. [22 hrs.] <u>Part D – Cells in Life</u> Cells - The cell theory, The cell and its parts, Prokaryotic, and eukaryotic cells, Compare and contrast between plant and animal cells, The cell membrane/Wall, The cell membrane/Wall structure and function, and The transport of materials across the membrane. [19 hrs.] <u>Part D – Cell life cycle</u> Cell Cycle - Control of cycle, Interphase (Gap I phase, Synthesis phase, and Gap II phase), Mitosis (Prophase, Metaphase, Anaphase, and Telophase), Meiosis. [21 hrs.]

Learning and Teaching Strategies ستراتيجيات التعلم والتعليم	
Strategies	Many strategies will be used in this module to encourage students to learn such as participation in the exercises, seminars, lab experiments, and workshops, as well as using educational videos and electronic to refine and expand their critical thinking skills. This will be achieved through classes, interactive tutorials, and by considering types of simple experiments involving some interesting sampling activities for the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب اسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	100	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب اسبوعيا	6.66
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**	2	5% (5)	4, 8	LO #1, 2, 3, 5,6, and 7
	Assignments	2	10% (10)	5, 10	LO # 2, 4, 6, 8, and 9
	Projects / Lab.	1	20% (20)	Continuous	
	Report	1	5% (5)	13	LO # 12
Summative assessment	**Midterm Exam**	1 hr	10% (10)	7	LO # 1-6
	Final Exam	2 hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to the life science
Week 2	The characteristics of life
Week 3	The characteristics of organisms
Week 4	The kingdom of organisms
Week 5	Classification of Animal and plant Kingdoms
Week 6	Kingdom Monera
Week 7	Mid-term Exam
Week 8	Chemistry of life (1)
Week 9	Chemistry of life (2)
Week 10	Cell structure and function (1)
Week 11	Cell structure and function (2)
Week 12	Cell life cycle
Week 13	Mitosis
Week 14	Meiosis
Week 15	**Final exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1,2	Lab 1,2: Microscope and cell structure
Week 3,4	Lab 3,4: Cell behavior
Week 5,6	Lab 5,6: Respiration
Week 7,8	Lab 7,8: Photosynthesis
Week 9,10	Lab 9,10: Mitosis
Week 11,12	Lab 11,12: Meiosis
Week 13,14	Lab 13,14: Gametogenesis
Week 15	Lab 15: A preparatory week before the final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Biology: Concepts and Connections; Campbell, Reece, Taylor, and Simon; Latest edition 2018	No
Recommended Texts	The Science of Biology by Sadava, Hillis, Heller and Berenbaum 9th ed. 2011	No
Websites	https://www.coursera.org/browse/biology-science	

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	**الديمقراطية و حقوق الانسان**			**Module Delivery**	
Module Type	**Basic**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	KUS 1103				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	1		**Semester of Delivery**	1	
Administering Department	MBO		**College**	SC	
Module Leader	Mohanad Basim Ibrahim		**e-mail**	Mohanad.al.sallami@kus.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D	
Module Tutor	----------		**e-mail**	----------	
Peer Reviewer Name	Dr. Saad Hussein		**e-mail**	saad_2019@ku.edu.iq	
Scientific Committee Approval Date	6/11/2023		**Version Number**	ق/أ.م/ ٥٠٨	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	تهدف المادة الى بيان اهمية الحقوق الاصلية اللصيقة بالانسان، التي تتفق مع فطرته والتي يقبلها العقل المجرد، والتي لا تختلف باختلاف الزمان والمكان وهذه هي حقوق الانسان
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	تسهم المادة العلمية الى تثقيف الطالب من الناحية القانونية، ليكون مطلع على ماهية الحقوق الانسانية واصلها التاريخي وتعريف ماله من حقوق وماعليه من التزامات من خلال معرفة حقه وحدود ذلك الحق وحقوق الاخرين، وما سعت اليه الدول والمنظمات الدولية والاقليمية في تعزيز مفاهيم تلك الحقوق، والزام الدول للنص عليها في التشريعات الداخلية والضمانات التي تكفل تطبيق تلك الحقوق العالمية.
Indicative Contents المحتويات الإرشادية	ان المحتويات الارشادية لمادة الديمقراطية وحقوق الانسان تتلخص بتهذي الطالب (١٥ ساعة) وتعريفه ان تعامله مع غيره من بني البشر يقوم على مبدأ (ان الناس صنفان، اما اخ لك في الدين، او نظير لك في الخلق (١٥ ساعة)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	نعمد في هذا الجانب إلى ما يلي: ١. يعرف الطالب إبتداءً بمضمون موجز عن المفردات التي سيتم تناولها خلال المحاضرة، ثم نوجه له بعض الإسئلة التي تحرك ذهنه، وتشد إنتباهه؛ لضمان حسن الاستماع. ٢. يتم التعمق بشرح المفردات العلمية في حدود تناسب متوسط المستويات العلمية لضمان عدم تجاوز الفروق الفردية عند عموم الطلبة. ٣. يتم ترك مساحة للنقاش الحر في إطار الموضوع المخصص للمحاضرة. ٤. الحرص على جانب التغذية الراجعة للمعلومات قبل نهاية المحاضرة. ٥. التواصل الكترونيًا مع الطلبة لنشر المحاضرات المسجلة، والمكتوبة من خلال الموقع الرسمي للجامعة.

Student Work load (SWL) الحمل الدراسي للطالب ل ١٥ اسبوعاً			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**30**	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	**2**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**20**	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	**1.3**
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)	5 and 10	Lo #1,#2,#10 and 11
	Assignments	2	10% (10)	2 and 12	Lo #3,#4,#6, and #7
	Projects / tutorial	1	10%(10)	Continuous	All
	Report	1	10% (10)	13	Lo #5, ,#8 and #10
Summative assessment	Midterm Exam	1 hr	10% (10)	7	Lo #1-7
	Final Exam	2hrs	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	تعريف وطبيعة حقوق الانسان
Week 2	التطور التاريخي لحقوق الانسان
Week 3	مميزات حقوق الانسان عن غيرها من الحقوق
Week 4	حقوق الانسان في الديانات السماوية
Week 5	حقوق الانسان في المواثيق الدولية
Week 6	حقوق الانسان في التشريعات الداخلية
Week 7	**حقوق الانسان الشخصية**
Week 8	حقوق الانسان الاجتماعية
Week 9	حقوق الانسان الثقافية
Week 10	حقوق الانسان الاقتصادية
Week 11	ضمانات حقوق الانسان الدولية
Week 12	ضمانات حقوق الانسان الاقليمية
Week 13	ضمانات حقوق الانسان الداخلية (الوطنية)
Week 14	الجزاءات المترتبة على المساس بحقوق الانسان
Week 15	امتحان نهائي

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1:
Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	حقوق الانسان (تطورها، مضامينها، حمايتها)/ د. رياض عزيز هادي	Yes
Recommended Texts	حقوق الانسان/ د.حميد حنون	
Websites	https://www.noor-book.com/ https://www.un.org/ar/about-us/universal-declaration-of-human-rights https://ar.wikipedia.org/wiki	

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	**Basic**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**MBO11002**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	MBO		**College**	SC	
Module Leader	Firas H. Abdulrazzak		**e-mail**	Firas_ald2020@yahoo.com	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	---------		**e-mail**	---------	
Peer Reviewer Name	Dr. Saad Hussein		**e-mail**	saad_2019@ku.edu.iq	
Scientific Committee Approval Date	18/6/2023		**Version Number**	ق/أ.م/ ٥٠٨	

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-To develop skills and understanding of different types of elements through the application of techniques. 2. To understand metals, physical and chemical properties. 3. This course deals with the basic concept of general chemistry. 4. To understand periodic table and distribution elements on it
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize the classification of elements. 2. List the various terms associated with periodic table. 3. Summarize what is meant by a basic chemical property. 4. Discuss the reaction and involvement of atoms in chemical reaction. 5. Describe bonds, oxidation number, and Lewis term. 6. Identify the elements according to conductivity and their applications. 7. Discuss the electrons distribution in the atomic levels. 8. Identify the primary terms that used to characterized physical and chemical properties.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A-Circuit Theory Starting from atomic theory and electron distribution in the outer and inner shells the details required make enough information for the principle of chemistry. [14 hrs] Enhance the principle of general chemistry when highlight in more information about losing and acceptance electrons with the abilities for forming any bonds and forming new molecules with new properties. [13 hrs] Periodic table with highlight in the orientations of molecules to show different and variance in properties. [12hrs] . Revision problem classes [6hrs] Part B-Analogue chemistry 3-Fundamentals Electron configuration, oxidation number, The ratios of forming molecules. [15hrs] Components and active site. [8 hrs] Identification of general properties.[7 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	To describe the learning activities of the students and the teaching methods of the staff. Effective module design should result in a varied range of active learning experiences for students, including learning activities which are 'research-like'. Activities should, of course, motivate and encourage deep learning (reflection on wider meanings, rather than superficial memorisation of information). They should also be varied and flexible enough to accommodate different learning styles and orientations, and allow for inclusivity of students from different backgrounds and with different kinds of learning abilities. Learning activities therefore need to include reference to independent, interdependent (peer- supported) and online activities, as well as participation in different kinds of taught class.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	100	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.66
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**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	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	Course introduction; What is biology?
Week 2	The nature of life
Week 3	Atomic structure and chemistry of water
Week 4	Carbohydrates, proteins, and lipids
Week 5	Nucleic acids
Week 6	Cells, Part I
Week 7	Exam Mid-term Exam
Week 8	Cells, Part ٢
Week 9	Energy & metabolism, Part I
Week 10	Energy & metabolism, Part ٢
Week 11	Cellular respiration, Part I
Week 12	Cellular respiration, Part ٢
Week 13	Photosynthesis
Week 14	DNA & its role in heredity
Week 15	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to Measurement
Week 2	Lab 2: Course intro; Life and the scientific theory
Week 3	Lab 3: Enzyme function I
Week 4	Lab 4: Enzyme function 2
Week 5	Lab 5: Microscope & cell structure
Week 6	Lab 6: Cell behavior
Week 7	Lab 7: Respiration
Week 8	Lab 8 : Photosynthesis

Week 9	Lab 9 : Restriction digest of plasmids
Week 10	Lab 10: Gene transformation
Week 11	Lab 11: Mitosis, meiosis, and gametogenesis
Week 12	Lab 12: Mendelian crosses
Week 13	Lab 13: Outcomes of evolution
Week 14	Lab 14: Blood Typing 1
Week 15	Final Exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	FReece J, Urry L, Cain M, Wasserman S, Minorsky P, Jackson, R. (Eds) 9th Global Edition, 2011, Campbell Biology, Pearson Benjamin Cummings.	Yes
Recommended Texts	Butler, J. (2005) Forensic DNA Typing 2nd Ed. Elsevier (MA) ISBN: 9780121479527 Forensic Science – Jackson A.R. & Jackson J., Prentice Hall, ISBN: 130432512	No
Websites	https://www.aqa.org.uk/subjects/science/as-and-a-level/biology-7401-7402/subject-content	

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	Fundamental of Forensic Science			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	FOR1106				
ECTS Credits	4				
SWL (hr/sem)	100				
Module Level		1	**Semester of Delivery**		1
Administering Department		FORN	**College**	SC	
Module Leader	**Firas H. Abdulrazzak**		**e-mail**	firas_ald2020@yahoo.com	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date		01/09/2023	**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-Forensic Science is basically the application of science to law. 2-Forensic science is used to investigate criminal cases involving a victim, such as assault, robbery, kidnapping; rape, murder and civil cases such as forgeries, fraud, or negligence.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module students will be able to: 1. Show understanding of the role of physical forensic methods in forensic practice. 2. Demonstrate knowledge of the primary evidence types, their transfer and persistence. 3. Demonstrate understanding of emerging developments in forensic science. 4. Consider a broad range of forensic techniques to determine the examination strategy, sequencing, and probative value. 5. Demonstrate understanding of quality standards in respect of scene examination.
Indicative Contents المحتويات الإرشادية	A synopsis of the curriculum [15h] This module will develop students' appreciation of a range of physical techniques applied to the collection of bulk and trace evidence materials in forensic science. Students will look more deeply into aspects of physical evidence and will deal with the practical issues of item examination, legal process and general procedure associated with the collection and submission of a range of forensically-relevant materials. Inclusive module design [15h] The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services. The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas: a) Accessible resources and curriculum b) Learning, teaching and assessment methods Internationalisation [14h] Forensic science is an inherently international subject with physical laws discovered and techniques developed and refined by scientists across

	the globe. It is facilitated by well-defined conventions in terminology and mathematical modelling which allow complex concepts to be communicated across language barriers. This module introduces students to the work of these pioneers, as well as the fundamentals behind it and so enables them to interact with this community. Where possible, the reading list has been chosen, in part, to demonstrate the diversity of backgrounds of forensic scientists working in the field.

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 type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	56	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	44	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.1
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**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7

	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	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	مفهوم واهمية علم الادلة الجنائية
Week 2	التطور التاريخي للادلة الجنائية
Week 3	انواع الادلة الجنائية
Week 4	الادلة الجنائية والاثار المادية
Week 5	اهمية البصمة الواثية في تحقيق الشخصية
Week 6	البصمات واستخدام تقنية النانو في الكشف عنها
Week 7	لطب العدلي الشرعي
Week 8	الكيمياء الجنائية
Week 9	السموم الجنائية
Week 10	تزوير الجوازات وتزييف الاوراق النقدية
Week 11	فحص اثار الاسلحة والادوات
Week 12	مسرح الجريمة واجراءات المحافظة عليه
Week 13	الاداة الجنائية الالكترونية
Week 14	الهندسة الجنائية
Week 15	امتحان
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: انواع الادلة الجنائية
Week 2	Lab 2: اهمية البصمة الواثية في تحقيق الشخصية

Week 3	Lab 3: البصمات واستخدام تقنية النانو في الكشف عنها
Week 4	Lab 4: الكيمياء الجنائية
Week 5	Lab 5:السموم الجنائية
Week 6	Lab 6: تزوير الجوازات وتزييف الاوراق النقدية
Week 7	Lab 7: مسرح الجريمة واجراءات المحافظة عليه

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Forensic Science: A very short introduction** by Jim Fraser	no
Recommended Texts	**Blood, Powder, and Residue (A rare behind-the-scenes look at the work of forensic scientists)** by Beth A. Bechky	No
Websites	https://www.nap.edu/read/21772/chapter/7	

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	Mathematics			**Module Delivery**	
Module Type	Core			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒**Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	Kus1101				
ECTS Credits	٥				
SWL (hr/sem)	١٢٥				
Module Level			**Semester of Delivery**	1	
Administering Department	RS		**College**	RG	
Module Leader	Sajeda Kareem Radhi		**e-mail**	sajeda.kareem@kus.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	6/11/2023		**Version Number**		

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. Identify the properties of mathematical functions and their opposites. 2. Familiarity with the properties of polynomials, exponential and logarithmic functions, trigonometric functions and their opposites. 3. Recognize the concept of differential functions and its relationship to speed and the rate of their change with time (acceleration). 4. Identify the integration of the functions and methods of Integration. 5. Knowledge of applications of integral in geometry.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize properties of functions and their inverses; 2. Recall and use properties of polynomials, rational functions, exponential, logarithmic, trigonometric and inverse-trigonometric functions; 3. Apply the differentiation procedures to solve related rates and extreme value problems; 4. To understand the term integration. 5. To distinguish between definite and indefinite integration. 6. To describe the area and volume by means of integration.
Indicative Contents المحتويات الإرشادية	1-To know the methods of differentiation of functions accurately and its applications. 2- To know the relationship between the function term and its differential. 3- To extract the area and volume through integration. 4 - To know the differentiation and integration of functions. 4- To use integration methods to find complex integrals.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Following up the scientific development of mathematics by reviewing modern curricula. • Follow-up and development of academic courses and compare them with other universities. • Using the latest teaching aids to motivate the student to learn and understand.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	50		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	75		
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5,10	LO#1,2,10 and 11
	Assignments	2	10% (10)	2,12	LO#3,4,6 and 7
	Projects / Lab.				
	Report	1	10% (10)	13	LO#5,8, and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO,#1-7
	Final Exam	2hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Functions, Inverse Functions.
Week 2	Trigonometric Functions, Inverse Trigonometric Functions.
Week 3	Exponential and Logarithmic Functions.
Week 4	Limits and Continuity
Week 5	The Derivative, The Chain Rule.
Week 6	Implicit Differentiation, L'Hopitals Rule.
Week 7	The Derivative in graphing and applications, Relative Extrema.
Week 8	Rolle's Theorem; Mean –Value Theorem
Week 9	The indefinite integral, Areas under a curve
Week 10	The fundamental theorem of integral calculus, Area between two curves
Week 11	The integral of trigonometric functions, the integral of inverse trigonometric
Week 12	The integral of the functions $\log_u(x)$,$\ln u(x)$,$e^{u(x)}$ and $a^{u(x)}$
Week 13	Methods of integration , powers of trigonometric functions
Week 14	Integration by parts
Week 15	**Volumes**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	**Thomas & Finney "Calculus and Analytic Geometry" (2005), 11th edition, Addison Wesley.**	yes
Recommended Texts	**Howard Anton,IrI Bivens & Stephen Davis "Calculus"(2009),9thedition,John Wiley & Sons,NC.**	yes
Websites	**Various lectures and lecture notes on the internet.**	

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.