نموذج وصف المواد الدراسية لمسار بولونيا للعام الدراسي 2025-2026 لقسم الادلة الجنائية

المستوى الاول

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	**5**				
SWL (hr/sem)	**125**				
Module Level	1st		**Semester of Delivery**	first	
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	48		12
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	77		19.25
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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Fundamental of computer Science**			**Module Delivery**	
Module Type	**Suport**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**2011 FOR**				
ECTS Credits	**3**				
SWL (hr/sem)	**100**				
Module Level	UGx		**Semester of Delivery**	first	
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 the MATLAB windows and all the types of and dealing with program 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>

	Random Access ,Hardware, Cache Memory, Primary, Memory (Main Memory) 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, Types Workspace Window, Editor Window, Figure Window, General MATLAB Code: Constant Value, of Statements, Rules for Statement Editing, Arithmetic Statement. [6 hrs] Variables, Numerical. Variable, Logical Variable, Character Variable. 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 [7 hrs] Statement, reading and writing data file. 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 [6 hrs] Line Width, and Color, Add Title and Axis Labels.

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	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	15.75
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	12	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	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 assessment	**Midterm Exam**	2hr	10% (10)	9	LO # 1-8
	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	Constant Value, Variables, Numerical. Variable, Logical example of Lab 6: MATLAB Windows, 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	**Democracy and Human Rights**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	KUS1103				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	UGx		**Semester of Delivery**	first	
Administering Department	MPHY		**College**	SCI	
Module Leader	Dr.Othman marwan abd		**e-mail**	Othman.marwan@kus.edu.iq	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	none		**e-mail**	none	

Scientific Committee Approval Date	11/06/2023	**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	This course aims to educate the student about democratic practices and personal and public freedoms, and enable him to use his rights in practical life on the basis of awareness and knowledge of those practices guaranteed by law.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The learning outcomes of the Freedom and Democracy course are to introduce the student and provide him with the legal culture related to his exercise of all freedoms, as well as the practice of democracy according to the correct legal foundations.
Indicative Contents المحتويات الإرشادية	The subject of freedom and democracy is a theoretical subject of the general requirements of the university, which the student studies through understanding the implications of each of the terms freedom and democracy.[27 hr]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning strategy This aspect includes the use of the following requirements: First, the use of electronic methods in education, including the international network system Secondly, trying to retrieve the previous lectures by allocating time out from the lecture to ask oral questions and interactive discussion.

	Third, ask intellectual questions to ensure the extent of students' comprehension of the material Fourthly, directing the students to the discreet legal sources that deal with the subject of human rights and public freedoms. Fifthly, assigning the students to prepare reports and research, in order to eliminate students from researching, in-depth, and perusing the content of the subject in terms of accurate and important details, which are related to public freedoms and private freedoms, in addition to their relationship with democracy.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.25
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, 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**	1 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 الحرية
Week 2	الحريات الشحصية
Week 3	الحريات العامة
Week 4	حرية الدين والعقيدة
Week 5	حرية التعبير عن الراي والمساواة امام القانون
Week 6	حرية التنظيم/والاقليات
Week 7	مفهوم الديمقراطية
Week 8	مميزات الديمقراطية
Week 9	الديمقراطية في الدستور
Week 10	انواع الديمقراطية (المباشرة)
Week 11	الديمقراطية شبه المباشرة
Week 12	الديمقراطية النيابية
Week 13	العلاقة بيت حقوق الانسان والديمقراطية
Week 14	المجتمع المدني والديمقراطية
5**Week 1**	**EXAM**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	مبادئ حقوق الانسان والديمقراطية والحرية ا.م فيصل شلال عباس 2020	No
Recommended Texts	الحرية والديمقراطية البدائية في الحضارات القديمة تأصيل الأصول لـ مزهر الخفاجي 2019	No
Websites	https://mawdoo3.com/	

Grading Scheme مخطط الدرجات

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

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية				
Module Title	**General Biology 1**			**Module Delivery**
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	SCI 1104			
ECTS Credits	7			
SWL (hr/sem)	175			
Module Level	UG	**Semester of Delivery**	first	
Administering Department	Type Dept. Code	**College**	Type College Code	
Module Leader	Asma A. Mansure	**e-mail**	Asmaa.mansoor@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	Asma A. Mansure	**e-mail**	Asmaa.mansoor@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 science and techniques that underpin forensic biology. 2. Topics covered will include identification of biological fluids, the analysis the human genome in forensic biology, blood stain pattern analysis and forensic anthropology. 3. Material covered in lectures will be illustrated through lab work. 4. Highlight in most theories that was deal with biology system for live. 5. Our aim is to provide students with opportunities to develop academically, professionally and personally: to broaden their ambitions, extend their attitudes, challenge their assumptions, and assist towards unlocking their potential to succeed in their studies and future lives.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	.1 Explain the analytical, laboratory and legal requirements of producing DNA profiles. .2 Summarize what is meant by a basic biology science. .3 Perform interpretation of DNA profiling results, including calculation of likelihood ratios. .4 Critically evaluate DNA profiling results citing significant research in the field. .5 Show an understanding of the scientific basis and utilisation of techniques of bone anthropometry and pathology in the study of human tissue. .6 Demonstrate the ability to critically evaluate body fluid evidence and blood stain patterns.
Indicative Contents	Indicative content includes the following.

المحتويات الإرشادية	
	On completion of this module, students are expected to be able to: 1 Demonstrate knowledge of the basic structures, functions and growth characteristics of cells.[13h] 2 Demonstrate knowledge of the structure and function of the four principal tissue types.[13h] 3 Demonstrate an understanding of Mendelian genetic inheritance. [15hrs] Demonstrate understanding of the role of variation in speciation and evolution. [15 hrs] Evolution of the eukaryotic cell, membrane structure and membrane transport mechanisms, structure and function of the nucleus, ribosomes, endoplasmic reticulum, Golgi Body, lysosomes, mitochondria and chloroplasts. [15 h] Mitosis and meiosis. Structure and function of epithelial, connective, nervous and muscle tissue. Mendel's Laws, inheritance, genotype, phenotype, dominance, sex determination, sex-linkage, variation, speciation and evolution.. [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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	24.25
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	Exam Mid-term Exam
Week 7	Cells, Part I
Week 8	Cells, Part 2
Week 9	Energy & metabolism, Part I
Week 10	Energy & metabolism, Part 2
Week 11	Cellular respiration, Part I
Week 12	Cellular respiration, Part 2

Week 13	Photosynthesis
Week 14	DNA & its role in heredity
Week 15	EXAM
Week 16	**Preparatory week before the 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
Week 15	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	No

	Forensic Science – Jackson A.R. & Jackson J., Prentice Hall, ISBN: 130432512	
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

Module Information			
Module Title	**General Chemistry**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**SCI 1105**		
ECTS Credits	**7**		
SWL (hr/sem)	**175**		
Module Level	**1st**	**Semester of Delivery**	**First**
Administering Department	**Forensic**	**College**	**Science**

Module Leader	**أ.د. محمد عبد الباسط عبد الجبار السامرائي**	**e-mail**	**mohammed.a.baset@kus.edu.iq**
Module Leader's Acad. Title	**Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	م.م. ثامر عبد ريحان	**e-mail**	-
Peer Reviewer Name	-	**e-mail**	-
Scientific Committee Approval Date		**Version Number**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	-	**Semester**	-
Co-requisites module	**Organic Chemistry**	**Semester**	**2**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• To develop skills and understanding of different types of elements through the application of techniques. • To understand metals, physical and chemical properties. • This course deals with the basic concept of general chemistry. • To understand periodic table and distribution elements on it.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Recognize the classification of elements. • List the various terms associated with periodic table. • Summarize what is meant by a basic chemical property. • Discuss the reaction and involvement of atoms in chemical reaction. • Describe bonds, oxidation number, and Lewis term. • Identify the elements according to conductivity and their applications. • Discuss the electrons distribution in the atomic levels.

	• Identify the primary terms that used to characterize 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. [15hrs] • 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. [16hrs] • 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 • Fundamentals Electron configuration, oxidation number, the ratios of forming molecules. [15hrs] • Components and active site. [9hrs] • Identification of general properties.[9hrs]
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 memorization 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	**78**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**19.5**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**97**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**24.25**
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**	**5**	**10**	**2, 4, 7, 10, 13**	**1-5**
	Assignments	**5**	**10**	**3, 5, 7, 9, 12**	**1-5**
	Projects / Lab.	**5**	**10**	**3, 6, 9**	**2-3**
	Report	**2**	**10**	**9**	**1-5**
Summative assessment	**Midterm Exam**	**1**	**20**	**8**	**1-3**
	Final Exam	**1**	**40**	**16**	**1-5**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	**An Introduction to Chemistry**
Week 2	**Periodic Table of the Elements**
Week 3	**Atomic Structure Types of Bonding**
Week 4	**Atomic Structure Types of Bonding**
Week 5	**Physical and Chemical Properties – Oxidation Numbers – Drawing Lewis Structures**

Week 6	**Chemical Reactions**
Week 7	**Preparation Solutions (Types of Concentration)**
Week 8	**Exam**
Week 9	**Standard Solution**
Week 10	**Acids and Bases**
Week 11	**Buffer Solutions**
Week 12	**Redox Reactions**
Week 13	**Titrimetric Methods**
Week 14	**Separation Method of Elements**
Week 15	**Preparatory Week Before the Final Exam**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**General safety rules for Laboratory and equipment's**
Week 2-4	**Standard Solution**
Week 5	**Preparation of standard solution from liquid solutions**
Week 6	**Preparation of standard solution from solid materials**
Week 7	**Titration Strong Acid with Strong Base**
Week 8	**Titrating Sodium Carbonate With Hydrochloric Acid**
Week 9	**pH - Metric Titration**
Week 10	**Exam**
Week 11	**Conductometric Titrating of Strong Acid With Strong Base**

Week 12	ل
Week 13	**Titration of a Mixture of Carbonate (CO_3^{2-}) and Bicarbonate ($NaHCO_3^-$)**
Week 14	**Separation of I Group Cations (Ag^+, Pb^{2+}, Hg_2^{2+})**
Week 15	**Preparatory Week Before the Final Exam**
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Chemistry: The Central Science by Woodward, Brown and Others, 2017**	**No**
Recommended Texts	**Instant Notes in General Chemistry by Mohammed Abdul Baset, Printed by Dar Alayam, Amman-Jordan, 2014, 299 p.**	**Yes**
Websites	**https://ghostwriter144.neocities.org/img/scienceChemistryTheCentralScience12th.pdf**	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A^+**	امتياز	**90–100**	**Outstanding performance with distinction**
	A	جيد جدًا	**80–89**	**Excellent understanding and mastery of the subject**
	B	جيد	**70–79**	**Very good performance with minor weaknesses**
	C	متوسط	**60–69**	**Good understanding, but with some gaps**
	D	مقبول	**50–59**	**Satisfactory; meets minimum requirements**
Fail Group (0 – 49)	**F**	راسب	**0–49**	**Unsatisfactory; does not meet minimum requirements**

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	Principles of Forensic Science			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	FOR 1001				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level	UG		**Semester of Delivery**	first	
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	Forensic Science is basically the application of science to law.-1 Forensic science is used to investigate criminal cases involving a victim, such as -2 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	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	12
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	102	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	25.5
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, 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	The concept and importance of forensic science
Week 2	Historical development of forensic evidence
Week 3	Types of criminal evidence
Week 4	Forensic evidence and material traces
Week 5	The importance of the genetic fingerprint in achieving personality
Week 6	Fingerprints and the use of nanotechnology in detection
Week 7	Forensic forensic medicine
Week 8	Forensic chemistry
Week 9	Criminal toxicology
Week 10	Forgery of passports and counterfeit banknotes
Week 11	Examination of traces of weapons and tools
Week 12	Crime scene and preservation procedures
Week 13	Electronic forensic tool
Week 14	Forensic engineering
Week 15	exam
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 مادة اللغة العربية

Module Information معلومات المادة الدراسية					
Module Title	**اللغة العربية 1**			**Module Delivery**	
Module Type	**Suport**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	KUS 12010				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level	UGx		**Semester of Delivery**	second	
Administering Department	MPH		**College**	SCI	
Module Leader	Dr. Ahmed kahlaf		**e-mail**	Ahmed.k@kus.edu.iq	
Module Leader's Acad. Title	lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	none		**e-mail**	none	
Scientific Committee Approval Date	11/06/2023		**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	1- تعلم العربية السليمة كونها اللغة الرسمية للوطن 2- اللغة جوهر الهوية ورمزها 3- اللغة تختلف عن اللهجة، فالاولى عالمية والثانية محلية 4- توظيف المفردات الفصيحة في الصياغة الاكاديمية للبحوث العلمية مترجمة بنظيرها الفصيح 5- التمكّن من كتابة البحوث والمقالات ذات المحتوى العلمي الصرف باللغة العربية الفصحى 6- تجنب الاخطاء الشائعة في الكتابة واختيار المفردات الصائبة 7- اثراء الخزين المعجمي لدى الطالب للمساعدة في بناء كاريزما التواصل الكلامي 8- الاطلاع على نماذج من الادب العربي شعرا ونثرا لما لها من اساس في بناء الجانب الثقافي المتنوع لدى الطالب 9- كتابة الاعداد بتمكّن فضلا الكتابة الصحيحة في صياغة الطلبات الرسمية 10- التعرف على الدرس الصوتي في اللغة العربية وعلاقته بعلم الفيزياء
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	عند انتهاء مفردات المادة الدراسية يكون الطالب متمكنا من: 1- الكتابة السليمة خالية من الاخطاء 2- التعبير العلمي الاكاديمي الصحيح 3- استعمال المفردات الفصيحة توظيفا ونطقا 4- اضافة رصيد لغوي ومفاهيم جديدة لمعاني الكلمات 5- القدرة على المخاطبة الادارية في الطلبات الرسمية
Indicative Contents المحتويات الإرشادية	1ـ لكل تخصص لغته التي تومئ اليه، وتدل عليه، ولغة كل علم تنبع من طبيعة كنه، فالاختصاصات العلمية لها معجم خاص بها يعبر عن جوهرها ومضمونها، فضلا عن المصطلحات الخاصة بها التي تدل عليها، وكذلك المصادر العلمية التي يُرجع اليها، والحال كما في اللغة الادبية؛ فهي ايضا لها مفرداتها وطريقة كتابتها والتعبير بها وعبرها، ومصطلحاتها الخاصة بها التي تعبر عنها وتدل عليها. **[4 hrs]** 2ـ المعاجم – بشكل عام - على اختلاف موارها تمثل محتوىً وكنفا لمفردات اي لغة مقترنة بالشرح والتفسير لتلك المفردات، اما المعاجم في اللغة العربية فهي واسعة ومتنوعة؛ فهناك معاجم غير معجمات اللغة، فالعربية فيها اول معجم جغرافي في التاريخ، معجم البلدان لـــ (ياقوت الحموي)، فضلا عن المعاجم المتخصصة في جزئية معينة، مثل معاجم البلاغة، فضلا عن تنوع المدارس في تأليف المعاجم وتبويبها وطريقة البحث عن المفردة فيها. **[4 hrs]** 3ـ العلامة تندرج ضمن حقل علم السيمياء او السيميائية، وعلامات الترقيم من المواضيع المهمة بالأخص في البحوث الاكاديمية، بغض النظر عن التخصص، سواء كان التخصص علميا، او انسانيا، من هنا تأتي اهمية علامات الترقيم؛ فلها دور سيميائي، ودلاليّ مهم في الكتابة النّصيّة وفي بناء النص، فهي تُسهّل الفهم على القارئ، وتوضح المعنى المقصود، عبر القراءة والتلفّظ بالعبارة، فعلامات التّرقيم خير وسيلة لإظهار الصّراحة وبيان الوضوح في الكلام المكتوب؛ لأنّه يدلّ النّاظر إلى تلك العلامات الاصطلاحيّة وعلى العلاقات التي تربط أجزاء الكلام بعضها ببعض بوجه عام، وأجزاء كلّ جملة بوجه خاص، وكما يقول المتخصصون عن علامات الترقيم: بأن الوقف ليس مستقلّاً، وإنّما هو من توابع التّفكير، أي: إنّ السّكتات المقرّرة بمقادير مضبوطة في مواضع معينة، ليست مجرد محطّات تنفسيّة بالمعنى البيولوجيّ للتّنفس، وإنّما في المقام الأوّل وقفات معنويّة. فالعبرة من النّاحية اللّغويّة ليست بأن يستعيدَ القارئ نفسَه، بل المهم أن يتعاطى القارئ السكتَ بمقاديرَ معلومة، وفي مواضعَ محددة من السلسلة المنطوقة رفعاً للَبس، وصوناً لمقصد المتكلّم عن التبدّل، فهذه العلامات تجسيد لمشاعر الكاتب وقصدياته فيها. **[6 hrs]**

Indicative Contents المحتويات الإرشادية	4ـ الاسلوب الكتابي يمثل بصمة للكاتب الذي يصدر عنه، ويتجسد عند القارئ، ولكل كاتب اسلوبه الخاص به، ينعكس ذلك في نتاج الكاتب، وللأسلوب انواع مختلفة، فهناك الاسلوب العلمي، والاسلوب الادبي، والاسلوب الخطابي، ولكل نوع خصائصة، وقالبه الذي يتكون فيه. **[4 hrs]** 5ـ الاحداث التي تقترن بالزمن تمثل الافعال، والأفعال في العربية تناظر الازمنة في اللغات الاخرى من جانب معين، او من جزئية معينة، والعربية تحتوي على عدد كبير من الجذور، جذور الأفعال، ففي العربية أفعال ثلاثية ورباعية وخماسية وسداسية، والفعل جزء مهم من اجزاء الكلام الاساسية، فضلا عن الجانب الصوتي في هذه الجذور، فعلم (الأصوات الفيزيائي) من العلوم المهمة في اللغة العربية، إذ يُعد علم (الأصوات الأكوستيكي) علما أقرب إلى الفيزياء منه للعلوم الإنسانية، وهو يمثل المرحلة الوسطى بين علم الأصوات النطقي وعلم الأصوات السمعي، وعلاقته مع اللغة العربية انطلاقا من البذرة الاولى في دراسة مخارج الحروف فيزيائيا ودلاليا. **[4 hrs]** 6ـ الكلام عن الشعر لا ينتهي؛ فالشعر تجسيد لمشاعر الفرد المتمثل بالشاعر، والمشاعر الجمعية للانسانية جمعاء، فهو موجود لدى كل بني البشر، والشعر العربي القديم كان بمثابة نشيدا وطنيا لهم، يمثل هويتهم الثقافية الرصينة ويمثل سجلا لتاريخهم وأمجادهم، على اختلاف اغراضه من غزل ومدح ورثاء وغير ذلك، وبحور الشعر في الشعر العربي مبنية بناء صوتيا فريدا عبر التفعيلات التي وضعها الخليل بن احمد الفراهيدي ووضع فلسفتها وكنهها وقواعدها، والشعر رصيد ثقافي، وحجة في الكلام، وزينة ورونقا يضاف على شخصية الفرد والمجتمع بشكل عام. **[4 hrs]** 7ـ الهمزة من المواضيع الاجرائية لدى الفرد الكاتب، بغض النظر عن التخصص، فيحتاجها كل فرد ناطق كاتب بها، فلها قواعدها التي تصدر عنها، وتُكتب بالشكل السليم منها، فموضوع رسم الهمزة من الاهمية بمكان؛ فرسمها يغير من المعنى، فلا بد من وضعها ورسمها بالشكل الصحيح لتوخي التعبير الدقيق عن المعنى المقصود. **[4 hrs]** 8ـ المفاعيل في اللغة العربية، من الموضوعات المهة في درس اللغة العربية، ولا بد لكل دارس من معرفتها بشكل عام، وهناك آراء مختلفة بين البلاغيين والنحويين عن المفاعيل، هل ان تلك المفعولات فضلة، أم أنها ركن رئيس في الجملة ؛ فالنحويون يرون انها فضلةً في الجملة، وأن ركني الجملة الأساسيين هما: الفعل، والفاعل ، وأما البلاغيون فيرون :إنها ليست فضلة، وإنما هي ركن أساسي في الجملة؛ لأن كل كلمة تَدُل على معنى في الجملة، واذا ما دلت على معنى فلا تُعد فضلة، وإنما هي ركن رئيس في الجملة وبنائها، ورأي البلاغيين أقرب للصواب من رأي النحويين، فدراستها في العربية لغير المختصين مما يضيف لهم خزينا تعبيريا متنوعا. **[4 hrs]** 9ـ من المعروف وجود ظاهرة الأخطاء اللغوية نحويةً كانت أو املائية أو اسلوبية، عند متحدّثي اللغة العربية وبالأخص عند غير المختصين بها ولا سيما مَن يعملون في مجال الاعلام، وهذه الظاهرة اتسعت وزاد انتشارها في العصر الحديث، فأخذت هذه الأخطاء تغزو مجالات الدراسة جميعها، من ذلك موضوع (العدد) في اللغة العربية، فنجد كثيراً من الطلبة وكذلك من عامة الناس يستعملون الأرقام بدلاً من كتابتها بالحروف؛ وذلك لتجنب الوقوع في الخطأ وهذا دليل ضعف لا يليق بالدارس أياً كان تخصصه؛ ولهذا فموضوع العدد وقواعد كتابته في اللغة العربية موضوع لا غنىً عنه في زمن لغة الأرقام. **[4 hrs]** 10ـ هناك مجموعة من الالفاظ متداولة بشكل كبير، تُستعمل في غير مكانها الصحيح، وفي غير ما وُضعت له وهذه الالفاظ تُستعمل في المخاطبات الرسمية الادارية بالمعنى غير الصحيح او الدقيق الذي تحمله تلك الألفاظ من معاني، فضلا عن أهمية توخي الدقة في هذه الألفاظ توظيفا لها في الطلبات الرسمية التي تُقدم على اختلاف موضوعاتها، فالطلب لا بد من ان يكون مختصرا مركزا، يعطي الفكرة الموجزة، والهدف المقصود منه ازاء صاحب الادارة الذي تُقدم اليه الطلبات، وما في ذلك من ايجابيات العمل في التخفيف واختصار للجهد والوقت في تنفيذ المهام الادارية الموكلة الافراد على اختلاف درجاتهم. **[4 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	صناعة شخصية متكاملة للطالب الجامعي من حيث التخصص العلمي الدقيق والتخصص المساند

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.25
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, 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**	1 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	الفرق بين اللغة العلمية واللغة الادبية
Week 2	المعاجم العربية وانواعها
Week 3	علامات الترقيم
Week 4	الاسلوب
Week 5	الأفعال – أنواعها وتقسيماتها
Week 6	نماذج مختارة من الشعر العربي القديم - الشعر الاسلامي - الشعر الاموي
Week 7	Mid-term Exam
Week 8	رسم الهمزة / همزة الوصل وهمزة القطع

Week 9	كتابة الهمزة بداية الكلام وآخره
Week 10	المبتدأ والخبر – مهارات كتابة العدد
Week 11	المفاعيل / المفعول به – المفعول لأجله
Week 12	المفعول معه – المفعول فيه – المفعول المطلق
Week 13	النثر العربي
Week 14	الأخطاء الشائعة – طريقة كتابة الطلبات الرسمية
Week 15	نماذج مختارة من الشعر العباسي والشعر الحديث
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Texts	Available in the Library?
Required Texts	**كتاب: العربية الجامعية لغير المتخصصين / د. عبده الراجحي** كتاب: النحو التطبيقي / د. عبده الراجحي	كلا
Recommended Texts	الصرف التطبيقي / د. عبده الراجحي النحو الوافي / عباس حسن تاريخ الادب العربي / شوقي ضيف	كلا
Websites	شبكة الفصيح لعلوم اللغة العربية	

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	English language 1			**Module Delivery**	
Module Type	**Suport**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**KUS 12011**				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	UGx1		**Semester of Delivery**	second	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Saif Aldeen Mowafaq		**e-mail**	E-mail	
Module Leader's Acad. Title	Assist. 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	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	a. to enable the learner to communicate effectively and appropriately in real life situation: b. to use English effectively for study purpose across the curriculum; c. to develop interest in and appreciation of Literature; d. to develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing; e.to revise and reinforce structure already learnt.s
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Enhance the efficiency of student to use many reference or books which reported in English language. 2. To develop the competence that students need to read a wide range of general and academic texts in English. 3. To develop students competence in reference skills [locating and evaluating information needed for assignments in a library. 4. demonstrate adequate general and detailed comprehension of a range of advanced general and academic texts 5. undertake research in an academic library
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Attention will be given to both grammatical form and communicative function. Controlled practice will be given to consolidate form and meaning. Classroom activities will be designed to maximize active participation and use of the target language. The Language Labs will be used for students to work on their own individual needs and problems. Students' language skills will improve through completion of a range of tasks, both individual and group-based. In this programme module the Teacher / Tutor will ensure that the Learner uses correct pronunciation and grammatical constructions , to include: sentence connectors, for example, and, or, with, but, then question words, for example, why, where, who, when when communicating in the English language. An ability to read a minimum of 10 introductory level reading texts, on both social information and work-related information. In reading the texts, the Learner will complete tasks to demonstrate an understanding of the context and content of the text An ability to read the message being communicated in a minimum of 6 common notices and signs The capacity to complete a simple form requiring personal details such as name, address, phone number, age, date of birth The collection of work may include work sheets, cloze tests, multiple choice statements or other appropriate

	evidence in the form of written, oral, graphic, audio, visual or any combination of these. Any audio or video evidence must be provided on tape. Make different activity for the student to be able to use huge amount of sources such report, books, journals to enhance the abilities and skills. Revision problem classes [6 hrs] Part B - Develop the toking and spooking skills

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Use will be made of individual, pair and groupwork to develop students abilities to read increasingly complex academic and general texts. Other skills will be practised and developed within this modules and students will be expected to work extensively out of class to develop their reading fluency. Students will study the specialist vocabulary in the context of published listening and reading materials produced particularly for these ESP situations and also explore lexis within authentic sources. Groups will be managed according to specialist areas and students will be expected to work extensively outside class contact time. Emphasis will be placed on integrating this module to work done within the International Foundation option module programme

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.25
Total SWL (h/sem)	50		

الحمل الدراسي الكلي للطالب خلال الفصل	

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	Reading Comprehension
Week 2	Writing I
Week 3	Writing I
Week 4	Learning English through Literature
Week 5	Advanced Reading
Week 6	Linguistics
Week 7	Advanced Writing
Week 8	Grammar I
Week 9	Grammar II
Week 10	Introduction to Literature
Week 11	Debate and Dialogue
Week 12	General Translation
Week 13	Listening & Speaking
Week 14	Listening & Speaking
Week 15	Exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to Agilent VEE and PSPICE
Week 2	Lab 2: Thévenin's / Norton's Theorem and Kirchhoff's Laws
Week 3	Lab 3: First-Order Transient Responses
Week 4	Lab 4: Second-Order Transient Responses
Week 5	Lab 5: Frequency Response of RC Circuits
Week 6	Listening & Speaking
Week 7	Listening & Speaking

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Haarman et al. *Reading Skills for the Social Sciences*. OUP Cotton, D. et al. *Business Class.* Nelson	NO
Recommended Texts	An appropriate selection of Collins Specialist English Dictionaries, ArangeofA-leveltypeStudyGuides	No
Websites		

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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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 physics			**Module Delivery**	
Module Type	CORE			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	SCI 12012				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level	2nd		**Semester of Delivery**	second	
Administering Department	Forensic science		**College**	Science	
Module Leader	أ.د. براق يحيى كاظم		**e-mail**	dr.burak.kadem@kus.edu.iq	
Module Leader's Acad. Title	Prof.		**Module Leader's Qualification**	PhD	
Module Tutor	أ.د. براق يحيى كاظم		**e-mail**	dr.burak.kadem@kus.edu.iq	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**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. Understand the general physics concepts 2. Describe the effects of using physics law in forensic investigations 3. Evaluate the important of physics law in life
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify and classify different types of Newtons laws 2. Evaluate the importance of using Newtons law in forensic investigations 3. Interpret some physical terms 4. Apply the physics of motions in forensic 5. Use the fluid laws such as Archimedes law in determination of some problems.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Lectures and Interactive Presentations 2. Problem-Solving Sessions 3. Laboratory and Practical Sessions 4. Group Discussions and Peer Learning 5. Self-Directed Learning (SDL) 6. Workshops and Seminars

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	24.25
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	5	10% (10 Marks)	2, 4, 7, 10, 13	
	Assignments	5	10% (10 Marks)	3, 5, 7, 9, 12	
	Projects / Lab.	5	10% (10 Marks)	3, 6, 9	
	Report	2	10% (10 Marks)	8	
Summative assessment	Midterm Exam	1.5 hr	10% (10 Marks)	7	
	Final Exam	3 hr	50% (50)	16	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Physical unit systems and unit conversion
Week 2	Motion in One Dimension
Week 3	Vector analysis: vector addition and subtraction
Week 4	Newton's Laws of Motion
Week 5	Ohm's Law
Week 6	Relationship Between Voltage, Current and Resistance
Week 7	Midterm EXAM
Week 8	Electric Circuit
Week 9	Fluid Pressure - Hydrostatic Pressure

Week 10	Archimedes Principle
Week 11	Bernoulli's Principle
Week 12	Bernoulli's Equation Derivation
Week 13	Assumptions:
Week 14	Principle of Continuity
Week 15	Bernoulli's Principal Example
Week 16	Final EXAM

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to general physics lab
Week 2	Graph drawing and measurements in Physics lab
Week 3	Vectors
Week 4	Force Table
Week 5	Hook's law
Week 6	Ohm's Law Experiment
Week 7	Series and parallel circuits
Week 8	1st EXAM
Week 9	Simple Pendulum
Week 10	Archimedes' Principle
Week 11	Reflection of light
Week 12	Refraction of light
Week 13	Measurements of Liquid Density by Loaded Test Tube Method
Week 14	2nd EXAM
Week 15	مراجعة شاملة

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Lectures prepared by the Module leader	Yes
Recommended Texts	by Henry Crew General Physics: An Elementary Text-Book for Colleges	No
Websites	College Physics Publisher: OpenStax College 2012 https://www.e-booksdirectory.com/details.php?ebook=7721	

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 2**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	FOR12012		
ECTS Credits	**8**		
SWL (hr/sem)	200		

Module Level	UGx	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Asmaa Mansour Al-Hakeem	**e-mail**	asmaa.mansoor@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	Asmaa Mansour	**e-mail**	asmaa.mansoor@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 science and techniques that underpin basic biology. 2. Topics covered will include identification of 3. Material covered in lectures will be illustrated through lab work. 4. Highlight in most theories that was deal with biology system for live. 5. Our aim is to provide students with opportunities to develop academically, professionally and personally: to broaden their ambitions, extend their attitudes, challenge their assumptions, and assist towards unlocking their potential to succeed in their studies and future lives.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Explain the life and Human , laboratory and legal requirements of producing DNA profiles. 2. Summarize what is meant by a basic biology science. 3. Perform interpretation of DNA profiling results, including calculation of likelihood ratios. 4. Critically evaluate DNA profiling results citing significant research in the field. 5. Show an understanding of the scientific basis and utilisation of techniques of bone anthropometry and pathology in the study of human tissue. 6 . Identify the tissues and organs in the human body
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A - primary information of biology science On completion of this module, students are expected to be able to: 1 Demonstrate knowledge of the basic Cell Reproduction , Genetics , Biotechnology, Tissue & Organs in the Human Body , Immunity and Disease 2 Demonstrate knowledge of the structure and function of the four principal tissue types. 3 Demonstrate an understanding of Mendelian genetic inheritance. [15 hrs] 4 Demonstrate understanding of the role of variation in Ecology. [15 hrs] 5 Evolution of the Genetics , Biotechnology. [16 h]

	6 Demonstrate an understanding type of Tissue & Organs in the Human Body 7 Demonstrate an understanding Immunity and Disease. [15 hrs] Part B - essential and details Fundamentals To publicise 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	122	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	30.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	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	Cell Reproduction
Week 2	Introduction to Genetics
Week 3	Chromosomes and Human Genetics
Week 4	DNA , Genes and Biotechnology
Week 5	Principles of Ecology
Week 6	Exam Mid-term Exam
Week 7	Tissue , Part 1
Week 8	Tissue , Part 2

Week 9	Organs and Organs System
Week 10	Circulation – Heart and Blood Vessels and Blood
Week 11	Respiration , Digestion System , Urinary System
Week 12	Muscular , Skeleton System
Week 13	Nervous System , Sensory System
Week 14	Immunity and Disease
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Identify the Cell Reproduction
Week 2	Lab 2: Identify the Genetics
Week 3	Lab 3: Identify the Chromosomes and Human Genetics
Week 4	Lab 4: Identify the DNA , Genes and Biotechnology
Week 5	Lab 5: Identify the Principles of Ecology
Week 6	Lab 6: EXAM
Week 7	Lab 7: Microscopic observation of Tissues part 1
Week 8	Lab 8 : Microscopic observation of Tissues part 2
Week 9	Lab 9 : Identify the Organs and Organs System and understand their functions
Week 10	Lab 10: Identify the Circulation – Heart and Blood Vessels and Blood and type of Blood and understand their functions
Week 11	Lab 11: Identify the Respiration , Digestion System , Urinary System and understand their functions
Week 12	Lab 12: Identify the Muscular , Skeleton System and understand their functions
Week 13	Lab 13: Identify the Nervous System , Sensory System and understand their functions
Week 14	Lab 14: Identify type of Disease relationship with immunity
Week 15	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	Human Biology, 12th edition by Sylvia Mader. McGraw Hill Publishing Co., 2008. (10th can be used if necessary) Human Biology, Laboratory Manual by Sylvia Mader, 12th edition, McGraw Hill, 2008. Optional Texts: Anatomy & Physiology Coloring Workbook & Study Guide, 9th edition by Elaine Marieb	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
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Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**Organic Chemistry**	**Module Delivery**
Module Type	**core**	☒ **Theory** ☐ **Lecture** ☒ **Lab**
Module Code	**FOR 12023**	

ECTS Credits	**8**			**☒ Tutorial ☐ Practical ☐ Seminar**
SWL (hr/sem)	**200**			
Module Level	**2nd**		**Semester of Delivery**	**second**
Administering Department	**Forensic**	**College**	**Science**	
Module Leader	**أ.د. محمد عبد الباسط عبد الجبار السامرائي**	**e-mail**	**mohammed.a.baset@kus.edu.iq**	
Module Leader's Acad. Title	**Professor**	**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	**م.م. ثامر عبد ريحان**	**e-mail**		
Peer Reviewer Name		**e-mail**		
Scientific Committee Approval Date		**Version Number**	**2.0**	

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

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims **أهداف المادة الدراسية**	**Upon completion of this module, students will be able to:** • **Understand the structures of organic molecules, recognize and name them, and predict their chemical properties.** • **Discuss and analyze reactions of common organic compounds.** • **Design simple synthetic pathways for organic molecules from available starting materials.**

	• **Safely perform basic organic laboratory experiments following safety guidelines.**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	The expected Module Learning Outcomes for the Organic Chemistry course are categorized into knowledge, skills, and ethics, as detailed in the academic program description: **Knowledge (A)** • A1: Demonstrate understanding of fundamental principles of organic chemistry, including molecular structure, nomenclature, and functional groups. • A2: Explain the relationship between structure and physical/chemical properties of organic compounds. **Skills (B)** • B1: Analyze and interpret the reactivity of organic compounds using mechanistic reasoning. • B2: Predict reaction outcomes based on structure–reactivity relationships. • B3: Perform basic organic laboratory techniques, including synthesis and purification. • B4: Apply data analysis and follow laboratory safety procedures accurately. **Ethics and Values (C)** • C1: Demonstrate professional and scientific integrity in conducting and reporting experiments. • C2: Apply health, safety, and environmental standards in handling chemicals and laboratory waste.
Indicative Contents **المحتويات الإرشادية**	**Indicative content includes the following** **Part A – Organic Chemistry Fundamentals** • Introduction to organic chemistry, including the structure of organic molecules, nomenclature, and functional groups, with emphasis on the relationship between structure and physical/chemical properties. **[15 hrs]** • **Hydrocarbons:** Study of alkanes, alkenes, and alkynes (including unsaturated hydrocarbons), as well as aromatic compounds, focusing on their structure, stability, and reactivity. **[18 hrs]** • **Functional groups (I):**

	Alcohols and phenols, including their structure, properties, and chemical reactions. **[15 hrs]** • **Functional groups (II):** Aldehydes and ketones, with emphasis on reaction mechanisms and reactivity. **[12 hrs]** • Carboxylic acids and their derivatives (esters, ethers), including preparation methods and reaction mechanisms. **[12 hrs]** • Organic halogen compounds and nitro compounds, focusing on their properties and chemical behavior. **[10 hrs]** • **Nitrogen-containing compounds:** Amines and amides, including structure, nomenclature, and reactions. **[10 hrs]** • Reaction mechanisms and structure–reactivity relationships, enabling prediction of reaction outcomes. **[10 hrs]** • Revision and problem-solving sessions covering all major topics. **[10 hrs]** • **Part B – Practical & Applied Organic Chemistry** • Fundamentals of organic laboratory work, including basic techniques such as synthesis, purification (e.g., filtration and distillation), and safe handling of chemicals. **[12 hrs]** • Identification of organic compounds and functional groups through laboratory experiments and analytical observations. **[10 hrs]** • Laboratory experiments involving simple organic reactions, data collection, analysis, and scientific report writing. **[12 hrs]** • Applications of organic chemistry in pharmaceutical, environmental, and industrial fields. **[8 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• **Interactive Learning and Lectures:** Core concepts of organic chemistry are delivered through structured lectures supported by interactive discussions to enhance students' understanding of molecular structures, functional groups, and reaction mechanisms. • **Problem-Based Learning (PBL):**

	Students are engaged in solving chemical problems that involve analyzing organic compounds, predicting reactions, and designing simple synthesis pathways to develop critical thinking and analytical skills. • **Laboratory and Practical Learning:** Practical sessions are integrated with theoretical content to allow students to perform organic experiments, including synthesis, purification, and identification of compounds, while applying safety standards. • **Use of Modern Educational Technologies:** Multimedia presentations, virtual laboratories, and online scientific resources are used to facilitate the understanding of complex concepts and improve student engagement. • **Collaborative Learning:** Group discussions and teamwork activities are encouraged to enhance communication skills and promote the exchange of scientific ideas among students. • **Self-Directed Learning:** Students are encouraged to rely on textbooks, scientific references, and online resources to expand their knowledge and develop independent learning skills. • **Continuous Assessment and Feedback:** Regular quizzes, assignments, and laboratory reports are used to monitor student progress and provide constructive feedback for improvement.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	**78**	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	**19.5**
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	**122**	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	**30.5**
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	**200**		

Module Evaluation تقييم المادة الدراسية					
		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	5	10% (10 Marks)	2, 4, 7, 10, 13	A1, A2
	Assignments	5	10% (10 Marks)	3, 5, 7, 9, 12	A2, B1
	Projects / Lab.	5	10% (10 Marks)	3, 6, 9	B2, B3
	Report	2	10% (10 Marks)	9	B3, C1
Summative assessment	Midterm Exam	1.5 hr	10% (10 Marks)	8	A1–A2
	Final Exam	3 hr	50% (50)	16	A1–A2, B1–B4, C1–C2
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	An Introduction to Organic Chemistry
Week 2	Hydrocarbons
Week 3	Unsaturated Hydrocarbons (Alkenes)
Week 4	Unsaturated Hydrocarbons (Alkynes)
Week 5	Aromatic Hydrocarbons
Week 6	Alcohols and Phenols
Week 7	Aldehydes and ketones
Week 8	Exam
Week 9	Carboxylic Acids
Week 10	Ethers
Week 11	Esters

Week 12	**Organic Halogen Compounds**
Week 13	**Nitro compounds**
Week 14	**Amines and Amides**
Week 15	**Preparatory Week Before the Final Exam**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**Material Safety Data Sheet (MSDS): Part I**
Week 2	**Material Safety Data Sheet (MSDS): Part II**
Week 3	**Determination of Melting Points**
Week 4	**Determination of boiling points**
Week 5	**Preparation of Aspirin**
Week 6	**Making Soap - Saponification**
Week 7	**Identification of Ketones and Aldehydes**
Week 8	**Preparation of Methane Gas**
Week 9	**The Smell of an Ester**
Week 10	**Exam**
Week 11	**Purification of Organic Materials and Recrystallization**
Week 12	**Solubility of Organic Compounds**
Week 13	**Thin Layer Chromatography**
Week 14	**Detection of Alcohols and Phenols**
Week 15	**Preparatory Week Before the Final Exam**
Week 16	**Final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Organic chemistry by Morrison and Boyd 7th, 2010.	**No**
Recommended Texts	Instant Notes in General Chemistry by Mohammed Abdul Baset, Printed by Dar Alayam, Amman-Jordan, 2014, 299 p.	**Yes**
Websites	American Chemical Society – Organic Chemistry Division https://pubs.acs.org Royal Society of Chemistry – Organic Chemistry Resources https://www.rsc.org Organic Chemistry Portal https://www.organic-chemistry.org PubChem https://pubchem.ncbi.nlm.nih.gov ChemSpider http://www.chemspider.com Master Organic Chemistry https://www.masterorganicchemistry.com	

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	**Legal regulation of the criminal expert**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR12002**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	UGx		**Semester of Delivery**	second	
Administering Department	Type Dept. Code		**College**	Type College Code	
Module Leader	Name		**e-mail**	E-mail	
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			**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	تزويد الطالب بالمعلومات القانونية المتعلقة بعمله الفني بيان النصوص القانونية التي تنظم عمل خبير الادلة الجنائية تبصير الطالب بالمسؤولة الجزائية والمدنية والانضباطية التي تترتب على مخالفته للقانون
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	اعداد خبير جنائي قادر على فهم وتطبيق القانون بالشكل السليم اعداد ملاكات متكلملة من الناحية القانونية والفنية
Indicative Contents المحتويات الإرشادية	المادة تتضمن التركيز على الجانب القانوني من اجل تهيئة خبير فني محترف، وقسمت المادة على عدد من الفصول عددها اثنا عشر فصلا.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	اتباع الاساليب القانونية المقارنة مع التشريعات العراقية وذلك من خلال التطبيقات العملية والمناقشات فضلا عن العصف الذهني

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	12	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	48
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.75	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	27
		Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	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	التعريف بالخبير
Week 2	خصائص الخبير الجنائية
Week 3	شروط الخبير الجنائي
Week 4	العلاقة بين الخبير والشهادة
Week 5	الطبيعة القانونية لعمل الخبير الجنائي
Week 6	المسؤولية القانونية للخبير الجنائي
Week 7	المسؤولية المدنية للخبير
Week 8	المسؤولية الانضباطية
Week 9	علاقة الخبرة بالبحث والتحقيق
Week 10	كيفية انتداب الخبرة
Week 11	الحماية القانونية للخبير
Week 12	القيمة القانونية للخبرة
Week 13	الامتحان الفصلي
Week 14	تطبيقات عملية للخبير في مجال المهارات المعرفية للخبير الجنائي
Week 15	تطبيقات عملية للخبير في مجال المهارات المعرفية للخبير الجنائي
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	ندب الخبراء في المجالين الجنائي والمدني تاليف مصطفى مجدي هرجة ٢٠١٦	
Recommended Texts	الالة والاثبات الجنائي تاليف شعبان محمود محمد ١٩٨٠	
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.

المستوى الثاني

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	**Biochemistry**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	FOR 23003		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	UG›	**Semester of Delivery**	first
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Name	**e-mail**	E-mail
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	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 aims to teach you core concepts in biochemistry including topics on structure of proteins, enzyme kinetics and metabolic pathways. 2-The module will also provide a background to fundamental aspects of chemistry.

	3-This module provides you with the core knowledge and skills to enhance performance in the area of biological chemistry towards best benefit for forensic science in: ❖ Metabolism, Analytical Techniques in Biochemistry, ❖ Bioinorganic Chemistry ❖ Energy Metabolism
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Module-specific skills 1. Understand the biological, chemical and physical principles associated with forensic investigation. 2. Discuss the analytical techniques used in forensic science and their correct choice. 3. Demonstrate knowledge of the principal scientific techniques and skills required for the recognition, processing, recording, preservation, recovery, analysis and interpretation of evidence at and from a range of crime scenes. 4. Evaluate the limitations and principles of uncertainty in analysis and interpretation of forensic evidence. 5. Construct logical arguments and effectively communicate theories in different formats, including crime scene maps and a sequence of events. 6. Interpret written instruction to create time and spatial reconstructions of complex events with attention to detail. Personal and key skills 7. Apply scientific principles to real life situations 8. Analyse and evaluate independently a range of research-informed literature and synthesise research-informed examples from the literature into written work 9. Illustrate and discuss the contested and provisional nature of knowledge and understanding 10. Analyse in detail essential facts and theory in a sub-discipline of the biosciences

	11. Apply factual information to develop, with some guidance, a logical and reasoned argument with valid conclusions. 12. Effectively communicate justifications, evidence and conclusions using both graphical and written means in a manner appropriate to the intended audience. 13. Work in a small team and deal proficiently with the issues that teamwork requires (i.e. communication, motivation, decision-making, awareness, responsibility, and management skills, including setting and working to deadlines)
Indicative Contents المحتويات الإرشادية	• **Examination [10h]** **Written assessment typically includes exams and multiple choice tests.** • **Practical[10h]** **Practical is an assessment of your skills and competencies. This could include presentations, school experience, work experience or laboratory work. [10h]** • **Coursework [12h]** **Coursework typically includes essays, written assignments, dissertations, research projects or producing a portfolio of your work.[10h]** • **Final year research projects allow students to gain considerable research experience in one of the research laboratories. Working alongside world-leading researchers enriches the students experience and assists them in pursuing a career in biochemical research.[12h]**

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 discussion, for verities of information which could be applied to make real and ideal behavior with forensic as science and as skills should be developed. 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	18
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, 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	Introduction to Biochemistry
Week 2	Enzymes 1
Week 3	Enzymes 2
Week 4	Carbohydrates 1
Week 5	Carbohydrates 2
Week 6	Carbohydrates 3
Week 7	Carbohydrates Metabolism
Week 8	Exam
Week 9	Lipids
Week 10	Lipids Metabolism

Week 11	Cholesterol
Week 12	Amino Acids
Week 13	Proteins 1
Week 14	Proteins 2
Week 15	Exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Chemistry Laboratory Safety Rules
Week 2	Lab 2: Spectrophotometry
Week 3	Lab 3: Determination of Ca Concentration in Serum
Week 4	Lab 4: Determination of P Concentration in Serum
Week 5	Lab 5: Determination of Total Iron Concentration in Serum
Week 6	Lab 6: Determination of Mg Concentration in Serum
Week 7	Lab 7: Exam
Week 8	Lab 8:Determination of Glucose Concentration in Serum
Week 9	Lab 9:Determination of Urea Concentration in Serum
Week 10	Lab 10:Determination of Creatinine Concentration in Serum
Week 11	Lab11:Determination of Uric Acid Concentration in Serum
Week 12	Lab 12:SGOT and SGPT
Week 13	Lab 13:Glucose Tolerance Test
Week 14	Exam
Week 15	Review All Previous Experiences

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	R. H. Garrett, C. M. Grisham, Biochemistry, Brooks / Cole Cengage Leatning, 2011	Yes
Recommended Texts	R. Brückner, Reaktionsmechanismen, Spektrum Verlag, 3rd Edition, 2004	No
Websites	https://biosciences.exeter.ac.uk/staff/module/?mod_code=BIO2068	

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

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية			
Module Title	**Biochemistry**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	FOR 23003		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	3rd	**Semester of Delivery**	first

Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Name	**e-mail**	E-mail
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	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 aims to teach you core concepts in biochemistry including topics on structure of proteins, enzyme kinetics and metabolic pathways. 2. The module will also provide a background to fundamental aspects of chemistry. 3. This module provides you with the core knowledge and skills to enhance performance in the area of biological chemistry towards best benefit for forensic science in: ➢ Metabolism, Analytical Techniques in Biochemistry, ➢ Bioinorganic Chemistry ➢ Energy Metabolism

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Module-specific skills 1. Understand the biological, chemical and physical principles associated with forensic investigation. 2. Discuss the analytical techniques used in forensic science and their correct choice. 3. Demonstrate knowledge of the principal scientific techniques and skills required for the recognition, processing, recording, preservation, recovery, analysis and interpretation of evidence at and from a range of crime scenes. 4. Evaluate the limitations and principles of uncertainty in analysis and interpretation of forensic evidence. 5. Construct logical arguments and effectively communicate theories in different formats, including crime scene maps and a sequence of events. 6. Interpret written instruction to create time and spatial reconstructions of complex events with attention to detail. Personal and key skills 7. Apply scientific principles to real life situations 8. Analyse and evaluate independently a range of research-informed literature and synthesise research-informed examples from the literature into written work 9. Illustrate and discuss the contested and provisional nature of knowledge and understanding 10. Analyse in detail essential facts and theory in a sub-discipline of the biosciences 11. Apply factual information to develop, with some guidance, a logical and reasoned argument with valid conclusions. 12. Effectively communicate justifications, evidence and conclusions using both graphical and written means in a manner appropriate to the intended audience. 13. Work in a small team and deal proficiently with the issues that teamwork requires (i.e. communication, motivation, decision-making,

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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 discussion, for verities of information which could be applied to make real and ideal behavior with forensic as science and as skills should be developed. 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
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Total SWL (h/sem)	150		

الحمل الدراسي الكلي للطالب خلال الفصل	

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
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المنهاج الاسبوعي النظري

	Material Covered
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Week 11	Cholesterol
Week 12	Amino Acids
Week 13	Proteins 1
Week 14	Proteins 2
Week 15	Exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Chemistry Laboratory Safety Rules
Week 2	Lab 2: Spectrophotometry
Week 3	Lab 3: Determination of Ca Concentration in Serum
Week 4	Lab 4: Determination of P Concentration in Serum
Week 5	Lab 5: Determination of Total Iron Concentration in Serum
Week 6	Lab 6: Determination of Mg Concentration in Serum
Week 7	Lab 7: Exam
Week 8	Lab 8:Determination of Glucose Concentration in Serum
Week 9	Lab 9:Determination of Urea Concentration in Serum
Week 10	Lab 10:Determination of Creatinine Concentration in Serum
Week 11	Lab11:Determination of Uric Acid Concentration in Serum
Week 12	Lab 12:SGOT and SGPT
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Week 14	Exam
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Websites	https://biosciences.exeter.ac.uk/staff/module/?mod_code=BIO2068	

Grading Scheme مخطط الدرجات				
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Genetics**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 23004**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	UGx		**Semester of Delivery**	1	
Administering Department	FORN		**College**	SC	
Module Leader			**e-mail**	E-mail	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/09/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**FORN 104 (Molecular biology)**	**Semester**	2/1
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-genetics begins with scientific research, which translates through clinical practice to touch the lives of patients and families with genetic disease on a daily basis. 2- This module aims to provide a lens through which to view the core aspects of this multidisciplinary subject, describing how and why genetics is important in the development, diagnosis and treatment of disease. 3-focus firstly on the basics of how genetic material is replicated, curated, and inherited, to enable an understanding of how genetic sequence variants lead to genetic disease, or to susceptibility to complex diseases. 4-Genetic research and disease often raises challenging ethical questions and considerations, which will also be explored in the module You will also explore the molecular mechanisms by which genes are regulated alongside the contribution and role of environment influences. 5- Overall the module link clinical genetics practice with internationally-leading research strengths at CMH, to provide a holistic view of medical genetics from the scientific, clinical and patient perspectives.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module you will be able to... 1. Describe in some detail and discuss the cellular and molecular basis of inheritance 2. Explain the differences between acquired, monogenic, polygenic and epigenetic disease 3. Explain the different mechanisms by which genes are regulated in humans 4. Discuss the contribution of genetics and environment to disease processes in humans 5. Show awareness of, and discuss the ethical issues in modern genetics

	6. Discuss with examples the importance of interaction between patients, scientists and clinician
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Our genetics influence every aspect of our growth, reproduction and health. Due to this, a deep understanding of how our genes are inherited and regulated, and how genetic sequence variants or epigenetic factors affect gene function is crucial for understanding normal human development, and the basis of genetic diseases.[16h] Knowing how molecular pathways function and are altered by gene variants is important to identify molecular biomarkers to monitor disease onset and progression, and define new therapies to treat disease. For example, research studies have detailed how breast cancer risk is greatly increased by the inheritance of specific *BRCA1* gene variants, and discovered that some patients with maturity-onset diabetes of the young (MODY) may transfer from insulin injections onto sulphonylurea tablets taken orally. [16h] Thus medical genetics as practiced today involves close scientific, clinical and patient interaction. This module describes how genomic research and clinical genetic services work in close synergy to deliver modern diagnostic and clinical genetic services, and discusses some of the ethical challenges and considerations, as well as patient perspectives, associated with this ever increasingly important discipline.[16h] Genetics provides an introduction to both classical and modern molecular genetics. We start by looking at Mendelian genetics, including consideration of how genetic maps are created and an introduction to human pedigrees. We then examine the basic mechanisms of transcription and translation and how gene expression can be regulated. The module concludes by considering the molecular tools that geneticists use and how these have been used to uncover the content of diverse genomes.[16h]

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم	
Strategies	• Aligning genome data to reference sequence using up to date alignment programmes (e.g. BWA). • Assessment of data quality through application of quality control measures. • How to determine the analytical sensitivity and specificity of genomic tests. • Use of tools to call sequence variants e.g. GATK, annotation of variant-call files using established databases. • Filtering strategies of variants, in context of clinical data, and using publicly available control data sets • Use of multiple database sources, in silico tools and literature for pathogenicity evaluation, and familiarisation with the statistical programmes to support this. • Principles of integration of laboratory and clinical information, and place of best practice guidelines for indicating the clinical significance of results.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	18
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, 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	Introduction - Introduction to genetic
Week 2	Classical Mendelian genetics
Week 3	The population genetic
Week 4	Human genome
Week 5	Functions of gene and chromosome
Week 6	Mitosis and meiosis genetic code
Week 7	Genetic variation
Week 8	Gene flow and new species
Week 9	Mutation and chromosomal abnormalities
Week 10	Medical genetic diseases
Week 11	Karyotype, Banding techniques
Week 12	Mutagens and carcinogens
Week 13	Autosomal dominant inheritance
Week 14	Autosomal recessive inheritance
Week 15	Exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Organisms supported as a model system for genetics
Week 2	Lab 2: The first law of Mendel and the deviations from Mendel's first law
Week 3	Lab 3: The second law of Mendel and the deviation from Mendel's second law
Week 4	Lab 4: The quantitative inheritance

Week 5	Lab 5: Genetics and sex
Week 6	Lab 6: Link and crossing over
Week 7	Lab 7: Cases of crossing over suppression
Week 8	Lab 8: Genetic mapping
Week 9	Lab 9: Mutation and chromosomal abnormalities
Week 10	Lab 10: Medical genetic diseases
Week 11	Lab 11: Karyotype, Banding techniques
Week 12	Lab 12: Mutagens and carcinogens
Week 13	Lab 13: Autosomal dominant inheritance
Week 14	Lab 14: Autosomal recessive inheritance
Week 15	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	Cochrane reviews: http://www.cochrane.org/cochrane-reviews Pubmed/MedLine: http://www.ncbi.nlm.nih.gov/pubmed	

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

Module Information

Module Title	**Anatomy and Physiology**		**Module Delivery**	
Module Type	**Basic**		☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	FOR 23005			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level	UGx	**Semester of Delivery**	1	
Administering Department	Forensic \FOR	**College**	science	
Module Leader		**e-mail**		
Module Leader's Acad. Title		**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. The aim of the module is to introduce and explore the fundamental concepts of human physiology and anatome from cellular functions through to systems that are responsible for homeostasis. 2. The module aims to begin with the broader principles of how cells communicate and how cells function. 3. To explore key anatome with physiological systems: ➢ investigating the central and peripheral nervous systems, ➢ how differing muscles are stimulated to contract, ➢ the digestive system and key associated nutritional principles, the cardiorespiratory system, ➢ the renal system and its regulatory role and the immune system and how it aims to protect the body against infection and disease. 4. This module also aims to introduce the principles of group learning, critical thinking, problem solving and communication of scientific information.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module you will be able to... • 1. Demonstrate an integrated basic knowledge of the biomedical principles underpinning human health with forensic science . • 2. Demonstrate a basic awareness of the scientific principles underpinning the prevention, diagnosis and management of some important diseases • 3. With guidance, apply skills of critical thinking, problem-formulation and problem-solving.
Indicative Contents المحتويات الإرشادية	1-Cardiovascular physiology [10h] Structure and function of the heart and blood vessels from single cell to whole system. Cardiac electrical activity and its measurement. Perfusion and its control. Blood pressure regulation. Embeds a variety of anatomical and pathophysiological examples with reference to both biomedical and forensic applications throughout e.g. coronary heart disease. 2-Respiratory anatomy and physiology [10h] Structure and function of the respiratory tract from single cell to whole system. Lung mechanics and ventilation. Oxygen and carbon dioxide transport. Central

	and peripheral control of respiration. Embeds a variety of pathophysiological examples with reference to both biomedical and forensic applications throughout e,g, asthma 3 -Reproductive anatomy and physiology[15h] Structure and functions of the reproductive systems from single cell to whole system. Normal body control of the female reproductive system and hormonal cycles. Embeds a variety of anatomical and psychophysiology examples with reference to both biomedical and forensic applications throughout e.g. infertility. 4- Neuro and sensory anatomical and physiology [15h] Basic structures and divisions of the peripheral and central nervous system from single cell to whole system. Structure and function of nerves and the cells in the nervous system. How nerves communicate. Higher CNS functions and the ANS. Structure and function of key sensory organs. Embeds a variety of anatomical and pathophysiological examples with reference to both biomedical and forensic applications throughout e.g. dementia 5 -Skeletomuscular system [14] Skeletal muscle structure and ultrastructure. Muscle and fibre types. Functions of tendons, joints, bones, muscle ligaments and fascia. The neuromuscular junction. Excitation - contraction coupling. The sliding filament theory. Muscle spindles. Golgi tendon organs. Reflex arcs. Embeds a variety of anatomical and pathophysiological examples with reference to both biomedical and forensic applications throughout e.g. muscular dystrophy.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The module will consist of lectures with theoretical analysis and real-world examples and applications to improve students' learning and analytical skills. In-class group discussions of research papers will facilitate deeper understanding and encourage critical thinking. The assessment includes two summative elements that are a group recorded quiz and an individual written essay. The pass mark for the written assignment and module is 50%. A qualifying mark of 40% on each assessed component of the

	module must be achieved to pass the module. Each of the component marks is then combined, using the appropriate weighting, to give an overall mark for the module. If the overall mark is less than 50% when the weighting has been applied to the components, this constitutes a failure of the module.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	18
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, 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	Intruduction for Anatomy and Physiology Organizing Principles such as Homeostasis & Feedback Loops

Week 2	Cell, tissue , and Membrane
Week 3	Skelton, and muscular
Week 4	Nervous and endocrine system
Week 5	Cell Physiology & Membrane Transport
Week 6	Tissue Physiology, Neurophysiology and Sensory Physiology
Week 7	Endocrinology, Muscle Physiology
Week 8	Cardiovascular and Respiratory Physiology
Week 9	Immunology
Week 10	Lymphatic and Respiratory System
Week 11	Osmoregulatory Physiology
Week 12	Gastrointestinal Physiology
Week 13	Reproductive Physiology
Week 14	Digestive and Urinary System
Week 15	exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Erythrocyte Physiology
Week 2	Lab 2: Pulse and Pressure
Week 3	Lab 3: EEG and States of Consciousness
Week 4	Lab 4: Brain Imaging
Week 5	Lab 5: Electromyography & Dynamometry
Week 6	Lab 6: Electrocardiography
Week 7	Lab 7: exam
Week 8	Lab 8: Ventilation & Spirometry
Week 9	Lab 9 : Urinalysis
Week10	Lab10: View film “Fed Up”, food diary assigned
Week11	Lab11: Physiology of Adiposity; SOS of lab instructor
Week12	Lab12: Lower extremely bones
Week13	Lab13: Musules tissue and skin
Week14	Lab14: The brine

Week15	review before final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Human from Cells to Systems. Sherwood, L. (2016, 9th edition) Cengage Learning.	no
Recommended Texts	https://training.seer.cancer.gov/linksre/	yes
Websites	https://www.ucc.ie/en/physiology/courses/physiologyasamodule/	

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

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MODULE DESCRIPTION FORM

Module Information		
Module Title	**Secretions and vital fluids**	**Module Delivery**
Module Type	**Basic**	☒ **Theory** ☐ **Lecture**
Module Code	**FOR 23006**	

ECTS Credits	**6**			☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
SWL (hr/sem)	**150**				
Module Level		3rd	**Semester of Delivery**		1
Administering Department		Forensic \FOR	**College**		science
Module Leader			**e-mail**		
Module Leader's Acad. Title			**Module Leader's Qualification**		
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	The aim of this Module is : 1-to provide the student with an understanding of examination strategies for the range of body fluids encountered in forensic biology casework together with the science underpinning the interpretation of bloodstain patterns. 2-An awareness of the contribution of selected areas of the biological sciences to specialised forensic science studies is also given. 3-to provide a basic grounding in Forensic Criminology. 4- to promote analytical and evaluative skills, as well as encourage the application of material to appropriate case studies. 5- students will, through seminar work, applied approach and problem solving, develop a knowledge and understanding of the subject area, as well as an appreciation of the ethical and complex issues that surround forensic criminology.

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module the student should be able to: 1. Understand the rationale for undertaking different body fluid examinations as an aid to crime investigation. 2. Relate the biological characteristics of different body fluids to the methods used for location and identification in the forensic laboratory. 3. Identify and interpret bloodstain patterns and relate these to a theoretical treatment of blood dynamics. 4. Have a basic understanding of how the results of biological examinations are used in the context of case interpretation. 5. Analyse and critically evaluate the contribution of selected areas of biology to specialised aspects of forensic science. 6. Explain the analytical, laboratory and legal requirements of producing DNA STR profiles. 7. Perform interpretation of DNA STR profiling results, including calculation of likelihood ratios. 8. Critically evaluate DNA STR profiling results citing significant research in the field. 9. Show an understanding of the scientific basis and utilisation of techniques of bone anthropometry and pathology in the study of human tissue. 10. Demonstrate the ability to critically evaluate body fluid evidence and blood stain patterns.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1 Body Fluids Methods for detection and confirmation of the presence of blood, saliva, semen, faeces and urine. Interpretation of the presence and distribution of such staining and an understanding of body fluid persistence.[18h] 2 Blood Dynamics and Blood Stain Patterns Rheology of blood and blood behaviour. Impact, cast- off, arterial and transfer patterns, interpretation and evidential value.[18h] 3 Selected Areas of Biology Relevant to Forensic Science For example: aspects of entomology, trichology and other specialist areas of forensic biology may be considered.[15h] 4:Forensic Psychology: the social context of crime; what is forensic and criminal psychology; serial killing; profile analysis: investigative psychology and statistical profiling; false confessions; false allegations; eye witness testimony; lies, detection and credibility; psychology in prison; assessing risk and dangerousness.[15h] 5:Criminal Investigation: Introduction to forensic science; the crime scene; trace and contact evidence: recoverable materials; trace and contact evidence: fingerprints; analysing body fluids; DNA profiling; fires; examination of human remains; questioned documents; forensic science in court and presenting evidence to a jury.[20h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	This module covers a wide variety of theoretical, conceptual and practical areas, which require a range of knowledge and skills at a more advanced level to be displayed and

	exercised. Delivery of its syllabus content therefore involves a diversity of teaching and assessment methods suitable to the learning outcomes of the module; these include formal lectures, structured tutorials (work closely integrated with the lecture material), practical exercises, and completion and submission of written coursework making use of appropriate forms of IT and VLE, and independent study.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	18
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, 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	Introduction in blood and body fluid
Week 2	Bile composed and liver enzymes

Week 3	Brest milk composition
Week 4	Cerebral spinal fluid
Week 5	Digestive system secretion, Saliva, mucus
Week 6	Amniotic fluid characteristic
Week 7	Mucus secretion and nasal drainage
Week 8	Peritoneal fluid
Week 9	Skin, sweating gland
Week 10	Eyes, tears secretion
Week 11	Seminal fluid
Week 12	Urine analysis
Week 13	Vomiting
Week 14	Vaginal secretion
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Lab Safety
Week 2	Lab 2: Blood investigation and body fluid analysis
Week 3	Lab 3: Bile composed and liver enzymes investigation
Week 4	Lab 4: Breast secretion
Week 5	Lab 5: Determination the CSF component
Week 6	Lab 6: Investigate the secretion of digestive system, Saliva, mucus
Week 7	Lab 7: Exam
Week 8	Lab 8: Amniotic fluid
Week 9	Lab 9 : Mucus secretion and nasal drainage
Week 10	Lab10:Peritoneal fluid
Week 11	Lab11:Skin, sweating gland
Week 12	Lab12:Eyes, tears secretion
Week 13	Lab13:Seminal fluid
Week 14	Exam
Week 15	**Review week**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Essential Haemotology. Hoffbrand A.V., Pettit J.E. & Moss P.A.H., Blackwell, ISBN: 0632051541	NO
Recommended Texts	Flesh and Bone: An Introduction to Forensic Anthropology. Nafte M., Carolina Academic Press, ISBN:0890896380	yes
Websites	https://modules.abertay.ac.uk/module.cfm?modcode=FOR301&term=S1	

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
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	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	**Statistics and Forensic Applications**	**Module Delivery**
Module Type	**Basic**	☒ **Theory**

Module Code	FOR 23007		☐ **Lecture** ☐ **Tutorial** ☐ **Seminar**	
ECTS Credits	2			
SWL (hr/sem)	50			
Module Level	**3rd**		**Semester of Delivery**	1
Administering Department	Forensic Science		**College**	College of Sciences
Module Leader	Dr. Hayder Yahya Mohammed		**e-mail**	dr.haider.yahya@kus.edu.iq
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	
Module Tutor			**e-mail**	
Peer Reviewer Name			**e-mail**	
Scientific Committee Approval Date			**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	This course introduces students to the fundamental concepts and applications of statistics in the field of criminology. It focuses on analyzing criminal data, identifying patterns, and using statistical tools to support investigations, policy-making, and justice system decisions. Students will learn how to interpret quantitative data and apply statistical reasoning to real-world criminal cases.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**On consummation of this module, students are expected to be able to:** **1.** Distinguish between different types of statistical data used in forensic contexts. **2.** Explain the concept of frequency distribution and its importance in analyzing forensic data. **3.** Describe the role of measures of central tendency (mean, median, mode) in summarizing criminal phenomena. **4.** Interpret measures of dispersion (range, variance, standard deviation) and their

	relevance in comparing datasets. **5.** Define correlation and evaluate its significance in examining relationships between forensic variables. **6.** Construct frequency distribution tables from real forensic datasets. **7.** Calculate measures of central tendency and draw meaningful conclusions from forensic data. **8.** Apply measures of dispersion to assess the variability of criminal statistics. **9.** Use correlation techniques to determine the strength and direction of relationships between variables (e.g., age and crime type). **10.** Employ statistical software or manual tools to conduct forensic statistical analyses. **11.** Compare the outcomes of central tendency and dispersion measures in interpreting forensic phenomena. **12.** Analyze relationships between forensic variables using correlation and assess their accuracy. **13.** Derive statistical inferences that support decision-making in criminal justice and forensic investigations. **14.** Demonstrate accuracy and objectivity in handling forensic data. **15.** Appreciate the role of statistics as a scientific tool in advancing justice and forensic practice.
Indicative Contents المحتويات الإرشادية	1. **1**Forensic Statistics , Definition, scope, and importance in criminal justice 2. Types of data in forensic contexts (qualitative vs. quantitative) 3. Frequency Distribution , Raw data organization and tabulation 4. Construction of frequency tables 5. Measures of Central Tendency , Mean, median, and mode: definitions and computation 6. Measures of Dispersion , Range, variance, and standard deviation 7. Coefficient of variation and its forensic relevance 8. Correlation Analysis , Concept of correlation: positive, negative, and zero correlation. 9. Pearson's correlation coefficient.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The learning and teaching strategy is designed to:** **1.** Provide students with a broad introduction to some areas in the field of biochemistry, and engage students' in-group project work to develop skills in dealing with literature, writing, and verbal communication. **2.** Learning and teaching methods include lectures, small group workshops, informal sessions, and a demonstration day. **3.** Additionally, the learning and teaching strategy is designed to develop students' confidence and competence in working with others, leadership, employability, professionalism, and communication skills. In the tutorials, students will perform interactive tasks in their groups to develop their research and reference skills, and will

	be able to share and consider each other's perspectives on appropriate authoritative source material; develop their critical analysis skills. **4.** Furthermore, they are required to choose a biochemistry area to focus on for their poster presentation. This should be of interest to the whole group. Students will be encouraged to share and discuss their opinions and the research they have prepared, in addition to listening and discussing the opinions of others. They will work together to prepare a professionally produced group poster presentation, highlighting referral and writing skills developed in the workshops. **5.** Finally, they will produce an individual reflection that takes into account how they and the group work and offers areas for improvement.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	12
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	2	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	0.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1-2	**Introduction to Forensic Statistics** • Definition, scope, and importance in criminal justice • Types of data in forensic contexts (qualitative vs. quantitative)
Week 3-5	**Frequency Distribution** • Raw data organization and tabulation • Construction of frequency tables • Graphical representation: histograms, bar charts, pie charts • Interpretation of frequency distributions in forensic datasets
Week 6-8	**Measures of Central Tendency** • Mean, median, and mode: definitions and computation • Applications in summarizing criminal phenomena • Comparative analysis of central tendency measures • Case studies in forensic data
Week 9-12	**Measures of Dispersion** • Range, variance, and standard deviation • Coefficient of variation and its forensic relevance • Role of dispersion in comparing criminal statistics • Practical exercises with forensic datasets
Week 13-15	**Correlation Analysis** • Concept of correlation: positive, negative, and zero correlation • Pearson's correlation coefficient and Spearman's rank correlation • Interpretation of correlation results in forensic investigations • Case applications: age vs. crime type, socioeconomic factors vs. crime rates

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Banks, D. L., Kafadar, K., Kaye, D. H., & Tackett, M. (2020). *Handbook of forensic statistics*. Chapman & Hall/CRC. 2. Aitken, C., & Taroni, F. (2004). *Statistics and the evaluation of evidence for forensic scientists* (2nd ed.). Wiley. 3. Balding, D. J., Steele, C. D., & Gill, P. (2015). *DNA evidence and forensic statistics: A guide for lawyers, judges, and other stakeholders*. Wiley. 4. Buckleton, J., Curran, J., & Gill, P. (2016). *Forensic DNA evidence interpretation* (2nd ed.). CRC Press. 5. Champod, C., Evett, I. W., & Jackson, G. (2004). *Establishing the evidential value of fingerprints and other forensic identification marks*. CRC Press.	Yes

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	**Molecular Biology**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 24009**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	3rd		**Semester of Delivery**	2	
Administering Department	FORN	**College**	SC		
Module Leader	Mohammad Jawad Khazal	**e-mail**	E-mail		
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	01/06/2023	**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	1. This module aims to provide a strong foundation in molecular biology and biochemistry that will be built upon in subsequent modules. 2. Core biological molecules will be examined with a focus on their structure and function. 3. Teaching will be delivered using a combination of lectures, workshops and practicals. 4. Problem solving and quantitative skills will be developed through complementary workshops using case studies, applications and examples based on lecture content. 5. Experience of biochemical techniques such as chromatography and enzyme kinetics will be gained through practicals. 6. The module will be assessed by an open exam at the end of the module.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Students who successfully complete this module will be able to: 1. Describe the main chemical components of cells, their structural properties, how these relate to their functions, and how they are altered during cellular processes 2. Explain theoretical frameworks (such a Michaelis Menten kinetics, the laws of thermodynamics and the chemiosmotic theory) that allow us to understand function of biological molecules and cells 3. Integrate knowledge about heterotrophic metabolism of carbohydrates & lipids and phototrophic metabolism and how they relate to energy metabolism via ATP 4. Relate knowledge of biological molecules to health and disease and to their application in biotechnology 5. Analyse and evaluate enzyme kinetics data
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. The information on this page is indicative of the module that is currently on offer. The University is constantly exploring ways to enhance and improve its degree programmes and therefore reserves the right to make variations to the content and method of delivery of modules, and to discontinue modules, [20h] if such action is reasonably considered to be necessary by the University. Where appropriate, the University will notify and consult with affected students in advance about any changes that are required in line with the University's policy on the Approval of Modifications to Existing Taught Programmers of Study[40h]. Developed and demonstrated time management and organizational skills Developed skills at interpreting and retrieving information[20h] (knowledge

	management) and be able to demonstrate this in examinations Developed, and be able to apply, problem-solving skills Developed, and be able to demonstrate in examinations, written communication skills[15].

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Molecular biology skills can help you work in many scientific fields, such as food science, biotechnology, forensics and more. In this article, we discuss the definition of molecular biology skills, the types of skills to include on your resume and strategies for developing molecular biology skills.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	24.25
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	**Introduction and brief historical review**
Week 2	**Experiments to prove DNA is the genetic material**
Week 3	**The second evidence using virus (phage) model**
Week 4	**DNA and RNA as macromolecules: base structure and rules**
Week 5	**Eukaryotic and prokaryotic DNA**
Week 6	**Chemical and physical properties of DNA: the hyperchromic effect**
Week 7	**Haploid chromosome**
Week 8	**Chromatin organization and chromosome structure**
Week 9	**DNA replication**
Week 10	**DNA repair pathways**
Week 11	**RNA structure and function**
Week 12	**RNA transcription and post transcription events**
Week 13	**Translation: protein synthesis**
Week 14	**Epigenetics**
Week 15	**Exam**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Preparation of buffers
Week 2	Lab 2: Laboratory safety rules
Week 3	Lab 3: DNA extraction
Week 4	Lab 4: Instruments and equipment in molecular lab
Week 5	Lab 5: Polymerase chain reaction
Week 6	Lab 6: Gel electrophoresis
Week 7	Lab 7: Exam

Week 8	Lab8:Chromosomal DNA extraction from bacteria
Week 9	Lab9:Chromosomal DNA extraction from plant
Week 10	Lab10:Plasmids isolation and extraction
Week 11	Lab11:Protein
Week 12	Lab12:Mutations
Week 13	Lab13:Real time PCR
Week 14	Lab14:Seminars
Week15	Review before final exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Alberts B, et al. Essential Cell Biology, 5th Edition, Garland Science Pub., 2019 ISBN: 978-0393680393	Yes
Recommended Texts	Human Physiology: From Cells to Systems Lauralee Sherwood 7th ed. Brookes/Cole ISBN 9780495826293	No
Websites	https://www.modules.napier.ac.uk/Module.aspx?ID=BMS09112	

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

Module Information

Module Title	**Analytical Chemistry**	**Module Delivery**	
Module Type	**Basic**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 24010**		
ECTS Credits	**7**		
SWL (hr/sem)	**175**		
Module Level	UG›	**Semester of Delivery**	second
Administering Department	Forensic \FOR	**College**	science
Module Leader	Asst.Prof. Dr. Marwah Al-banaa	**e-mail**	marwa.abd.alrada@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	Asst.Prof. Dr. Marwah Al-banaa	**e-mail**	marwa.abd.alrada@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	The module provides an introductory overview of the: 1- main techniques used in analytical chemistry.

	2- provides understanding of the fundamental principles of chemical analysis as well as the main aspects of their application. 3- combination of lectures and practical sessions allows the students to get familiarised with the common practices in an analytical chemistry laboratory. 4- Make able to calibration of instrumentation, validation, analysis of quality control samples, etc.) 5- introduce them to health & safety regulations and risk assessment.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	7. Understand and describe the fundamental principles and operation of analytical techniques, including spectroscopy, chromatography and electrochemistry. 8. Undertake calculations associated to the calibration of instruments and analytical quantification, and evaluate experimental error. 9. Operate basic analytical techniques, develop problem solving skills and be familiar with good laboratory practice. 10. Appreciate the implications of the provisions for COSHH (Control of Substances Hazardous to Health) and Health and Safety regulations in the laboratory environment.
Indicative Contents المحتويات الإرشادية	-Fundamentals of analytical chemistry– Good laboratory practice, health and safety, COSHH; Fundamentals of analytical measurement – accuracy, precision (repeatability and reproducibility), traceability, robustness, control charts.[15h] - Sample preparation – Sampling, decomposition & dissolution.[10h] - Classical methods – Gravimetry & titrimetry analysis[10h] - Spectroscopy – Fundamentals, Beer's Law, instrumentation, and calculations; Atomic emission spectroscopy; Quantitative molecular spectroscopy – UV-vis absorption and fluorescence.[12h] - Introduction to separation science – Classification, terminology, fundamentals of solute interaction, equations/calculations in chromatography; Efficiency and resolution - Van Deemter equation; Basic chromatographic methods - planar (Thin Layes Chromatography, paper) and column chromatography.[15h] - Electrochemistry – Basic concepts, galvanic cells, standard potentials, Nernst equation, applications, problem solving, calculations and data presentation; Potentiometry - basic ion selective electrodes, pH electrode, applications. [14h]

	- Practical work on basic analytical techniques and laboratory good practice – Experiments on titration, electrochemistry, atomic emission spectroscopy and chromatography. [10h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The assessment strategy is designed to provide students with the opportunity to demonstrate: - Understanding of fundamental principles of basic analytical techniques. - Know-how of the chemical analysis practice. - Competence to perform fundamental calculations. - Capacity for independent/critical thinking and problem-solving. - summative assessment for this module -Introduce the students to the fundamentals of the analytical techniques during the lectures. These would include the physical-chemical principles as well as design and operation of instrumental analytical techniques. - Provide hands-on experience in an analytical laboratory; including practice in sample preparation, operation and calibration of the instruments, validation, and analysis of unknown samples. - Encourage the development of their self-evaluation skills by describing the main sources of error during the practical experiments, nurturing problem-solving skills and critical thinking.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	86	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	21.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	89	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	22.25
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	Introduction to Analytical Chemistry
Week 2	Units, Concentration and Stoichiometry
Week 3	Concentration types
Week 4	Statistical treatment of analytical data
Week 5	standard solution 1
Week 6	standard solution 2
Week 7	Titration 1
Week 8	Titration 2
Week 9	Exam
Week 10	Acids and bases
Week 11	Spectrochemical analysis 1
Week 12	Spectrochemical analysis 2
Week 13	Separation methods 1
Week 14	Separation methods 2
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1:General safety rules for laboratory
Week 2	Lab 2: General chemistry equipment
Week 3	Lab 3: Standard solution
Week 4	Lab 4: Preparation of standard solution from liquid solutions
Week 5	Lab 5: Buffer solution
Week 6	Lab 6: Titration strong acid with strong base
Week 7	Lab 7: Determination of acetic content in a vinegar sample
Week 8	Lab 8: Volumetric analysis (Mohr method)
Week 9	Lab 9 : pH-metric titration
Week 10	Conductmetric titration strong acid with strong base
Week 11	Separation of I group cations (Ag+, Pb+2, and Hg+2)
Week 12	Separation of II group cations
Week 13	Techniques of paper chromatography
Week 14	Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	https://guides.loc.gov/chemistry-resources/print-materials/analyticals	NO
Recommended Texts	https://guides.library.utoronto.ca/chm217/reference-resources	yes
Websites	https://www.coursera.inorg/browse/chem-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
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	**Laboratory equipment &Techniques**	**Module Delivery**	
Module Type	**Basic**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 24011**		
ECTS Credits	**6**		
SWL (hr/sem)	**150**		

Module Level	UGx	**Semester of Delivery**	2
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Asmaa Mansour Al-Hakeem	**e-mail**	asmaa.mansoor@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	Asmaa Mansour	**e-mail**	asmaa.mansoor@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	This module aims to introduce students to Microscope and types , the spectroscopic and chromatographic techniques , Electrophoresis , Balance , Temperature control instrument , PCR & RT-PCR and provide them with hands-on experience of laboratory instrumental analysis, further developing the practical skills gained in the Laboratory Chemical & Biological module. This module also aims to provide training to the students on the research methodology and skills, *e.g*. literature survey, experimental design, data acquisition, result analysis and report writing-up, which will pave the way for their final year research project.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Knowledge and Understanding: 1 Formulate experimental methods for all instrument and design appropriate experimental set-ups. 2 Demonstrate the sample preparation and operational skills using the advanced all this instrument. 3 Acquire and critically assess experimental results with comparison to standards or databases. Transferable/Key Skills and other attributes: • Safe-working laboratory practices • Observation, recording and presenting complex scientific data • Numeracy, literacy, IT and Information management • Time management • Problem solving skills • Literature search, data processing and academic writing skills • Team working
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A - primary information of laboratory instrument & techniques</u> On completion of this module, students are expected to be able to:

	1 Demonstrate knowledge of introduction of instrument & types 2 Demonstrate knowledge of the principle & application & types of instrument. 3 Demonstrate an understanding of Microscope. [15 hrs] 4 Demonstrate understanding of the Electron Microscope. [15 hrs] Balance , Temperature control instrument (Incubator , Water bath , Autoclave , Hot air oven , Hotplate Magenetic Stirrer) and types. [16 h] PCR & RT- PCR , Electrophoresis , chromatography , pHmeter ,Ultrasonic , Centrifuge . [15 hrs] <u>Part B - essential and details</u> Fundamentals To publicise 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	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	18
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	Introduction of instrument
Week 2	Microscope , light microscope and Electron Microscope
Week 3	Balance , Temperature control instrument (Incubator , Water bath) and types.

Week 4	Temperature control instrument (Autoclave , Hot air oven , Hotplate Magenetic Stirrer) and types.
Week 5	Polymerase chain reaction (PCR)
Week 6	Mid-term Exam Exam
Week 7	Real-Time polymerase chain reaction
Week 8	Electrophoresis
Week 9	Spectrophotometry
Week 10	Laboratory Centrifuge (principle , types& Application).
Week 11	Chromatography (principle , types& Application).
Week 12	Ultrasonic (principle , types& Application).
Week 13	PHmeter (principle , types& Application).
Week 14	HPLC
Week 15	EXAM
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1 : Introduction of instrument
Week 2	Lab 2 : Microscope , light microscope and Electron Microscope (particle application on use instrument).
Week 3	Lab 3 : Balance , Temperature control instrument (Incubator , Water bath) and types. (particle application on use instrument).
Week 4	Lab 4: Temperature control instrument (Autoclave , Hot air oven , Hotplate Magenetic Stirrer) and types. (particle application on use instrument).
Week 5	Lab 5: Polymerase chain reaction (PCR) (particle application on use instrument).
Week 6	(particle application on use instrument). Mid-term Exam Exam
Week 7	Lab 6: Real-Time polymerase chain reaction(particle application on use instrument).
Week 8	Lab 7 : Electrophoresis(particle application on use instrument).
Week 9	Lab 8 : Spectrophotometey(particle application on use instrument).
Week 10	Lab 9 : Laboratory Centrifuge (principle , types& Application). (particle application on use instrument).

Week 11	Lab 10 : Chromatography (principle , types& Application). (particle application on use instrument).
Week 12	Lab 11 : Ultrasonic (principle , types& Application). (particle application on use instrument).
Week 13	Lab 12 : PHmeter (principle , types& Application). (particle application on use instrument).
Week 14	Lab 113 : HPLC (principle , types& Application). (particle application on use instrument).
Week 15	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	Lobban C.S. (1992) *Successful Lab Reports: A Manual for Science Students,* Cambridge University Press. Higson, S.P.J. (2003) *Analytical Chemistry*, Oxford University Press. Skoog, D.A., Holler, F.J. and Nieman, T.A. (1998) *Principles of instrumental analysis*, Orlando: Harcourt Brace College Publishers. Mathew Folaranmi Olaniyan (2017) **LECTURE NOTES ON LABORATORY INSTRUMENTATION AND TECHNIQUES.** Edition: 1ST Editor: ACHIEVERS UNIVERSITY, OWO-NIGERIA/DR A.A. OLADELE(READER) ISBN: ACHIEVERS UNIVERSITY, OWO-NIGERIA	No
Websites	Mathew OLANIYAN | Professor | PhD; Cert. in Immunology: PGDE; FMLSCN; FWAPCMLS in Immunology | Medical Laboratory Science/ School of Postgraduate Studies | Research profile (researchgate.net)	

Grading Scheme

مخطط الدرجات

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

(50 - 100)	**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	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
(0 – 49)	**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	Investigation and criminal research			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 24012**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level	UGx		**Semester of Delivery**	2	
Administering Department	FORN		**College**	SC	
Module Leader			**e-mail**	E-mail	
Module Leader's Acad. Title			**Module Leader's Qualification**		
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	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**	2/1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	إذا كان الهدف الأسمى للتحقيق الجنائي هي البحث والتحري عن الحقيقة ، فإن المحقق وحده لا يمكنه القيام بذلك بمفرده خصوصاً إذا كانت الجريمة المرتكبة يشوبها اللبس والغموض وعدم الإلمام بكل جوانبها لاسيما إذا تعلق التحقيق بوقائع لها طابع علمي أو فني يصعب على المحقق فهمها وتحليلها ، ليس بسبب نقص الذكاء او الخبرة او الإدراك بل أن تكوين المحقق في حد ذاته وخبرته القانونية لا تتيحان له إدراك أمور لها أهلها من التقنيين والمتخصصين . لذا سوف نتناول في هذا المطلب التعريف بالخبرة ونبين أهميتها في الإثبات الجنائي.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	تتميز مهمة الخبير بعدد من الخصائص وهي مهمة فنية ومحددة وذات طابع قضائي وإجراء اختياري للمحكمة , وعلى هذا الأساس يجب على الخبير ان يمتلك المهات الآتيه: 1- مهارة فنية أن أهم ما تتميز به الخبرة أنها ذات طابع فني ولجوء القاضي أو المحقق إلى الاستعانة بالخبير أنما لكون المسألة المطروحة في الدعوى الجزائية ذات طابع فني لا يستطيع كل منهما أن يقدرها حسب مؤهلاته وخبراته ، وعليه فإن مهمة الخبير تفترض استعانة الخبير بمعلوماته الفنية وتبعا لذلك لا يعد خبيرا من يكلفه القاضي بمعاينة يعتمد فيها على حواسه فقط ، ولكن يعد خبيرا من كلفته المحكمة بأن يجري معاينة ويأتي بنتائج هذه الملاحظة إذا كانت تقتضي تطبيق أساليب علمية أو فنية. 2- مهاره القدره على تحديد حجم السلوك عند انتداب الخبير بتحديد المهمة التي يقوم بها والمسائل التي يلتزم الإجابة او الكشف او التحليل عنها بما يتناسب واختصاصه الفني او المهني، فالقاضي يعين للخبير في صورة واضحة ومحددة موضوع مهمته وفي بعض الحالات يضع له أسئلة معينة يتعين على الخبير أن يجيب عنها ، ولا يجوز أن تكون مهمة الخبير عامة تشمل إبداء رأي في الدعوى ، إذ يعد ذلك تخليا من القاضي عن رسالته . 3- مهاره قضائية المقصود بذلك أن مسألة اللجوء إلى الخبرة أمر تقرره المحكمة وحدها وهو أما بناء على طلب من الخصوم في الدعوى الجزائية أو استنادا إلى قرار تتخذه من تلقاء نفسها حسب تقديرها للمسألة المعروضة أمامها وحاجتها إلى رأي فني. وأن مسألة اختيار الخبير تعود إلى المحكمة والتي تعتد في ذلك بمعارفه الفنية، ولها أن تستشير الخصوم في هذا الشأن ولكنها غير ملزمة بطلبهم، فالخبير لا يمارس مهمته إلا بانتداب قضائي، إلا بانتداب قضائي، ويؤدي مهمته تحت إشراف القاضي، وخلاصة عمل الخبير التي يتضمنها تقريره تخضع في النهاية لتقدير القاضي . 4- مهاره إختيارية الأصل في الخبرة أنها إجراء اختياري للمحكمة وهذا يعني أن المحكمة غير ملزمة بإجابة طلبات الخصوم بندب خبير في الدعوى ما دامت ترى في أدلة الدعوى المطروحة أمامها ما يمكنها من حسم الدعوى دون الاستعانة برأي الخبير . وتطبيقاً لذلك قضت محكمة النقض المصرية بأنه " لا إخلال بحق الدفاع إذا لم تجب المحكمة طلب تعيين خبير لفحص العقد العقول بتزويره متى كان فيما ذكره حكمها عن طريق التزوير وثبوته على المتهم ما يفيد أن المحكمة اقتنعت بما شاهدته وما تبينته من وقائع الدعوى وأقوال الشهود بحصول التزوير وبأنها لم تكن في حاجة إلى الاستعانة برأي فني في ذلك " ، وقضت محكمة تمييز العراق بأن " المحكمة غير ملزمة باستدعاء خبير آخر إذا كانت الواقعة المبحوث عنها واضحة وضوحاً كافياً ، وفي هذه الحالة يتعين على المحكمة تسبيب رفضها " .
Indicative Contents المحتويات الإرشادية	إذا كان على المحقق أن يتفرغ لأعمال البحث والتحقيق كالإستجواب ومناقشة الشهود والكشف والتفتيش وجمع المعلومات الأخرى فان العناية بالآثار وفحصها ينبغي أن تترك لخبير متخصص في هذا النوع من العمل ، ومن ثم فأن الخبير هو ذلك الشخص الذي اكتسب خبرة عملية وفنية نتيجة لدراسات علمية كالطبيب العدلي او المحلل الكيميائي او نتيجة لممارسة مهنة معينة فترة من الزمن كأرباب الحرف والصناعات كالنجارين والحدادين وغيرهم . ومن الجائز أن يدلي الخبير برأيه شفوياً أمام المحقق الذي ينبغي عليه أن يدونه في محضر التحقيق ثم يوقع عليه كليهما ، عليه فأن عمل الطبيب العدلي او خبير المختبر الجنائي مع المحقق أمر لابد منه لإزاحة الستار عما يكتنف الجريمة من غموض وملابسات وكلما زاد هذا التعاون بين الاثنين كلما سهل اكتشاف الجريمة ومعرفة مرتكبها ، علماً أن المحقق او القاضي غير ملزم بالأخذ برأي الخبير طبقاً لمبدأ الاقتناع الذاتي للقاضي وتكوين رأيه واعتقاده بالإدانة او البراءة في الأمور الجنائية حسب اعتقاده فهو خبير الخبراء وله كلمة الفصل في الأمور الجنائية.

	أن تخويل القاضي للخبير في إبداء مشورته بخصوص الواقعة أو بشأن مسؤولية المتهم هو نوع من التوكيل ، وقد تعرض هذا الرأي إلى انتقادات عديدة من بينها أن رأي الخبير لا يلزم أحدا ، كما أن الخبير لا يعد مسؤولاً عن أخطائه غير الجسيمة بخلاف العلاقة التي تربط الوكيل بالموكل ، حيث أن الأول يمثل الثاني بكيفية تلزمه تجاه الغير ويكون هذا ملزماً به وفقا لعقد التوكيل ذلك لأن الغرض من الوكالة هو القيام بأعمال قانونية لحساب الموكل كذلك ليس للوكيل أن يتمتع بسلطات أكثر من موكله ، بينما الخبرة تختلف تماما عن هذا الأمر فهي لا تلزم القاضي في الأخذ بها من جهة وليس باستطاعة القاضي القيام بعمل الخبير وليس لها أن يتمتع بسلطات القاضي .

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	الخبرة تمثل معلومات فنية يحصل عليها القائم بالتحقيق من أرباب الفن والحرف والمعرفة وهذه معلومات تساعده في حل ما يشكل عليه من الامور التي لا يمكن حلها بمعلوماته الخاصة والوصول إلى نتائج حاسمة بشأنها لعدم إلمامه بالأمور والمسائل التي ربما يتوقف الوصول للدليل عليها والذي يكون هو دليل إثبات في ارتكاب الجريمة ونسبتها لفاعلها، فعلى سبيل المثال لا يمكن للباحث الجنائي او القاضي التوصل إلى كفاءة المادة السامة التي يستعملها الجاني في إحداث الوفاة ما لم يستعين بأحد اصحاب الاختصاص من الكيمياويين لمعرفة ذلك. سيما أن هناك العديد من القضايا التي تلعب فيها الخبرة الدور الفاعل والرئيس في الفصل في موضوعها وكشف ملابسات الجريمة, وأحياناً تكون الخبرة هي البيّنة الوحيدة التي يمكن بوساطتها التوصل إلى المراد اثباته، وبذلك فان الخبرة طريقة من طرق التحقيق, ومن مفارقات الحال انه قد تكون الخبرة على نقيض ادلة عديدة, وبالرغم من ذلك يعتمدها الباحث لأنها تبنى على اليقين من ذوي الاختصاص ومن النادر يتسرب إليها الشك والاحتمال. ويحصل الخبير على خبرته من خلال ممارسة مهنة معينة أو عمل أو اختصاص علمي, ولكن لا نسلم الى القول بان يُعد خبيراً كل من يسند اليه المحقق او القاضي مهمة ذات طبيعة خاصة مالم تتوافر فيه صفة الادراك والاستنتاج فضلاً عن الامانة والاخلاص.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	8.25	**Structured SWL (h/sem)** الحمل الدراسي المنتظم للطالب خلال الفصل	33
Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	10.5	**Unstructured SWL (h/sem)** الحمل الدراسي غير المنتظم للطالب خلال الفصل	42
		Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	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	1-مفهوم الخبير الجنائي
Week 2	2-علاقه الخبير الجنائي بالخبير المدني
Week 3	3-التنظيم القانوني للخبير الجنائي
Week 4	4-المسؤليه القانونيه للخبير الجنائي
Week 5	5-اليات عمل الخبير الجنائي
Week 6	6-الحمايه القانونيه للخبير الجنائي
Week 7	7-العلاقه بين المحقق والخبير
Week 8	8-خصائص الخبير الجنائي
Week 9	9-امتحان
Week 10	10-المسؤليه المدنيه للخبير
Week 11	11-المسؤليه الجنائيه للخبير
Week 12	12-اجاءات انتداب الخبير الجنائي
Week 13	13-رسوم الخبره الجنائيه
Week 14	14-القيمه القانونيه للخبره الجنائيه
Week 15	Exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly tot. Syllabus) المنهاج الاسبوعي للمختبر	
	1. Material Covered
Week 1	1. علاقه الخبير الجنائي بالخبير المدني
Week 2	2. المسؤولية القانونيه للخبير الجنائي
Week 3	3. اليات عمل الخبير الجنائي
Week 4	4. العلاقه بين المحقق والخبير
Week 5	5. المسؤوليه الجنائيه للخبير
Week 6	6. القيمه القانونيه للخبره الجنائيه

Week 7	7. القيمه القانونيه للخبره الجنائيه

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	لمستحدث فى الخبرة الجنائية احمد صلاح الدين	Yes
Recommended Texts		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	**English language 2**			**Module Delivery**	
Module Type	**Suport**			☒**Theory** ☐ **Lecture** ☐ **Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	Kus 24021				
ECTS Credits	**2**				
SWL (hr/sem)	50				
Module Level	**4th**		**Semester of Delivery**		**2**
Administering Department			**College**		**Al-Karkh University of Science**
Module Leader	Dr. Saifaldeen M. Abdalhadi		**e-mail**		dr.saifaldeen@kus.edu.iq
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**		PhD
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date			**Version Number**		1

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	• Develop students' reading, writing, listening, and speaking skills in English. • Improve students' grammar and vocabulary usage in academic contexts. • Enhance communication skills for academic and everyday situations. • Encourage correct pronunciation and fluent language use. • Prepare students to understand and produce academic English texts.

	• Build confidence in using English for study and professional purposes.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of the course, students will be able to: 1. Understand and use appropriate English vocabulary and grammar structures. 2. Read and comprehend academic and general English texts effectively. 3. Write clear and organized paragraphs and short essays in English. 4. Communicate confidently in spoken English in academic and daily situations. 5. Apply listening skills to understand spoken English conversations and lectures.
Indicative Contents المحتويات الإرشادية	• Grammar and sentence structure • Reading comprehension skills • Academic and general vocabulary • Paragraph and short essay writing • Listening and speaking practice • Pronunciation and communication skills

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• interactive lectures and classroom discussions • Communicative language teaching methods • Group work and pair activities • Reading and writing exercises • Listening and speaking practice sessions • Use of multimedia and educational materials • Student presentations and participation • Continuous assessment and feedback • Homework and self-learning activities

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.25
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	20% (20)	Within the course	All of the previous Lectures
	Assignments	1	10% (10)	Within the course	All of the previous Lectures
	Seminar	1	10% (10)	Within the course	All of the previous Lectures
Summative assessment	Midterm Exam	1 hr	10% (10)	Within the course	All of the previous Lectures
	Final Exam	2 hr	50% (50)	After the course	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to the course and review of basic grammar
Week 2	Parts of speech and sentence structure
Week 3	Tenses in the English language
Week 4	Reading comprehension skills
Week 5	Academic vocabulary development
Week 6	Adjectives + vocabulary + pronunciation
Week 7	Writing paragraphs and topic sentences
Week 8	Sentence structure + pronunciation
Week 9	Essay writing skills
Week 10	Academic reading and text analysis
Week 11	Past simple + vocabulary
Week 12	Review of grammar and language skills
Week 13	Time expression + pronunciation
Week 14	Academic reading and text analysis
Week 15	Group discussions and presentations

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	• English Grammar in Use – Raymond Murphy • Headway Academic Skills – Sarah Philpot & Lesley Curnick	yes
Recommended Texts	• Oxford Practice Grammar – John Eastwood • Interchange – Jack C. Richards	yes
Websites	https://play.google.com/store/apps/details?id=uk.co.bbc.learningenglish&hl=en_US&gl=US&pli=1	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
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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	**Applications of Computer Science**	**Module Delivery**	
Module Type	**Support**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**KUS 24022**		
ECTS Credits	**3**		
SWL (hr/sem)	**75**		
Module Level	UGx	**Semester of Delivery**	second
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	Basic Computer Science	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	This course forensic computer application includes interactive lectures and practical applications to teach students the remaining MATLAB functions for the purpose of enhancing and analyzing criminal images. These functions include techniques for

	clarifying and removing fog and noise, which help forensic experts in identifying and distinguishing the offender. The course comprises interactive lectures and hands-on exercises that enable students to apply image processing algorithms and enhancement methods. Additionally, it equips students with the skills to analyze forensic images through various examples.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Studying the course on forensic computer applications can lead to several learning outcomes, including: 1. Providing students with skills in utilizing ready-made functions in MATLAB. 2. Learning about algorithms and their application in problem-solving. 3. Understanding the different types of images and their significance in processing. Students will acquire digital image processing skills using the MATLAB language. 4. Proficiency in Image Enhancement and Restoration: Students will gain expertise in applying image enhancement techniques to improve the visual quality of forensic images. They will learn methods to reduce noise, enhance contrast, and sharpen edges while preserving important anatomical details. 5. Image Segmentation and Region of Interest Extraction: Developing skills in segmenting forensic images to identify and extract specific regions of interest (ROIs) or anatomical structures. Students will learn about segmentation algorithms such as thresholding, region growing, active contour models, and clustering methods. 6. Feature Extraction and Analysis: Learning how to extract meaningful features from forensic images that can be used for further analysis and characterization. Students will understand feature extraction techniques such as texture analysis, shape analysis, intensity-based features, and statistical features. 7. Pattern Recognition and Classification: Acquiring knowledge in developing machine learning and pattern recognition algorithms for automatic detection, classification, and recognition of structures or abnormalities in forensic images. Students will comprehend concepts such as feature selection, classifier design, and performance evaluation.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A</u> Functions & Files, Elementary Mathematical Functions, User Defined, Functions Advanced Function Programming , Working with Data Files (read and write data file), Programming Techniques: Image Types , •Indexed images, •Intensity (or grayscale) images, •RGB images, Convert signals from an image sensor into digital images, Convert Between Image Types, Convert Between Data Types. [6 hrs] <u>Part B</u> Introduction in forensic image processing, Image processing in MATLAB, Read Image, Show Image, Displaying Images ,Writing Images, Image Rotation and Scale, Digital

	Image, Basic relationship between image pixels, Image Enhancement, Contrast Manipulation. [6 hrs] Part C Noise Removal, Linear Filtering, Nonlinear Filter, Filters for noise removal, 1. Mean Filtering, 2. Median Filtering, 4. Rank filtering, Modeling the Degradation Function, Use function deconvreg to restore a blurred, noisy image, Gaussian Blur Filter, Histogram Equalization, Adjust Intensity Values Using Histogram Equalization. [10 hrs] Part D Edge Detection, Canny Edge Detector, Sobel Edge Detection, Deblurring Images Using the Lucy-Richardson Algorithm, Definition the Analysis of forensic Images, Definition features detection, Perform Thresholding and Morphological Operations on Image, Morphological Dilation and Erosion, Corners, Template Matching. [10 hrs] Part E Definition the texture, Properties of textures, Create Gray-Level Co-occurrence (GLCM) Matrix from image, Image Segmentation, Point, Line, and Edge Detection, Use Intensity Thresholding to segment the object from the background of the image. [8 hrs] Part F Classification and Clustering, Definition the classification, Classification Based on Distance to Training Samples, Minimum distance classification, K nearest neighbor classifier, Examples using MATLAB, Decision Boundaries, Adaptive Decision Boundaries. [8 hrs] Part G Biological Neural System, The Multilayer Perceptron, Structure of the Multilayer Perceptrons, Create a Perceptron Network (nntool) ,Create Network ,Train the Perceptron, Export Perceptron, Results to Workspace, Clear Network/Data Window, Importing from the Command Line, Save a Variable to a File and Load It Later, Applications in forensic Image Analysis, Classification by Association, Multiple Instance Learning, Bag of Visual Words, Dealing with Imbalanced Data. [12 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	When it comes to forensic image processing and analysis using MATLAB, here are some strategies to consider: 1. Introduce the concepts of forensic image analysis: we start by providing an overview of forensic image analysis and its applications, such as image enhancement, restoration, forgery detection, and facial recognition. 2. Familiarize students with MATLAB's image processing toolbox: Teach students how to use MATLAB's image processing toolbox, which offers a wide range of functions and algorithms for forensic image analysis. Cover topics such as image filtering, histogram equalization, noise removal, and edge detection.

	3. Hands-on exercises and projects: Provide students with hands-on exercises and projects that involve applying forensic image processing techniques using MATLAB. Assign tasks such as enhancing low-light images, removing noise from images, detecting image forgeries, or performing facial recognition. 4. Image visualization and analysis: Demonstrate how to visualize and analyze images using MATLAB. Show students how to display, manipulate, and explore forensic images using functions like imshow, imtool, or montage. Teach them techniques for extracting features, measuring image properties, and performing quantitative analysis. 5. Image enhancement and restoration: Teach students various image enhancement and restoration techniques using MATLAB. Cover topics such as contrast adjustment, noise reduction, image sharpening, and image inpainting. 6. Forgery detection and authentication: Explore techniques for detecting image forgeries, such as copy-move forgery detection, splicing detection, and image tampering analysis. 7. Facial recognition: Introduce facial recognition techniques and algorithms using MATLAB. Explain the concepts of feature extraction, face detection, and face matching. Demonstrate how to build a basic facial recognition system using MATLAB's facial recognition toolbox or relevant libraries. 8. Error handling and robustness: Emphasize the importance of error handling and robustness in forensic image processing. Teach students how to handle common challenges and issues in image analysis, such as variations in lighting, noise, or image distortions. 9. Validation and verification: Discuss the importance of validation and verification in forensic image analysis. Teach students how to validate their results, evaluate the performance of their algorithms, and compare different approaches. 10. Collaboration and interdisciplinary learning: Foster collaboration among students from different disciplines, such as computer science, forensic science, and law enforcement. Encourage interdisciplinary discussions and projects that combine image processing techniques with forensic science knowledge. 11. Stay updated with advancements in forensic image processing: Stay informed about the latest research and advancements in the field of forensic image processing. Incorporate recent techniques and algorithms into your teaching to expose students to current trends and emerging technologies. 12. Ethical considerations: Discuss ethical considerations and legal implications related to forensic image processing. Teach students about privacy concerns, data integrity, and the ethical use of image analysis techniques in forensic investigations. By implementing these strategies, you can provide students with a solid foundation in forensic image processing and analysis using MATLAB, preparing them for careers in forensic science, law enforcement, or image analysis research.

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	15.75
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	12	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	5% (5)	5, 15	LO # 1,2,3,4,9 and 10
	Assignments	2	10% (10)	6, 14	LO # 5, 6,7,8, 11 and 12
	Projects / Lab.	1	20% (20)	Continuous	
	Report	1	5% (5)	16	LO # 13, 15
Summative assessment	Midterm Exam	2hr	10% (10)	9	LO # 1-8
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Functions & Files, Elementary Mathematical Functions, User Defined Functions Advanced Function Programming , Working with Data Files (read and write data file).
Week 2	Programming Techniques: Image Types , •Indexed images, •Intensity (or grayscale) images, •RGB images, Convert signals from an image sensor into digital images, Convert Between Image Types, Convert Between Data Types, Examples.
Week 3	Introduction in forensic image processing, Image processing in MATLAB, Read Image, Show Image, Displaying Images ,Writing Images, Image Rotation and Scale, Examples.
Week 4	Digital Image, Basic relationship between image pixels, Image Enhancement, Contrast Manipulation
Week 5	Noise Removal, Linear Filtering, Nonlinear Filter, Filters for noise removal, 1. Mean Filtering, 2. Median Filtering, 4. Rank filtering.

Week 6	Modeling the Degradation Function, Use function deconvreg to restore a blurred, noisy image, Gaussian Blur Filter, Histogram Equalization, Adjust Intensity Values Using Histogram Equalization.
Week 7	Edge Detection, Canny Edge Detector, Sobel Edge Detection, Deblurring Images Using the Lucy-Richardson Algorithm.
Week 8	Definition the Analysis of forensic Images, Definition features detection, Perform Thresholding and Morphological Operations on Image, Morphological Dilation and Erosion, Corners, Template Matching.
Week 9	Definition the texture, Properties of textures, Create Gray-Level Co-occurrence (GLCM) Matrix from image.
Week 10	Image Segmentation, Point, Line, and Edge Detection, Use Intensity Thresholding to segment the object from the background of the image.
Week 11	Classification and Clustering, Definition the classification, Classification Based on Distance to Training Samples, Minimum distance classification.
Week 12	K nearest neighbor classifier, Examples using MATLAB, Decision Boundaries, Adaptive Decision Boundaries.
Week 13	Biological Neural System, The Multilayer Perceptron, Structure of the Multilayer Perceptrons.
Week 14	Create a Perceptron Network (nntool) ,Create Network ,Train the Perceptron, Export Perceptron, Results to Workspace, Clear Network/Data Window, Importing from the Command Line, Save a Variable to a File and Load It Later, Applications in forensic Image Analysis.
Week 15	Classification by Association, Multiple Instance Learning, Bag of Visual Words, Dealing with Imbalanced Data, Exercises.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Functions & Files, Working with Data Files (read and write data file).
Week 2	Lab 2: Programming Techniques: Image Types , •Indexed images, •Intensity (or grayscale) images, •RGB images, Convert signals from an image sensor into digital images, Examples of convert between Image Types, Convert Between Data Types, Examples of Image Rotation and Scale, Read Image, Show Image.
Week 3	Lab 3: Read, write, display images, Image Rotation and Scale, Contrast Adjustment, Histogram Equalization
Week 4	Lab 4: Rank and Max-Min Filters
Week 5	Lab 5: Edge Detection, Thresholding, Morphological (Dilation and Erosion) Operations and Corners on Image, Template Matching and Texture.
Week 6	Lab 6: Create Gray-Level Co-occurrence (GLCM) Matrix from image, Image Segmentation Polynomial and Global thresholds

Week 7	Lab 7: Classification and Clustering , Perceptron Network

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Matlab: Numerical Computing, Tutorials point,2014. Alasdair McAndrew, An Introduction to Digital Image Processing with Matlab, Notes for SCM2511 Image, Processing 1, Semester 1, 2004, School of Computer Science and Mathematics, Victoria University of Technology. Gonzalez R. C." Digital Image Processing", Woods R. E. ,2008 Image Processing for Computer Graphics and Vision, by Luiz Velho • Alejandro C. Frery •Jonas Gomes 2009 Sammes, A., & Jenkinson, G. (Eds.). (2016). Forensic Computing: A Practitioner's Guide. Springer.	Yes
Recommended Texts	Sutherland, I. E. (Ed.). (2021). Handbook of digital image processing: with examples in MATLAB. Springer. Kouzmanoff, S., & Khan, H. (2019). Handbook of Digital Forensics and Investigation. Academic Press.	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.

المستوى الثالث

MODULE DESCRIPTION

(Molecular Application)

Module Information					
Module Title	**Molecular Application**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 35125**				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level	UGx		**Semester of Delivery**	1	
Administering Department	Forensic \FOR		**College**	SC	
Module Leader	Dr.Hasan Ali Mohamed		**e-mail**	Dr.hasanaljezani@Kus.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**		
Module Tutor	Dr.Hasan Ali Mohamed		**e-mail**	Dr.hasanaljezani@Kus.edu.iq	
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date	01/1/2026		**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	This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 1-The students will work their way through a DNA practical, making use of the learned techniques. 2-New research and techniques will also be looked at within forensic DNA analysis. 3-This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 4-The students will work their way through a DNA practical, making use of the learned techniques. 5- New research and techniques will also be looked at within forensic DNA analysis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module the student should be able to: 1. Compare and contrast past, present and future techniques used in DNA profiling. 2. Have a critical understanding of STR and sexing PCR systems, which are used by many countries including the UK to generate sizeable DNA profiles using coloured dye and laser technology. 3. Assess the benefits and pitfalls of using DNA profiling data relating to crime scenes, criminal investigations and identification of human remains. 4. Distinguish between the specialist techniques such as mitochondrial DNA sequence analysis, Y-STR analysis and the scientific basis of familial database searching. 5. Appraise new developments & ongoing research areas e.g. linking physical characteristics to DNA, detection of forensically important SNPs or identify body fluids using nucleic acid analysis.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1- DNA structure, genetics, molecular biology Occurrence and distribution of unique, middle and highly repetitive DNA fractions. Hypervariable fraction and its exploitation in forensic science 2- Background to DNA profiling Alec Jeffreys - minisatellite DNA - first use of DNA profiling - progress through the 1980's, 90s, 00s - Multilocus DNA profiling (MLP) - Single locus probes (SLP), PCR based techniques such as HLADQa, Quad, SGM SGMplus, DNA-17, New multiplexes 3- Generation of STR DNA profiles Introduction to how reproducible and sizeable DNA profiles using multiplexed short tandem repeat (STR) are generated. 4- Crime Scene profiling Human remains identification, including mass disaster- victim ID by the use of surrogate reference samples and relatives' samples. Sources of DNA encountered in forensic casework and anti-contamination procedures. 5- Statistical evaluation of DNA matches and court presentation Match probability calculations, population genetics and Bayesian approach to

	evidence interpretation. Presentation of DNA evidence in court; challenges and appeals 6- Population Genetics Principles of inheritance - Mendel's laws, population genetics 7- Identification of human remains

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The aim of this Module is to provide students with the ability to critically evaluate current thinking and research in forensic DNA analysis and extraction from different samples as well as to fully understand the procedures and analysis performed within a modern forensic DNA laboratory.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	24.25
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	Introduction .
Week 2-3	Basic tools and techniques of DNA analysis.
Week 4-5	DNA extraction techniques
Week 6-7	DNA extraction techniques (continued)
Week 8-9	Quantification of nucleic acids and Polymerase chain reaction (PCR)
Week 10	Forensic DNA phenotype and Y- CHROMOSOMAL analysis, Mitochondrial DNA analysis
Week 11-12	**In-situ hybridization , Single cell fingerprinting and Low copy number (LCN) DNA typing**
Week 13-14	Nucleic acid electrophoresis
Week 15	DNA sequencing types
Week 16	**DNA evidence in criminal trials**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1-2	Lab 1: buffers preparation.
Week 3-4	Lab 2: collecting DNA from different biological samples
Week 5-6	Lab 3: collecting DNA from different biological samples (continued)
Week 7-8	Lab 4: phenol-chloroform extraction method
Week 9-10	Lab 5: mitochondrial DNA extraction method
Week 11-12	Lab 6: Quantification of DNA concentration
Week 13-14	Lab 7: conventional polymerase chain reaction
Week 15	Lab 8: reverse transcription PCR , quantitative real time PCR , nested PCR , COLD PCR and ligation mediated PCR
Week16	Lab 9: DNA electrophoresis and guide to NCBI databases

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	GLICK, B.R., PASTERNAK, J.J. and PATTEN, C.L. Molecular Biotechnology. Current Edition. American Society for Microbiology	no
Recommended Texts	DALE, J.W. adn VON SCHANTZ, M. From Genes to Genomes. Concepts and applications of DNA Technology. Current Edition. Wiley-Blackwell.s	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

Module Information		
Module Title	**Instrumental Analysis**	**Module Delivery**
Module Type	**Basic**	☒ **Theory** ☐ **Lecture** ☒ **Lab**
Module Code	FOR35126	

ECTS Credits	7	☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
SWL (hr/sem)	175		
Module Level	5th	**Semester of Delivery**	1
Administering Department	FORN	**College**	SC
Module Leader	FRAS HABEB ABDULRAZZAK	**e-mail**	Firas_ald2020@yahoo.com
Module Leader's Acad. Title	Prof.	**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	The overall goal of this course is to provide students with a sufficient understanding of the principles, laws, and theories of analytical chemistry to enable them to successfully analyze samples provided using selected instrumental methods. The student should gain the competence to follow a standard procedure, operate the-instrument in a safe manner, collect suitable data, evaluate the reliability of the data collected, and report the results in an appropriate form as would be required of any competent laboratory technician.
Module Learning Outcomes	at the successful completion of this course participants: 1. should be able to successfully solve a variety of multi-step problems using mathematical and descriptive algorithms and, specifically in the laboratory portion of the course.

مخرجات التعلم للمادة الدراسية	2. participants will be able to utilize analytical chemical instrumentation properly including. 3. preparation of high accuracy standards. 4. set the operating parameters of different instruments. 5. perform calibration and analysis. 6. recognize and appreciate the value of analytical instruments used, as well as their limitations, in the solution of selected problems faced by the technician. realize the existence of a variety of instrumental methods, each with its own particular use based on its capabilities and limitations. 7. understand that the selection of one instrumental method, as being superior to another in the solution of a particular analytical problem, is based on such factors as sensitivity, time required, selectivity, purchase cost of instruments involved, etc. 8. understand that the success of any of the instrumental methods used depends upon a working knowledge and control of the operating parameters associated with each instrument studied. 9. have a basic operational knowledge of the internal design of the instruments studied.
Indicative Contents المحتويات الإرشادية	The theoretical background of each instrument will be given in lecture. Emphasis on the operating parameters associated with each of the instruments studied will be provided in the laboratory. Operational details are covered sufficiently to provide an adequate understanding of the techniques used without being overwhelmed by details. Upon successful completion of this course every course participant should be able to: 1-understand the principles underlying the operation of each of the studied instruments and extrapolate that knowledge to other instrumental methods.[10h] 2-describe the operational parameters for each of the analytical instruments studied. [10h] 3- carry out calibration of instruments, preparation of a sample for analysis, safe handling of the sample during the analysis, and proper disposal of the sample after completion of the analysis. [10h] 4- use techniques for recording and evaluating analytical data derived from i 5- solve a variety of numerical problems dealing with the analysis of samples using the various instrumental methods studied. [10h] 6- write in scientific format reports of the theory, experimental method, and results of an analysis. [10h] This course is designed to provide the framework on which hangs a significant portion of the body of basic chemistry knowledge, allowing the perceptive participant to glance into the richness of the microscopic world from a macroscopic point of view, and to provide the foundation for further studies in the sciences. Over the course of the semester, the successful participant will develop new and expand upon existing skills in critical thinking, mathematics, chemical analysis, and the scientific method. Since chemistry is by its very nature an experimental science, honesty and integrity in the acquisition and analysis of data is at the very core of the scientific process. It is part of our role as practicing

	scientists to defend the nature of scientific discourse and to expose pseudoscience and scientific dishonesty. [15h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The module will consist of lectures with theoretical analysis and real-world examples and applications to improve students' learning and analytical skills. In-class group discussions of research papers will facilitate deeper understanding and encourage critical thinking. The assessment includes two summative elements that are a group recorded quiz and an individual written essay. The pass mark for the written assignment and module is 50%. A qualifying mark of 40% on each assessed component of the module must be achieved to pass the module. Each of the component marks is then combined, using the appropriate weighting, to give an overall mark for the module. If the overall mark is less than 50% when the weighting has been applied to the components, this constitutes a failure of the module.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	24.25
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	**Introduction** Classification of analytical methods Instrumental methods
Week 2	Basics of selecting a method
Week 3	The “schematic instrument”
Week 4	Introduction to Spectroscopy Electromagnetic radiation Quantum mechanical considerations
Week 5	Absorption and emission Diffraction, dispersion, refraction, reflection
Week 6	Instrumentation for Spectroscopy Sources Monochromators
Week 7	Sampling Detectors Signal processing
Week 8	UV-Visible Molecular (Electronic) Spectroscopy Terms Theory
Week 9	Quantitative and qualitative aspects Applications
Week 10	Atomic Spectroscopy Terms Theory Instrumentation
Week 11	Sampling Atomic absorption/emission spectroscopy Inductively coupled plasma spectroscopy
Week 12	Infrared Spectroscopy Theory Instrumentation (FT vs. scanning) Sampling Spectral interpretation

Week 13	Chromatographic Methods (Chem340 Redux) Classification Rate theory and solute migration Column efficiency
Week 14	van Deempter relationship Gas chromatography Instrumentation Applications HPLC
Week 15	Instrumentation Applications
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safty and security in chemical lab
Week 2	Lab 2: Introduction to Emission and Absorption Spectroscopy: Line spectra, continuous spectra, spectroscopes, spectrophotometers
Week 3	Lab 3: Determination of the Formula of a Complex by the Method of Continuous Variations
Week 4	Lab 4: Spectrophotometric Analysis of a Complex Mixture
Week 5	Lab 5: Spectrophotometric Analysis of a Commercial Aspirin Tablet
Week 6	Lab 6: Spectrophotometric Analysis of a Commercial Aspirin Tablet
Week 7	Lab 7: Spectrophotometric Determination of Iron in Vitamin Tablets
Week 8	Lab 8: Spectrophotometric Determination of Paracetamol in Pharmaceutical formulations
Week 9	Lab 9 : Potentiometric titration of Iron tablet
Week10	Lab10: Titration of Phosphoric Acid and Acetic Acid with NaOH
Week11	Lab11: Quantitative Analysis of Ascorbic Acid Using Voltammetry
Week12	Lab12:review before final exam
Week13	Lab13:Thermal gravimetric analysis Determination of Calcium in vitamin tablet
Week14	Lab14:chroatograph TLC\PLC
Week15	Lab15;exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Principles of Instrumental Analysis, Douglas A. Skoog, F. James Holler, Stanley R. Crouch, 2007	no
Recommended Texts	Principles and Applications of Thermal Analysis, Paul Gabbott John Wiley & Sons, 2008 Studyguide for Principles of Instrumental Analysis by Skoog, Holler and Nieman, 2012	yes
Websites	https://studylib.net/doc/8252056/course-syllabus-for-instrumental-analysis--chem-5640-	

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

Module Information		
Module Title	Forensic chemistry	**Module Delivery**
Module Type	**Basic**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**FOR 35027**	
ECTS Credits	**5**	
SWL (hr/sem)	**125**	

Module Level	UGx	**Semester of Delivery**	1
Administering Department	Forensic \FOR	**College**	SC
Module Leader	Firas Habeb Abdulrazzak	**e-mail**	Firas Habeb Abdulrazzak
Module Leader's Acad. Title	Prof.	**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	• To develop an appreciation of the analytical approach. • To introduce the student to forensic chemistry. • To provide the student with knowledge of the forensic chemistry practical & reporting techniques. • To provide the student with skills in researching the scientific literature and presenting a scientific topic.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Appreciate the correct analytical science approach to measurement and observation. • Understand the some everyday analytical instrumental techniques and their application. • Obtain an appreciation for forensic chemistry techniques and their application to cases. • Record and report observations in a correct scientific fashion.

	• Carry out appropriate scientific methods for scene analysis.
Indicative Contents المحتويات الإرشادية	***Indicative Syllabus*** Making & Recording Measurements]18h] Observations, diagrams & taking photographs SI Units Scientific method Collecting evidence Fundamental Laboratory Techniques **Analytical Techniques as applied to forensic science: [20h]** Sample Preparation Chromatography Gas & Liquid Chromatography Basic Spectroscopy Atomic Spectroscopy X-Ray Fluorescence- Infrared spectroscopy NMR Mass spectrometry **Which include: [15h]** Alcohol analysis Bulk drug analysis Analysis of glass Analysis of paint Analysis of fire and explosions Analysis of firearms Document analysis

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	All learning materials, including lecture notes, additional multimedia and electronic copies of subject manuals can be found in the relevant modules on Canvas. **Interactive online lectures:** The lectures arm students with the knowledge required to analyse and interpret chemical traces commonly recovered at crime scenes, including emerging technologies and methods that are at the forefront of the discipline. While the focus of the lectures is on trace evidence, the skills acquired in this subject build on the knowledge and professional skills developed in the pre-requisite subjects. The topics discussed in these sessions provide the foundation for the workshops and practicals, where students apply their new knowledge. The lectures are broken into structured blocks of information and application/activity - facilitated

	by interactive online tools - with opportunities for class discussion and participation. **Practicals:**The practical sessions for Chemical Criminalistics allow students to gain experience with the analysis of different types of chemical and microtraces in a collaborative, professional setting. Students are given four mock cases (based on realistic case scenarios) to investigate as a team during the semester. Prior to commencing each case, student teams will identify hypotheses (propositions of interest), the aims of their investigation, and design and implement an examination strategy to be used in the laboratory. The hands-on session time is dedicated to the analysis of evidence and formulating the initial interpretation of their findings in the context of the case. This initial interpretation is then refined by each student and used to synthesise and report their expert opinion in different styles of expert witness testimony. These classes are student-led with one-on-one and group support provided by teaching and professional staff. As cases are assigned on rotation, students familiarlise themselves with the techniques required for their case scenarios by designing an examination strategy as a pre-lab activity for each new case.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75
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.	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	**Introduction, Physical evidence**
Week 2	**Chemicals in the criminal.**
Week 3	**Blood drop studies**
Week 4	**DNA**
Week 5	**Toxicology**
Week 6	**Drugs**
Week 7	**Fingerprints**
Week 8	**Forensic medicine**
Week 9	**Hair and fibers**
Week 10	**Handwriting and ink analysis**
Week 11	**Polymer identification**
Week 12	**Instrument used in forensic chemistry.**
Week 13	**UV detection**
Week 14	**Criminal cases**
Week 15	**exam**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safety-and security
Week 2-4	Lab 2-4: sampling or evidence sciences
Week 5	Lab 5: identification of fingerprint (Latent Fingerprints)

Week 6	Lab 6: identification for different materials by chemical method
Week 7	Lab 7: Select appropriate techniques for evidence recording, packaging and labelling
Week 8	Lab 8: identification of blood
Week 9	Lab 9: identification of drags
Week 10	Lab 10: identification of poisons
Week 11	Lab 11 : identification of toxic material
Week12-14	Lab14: identification of unknown
Week12	Lab15:review before final exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Curran, J., Hicks, T., Buckleton, J., Forensic Interpretation of Glass Evidence, CRC Press LLC, 2000 (online & print)	no
Recommended Texts	Nanotoxicity: From In Vivo and In Vitro Models to Health Risks, Editor(s): Saura C. Sahu Daniel A. Casciano	yes
Websites	https://www.intechopen.com/chapters/66164	

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
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	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

Module Information					
Module Title	**Chemical and microscopic detection methods**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 35028**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGx		**Semester of Delivery**	1	
Administering Department	Forensic \FOR		**College**	science	
Module Leader	Prof. Dr. Firas Habeb 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	Prof. Dr. Firas Habeb Abdulrazzak		**e-mail**	Firas_ald2020@yahoo.com	
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	The course builds on previous studies in spectroscopy. The aim is to enable students to : 1. acquire specialised understanding of how light interacts with molecules and materials. 2.Different methods of optical spectroscopy and their use to examine chemical and physical properties are addressed at an advanced level. 3.the students shall be able to explain the electronic processes that can be excited by light 4.describe how scattered and emitted light from a sample can be determined and measured. 5.explain the basic principles and properties of a laser and how it can be used in an optical experiment. 6. provide an advanced account of how experimental spectroscopic data are interpreted in terms of the properties of molecules and molecular systems. 7.describe the physical principles of an elementary photochemical reaction.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1-discuss different spectroscopic methods and compare their advantages and disadvantages 2-perform simple calculations based on spectroscopic data in order to obtain molecular properties 3- use optical spectroscopy to plan and perform experiments and calculations 4- propose appropriate spectroscopic methods to determine specific molecular properties 5- write laboratory reports in the field of optical spectroscopy assess the uncertainties and error limits of spectroscopic data and evaluate them 6- critically discuss and evaluate results from measurements performed with optical spectroscopy.
Indicative Contents المحتويات الإرشادية	1. Demonstrate knowledge and understanding of core and foundation scientific physical, chemical concepts, terminology, theory, units, conventions, and laboratory methods in relation to the chemical and forensic sciences. [10h] 2. Demonstrate knowledge and understanding of areas of chemistry including characterization chemistry, including as applied to forensic analysis.[8h] 3. Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to identification chemistry and to apply such knowledge and understanding to the solution of qualitative and quantitative problems.[10h] 4. Recognise and analyse problems involving analytical chemistry and plan strategies for their solution by the evaluation, interpretation and synthesis of scientific

	information and data by a variety of computational methods.[10h] 5. Collate, interpret and explain the significance and underlying theory of experimental data, including an assessment of limits of accuracy.[7h] 6. Interpret data derived from laboratory observations and measurements in terms of their underlying significance and the theory underpinning them. [8h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Instructional strategies currently applied at all educational levels are still mass. Treatment and educational services provided to all students are the same, even though students differ in many respects, both auditory and kinesthetic learning styles, level of skill, intelligence, interests, talents, and creativity. The strategy of educational services like this is appropriate in terms of equal opportunity, but less support efforts to optimize the development potential of learners appropriately.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75
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**
	Quizzes	2	10% (10)	5, 10	LO #1, 2, 10 and 11

Formative assessment	**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	basic principles of interaction between light and molecules, and the formation of excited states
Week 2	the time evolution of excited states in intra- and intermolecular energy and electron transitions and their role in photochemical reactions
Week 3	Energy of absorbance and spectrum ,maximum absorbance and the parameter which influence on it
Week 4	description of different sources of light (e.g. lasers) and light detectors of relevance to spectroscopy
Week 5	detailed descriptions of different optical methods such as absorption and fluorescence spectroscopy and time-resolved laser spectroscopy
Week 6-7	introduction to fluorescence microscopy and detection of individual molecules
Week 8-9	introduction to X-ray spectroscopy for measurement of molecular structure and chemical bonding
Week 10-11	Raman and IR SPECTOSCOPY
Week 12-15	Macro and micro with optic or electronic scoop analysis
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safety and security
Week 2	Lab 2: preparing sample for analysis
Week 3	Lab 3: uv-spectrum for different materials
Week 4	Lab 4: determination of maximum wave length of absorbance

Week 5	Lab 5: application of uv-spectrum to determinate concentration
Week 6	Lab 6: Ir spectroscopy
Week 7	Lab 7: macroscopic images for different materials
Week 8	Lab 8: macroscopic images for different materials
Week 9	Lab 9 : macroscopic images for different materials

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Physical Chemistry, 11th Edition, by Atkins/dePaula/Keeler (Oxford University Press, 2018).	NO
Recommended Texts	Molecular Driving Forces, 2nd Edition, by Dill/Bromberg (Garland Science, 2010).	yes
Websites	https://pubs.acs.org/doi/10.1021/jacs.3c00221	

Grading Scheme

مخطط الدرجات

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

Module Information

Module Title	**Introduction to explosive materials and booby traps**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 35029**		
ECTS Credits	3		
SWL (hr/sem)	75		

Module Level	UGx	**Semester of Delivery**	1
Administering Department	Forensic \FOR	**College**	SC
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
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	People who work in areas that have experienced armed conflict may be confronted with the threat posed by landmines and explosive hazards, which include unexploded or abandoned ordnance, abandoned military vehicles and equipment, as well as IEDs. (Note that the term ERW includes unexploded ordnance (UXO) and abandoned ordnance but excludes landmines, see definition in the glossary, Annex 6). Any kind of explosive device may block access to project sites or pose a direct threat to safety,

	even years after a conflict has ended. When working in such areas, organizations and individuals must be aware of the physical threats posed by a huge variety of armaments left during and after armed conflict.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Our country, especially in the last thirty years, witnessed a lot of regional problems that led to our country entering many wars that lasted for long periods. Our land is very large, so the basic outputs of this course include the following: 1-Provide the student with information, even in general terms, about the various types of weapons and materials called explosives, as well as materials that can be used as a means of detonation and destruction. 2-The other can be harnessed in terms of terrorist acts or killings. 3-make the student able to deal correctly, positively, and safely when exposed to the various dangers that exist at the site of the event, such as weapons, mines, or chemicals that may be misused. 4- make the student able to distinguish between usable materials. Civil and dual-use materials . 5-Providing the student with the basic and necessary information and skills that make him able to pay quick and early attention in distinguishing any danger that may exist at the scene of the event or the site of the crime in a manner that preserves his safety and the safety of those present at the scene of the event
Indicative Contents المحتويات الإرشادية	An introduction course in explosives and booby-traps is one of the most important courses given in the Department of Forensic Science, which requires teaching the following aspects. Wars as a means to prepare explosives On the other hand, the emphasis and focus on the method used to place explosives and the method used to implement them, especially since Iraq witnessed during the last ten years many of these experiences, which can be benefited from to become the studied environment on the security side, or at least increase the percentage of safety at the site of the event before Or after its occurrence, the other side is to know the psychological side, albeit superficially, of the genitals, which can help predict the method of preparing the criminal approach.[16h] Therefore, teaching this subject requires the use of electronic means and films,Assigning students to prepare reports and studies on the scientific and skillful aspects by investigating many of the operations that took place in previous periods, with a focus on the need to prepare professional reports so that the student is able to highlight the scientific and skillful side.[15h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The strategy of teaching this subject includes : 1-relying on books available on the international network.

	2- Relying on the last ten years that our country has gone through, especially from terrorist threats and the experiences that resulted from it. 3-Benefiting from the wars that took place in Iraq to try to obtain experience in how to deal with various materials and components that threaten the public security of society, 4- use of an international information network and referring to those with expertise and specialists in this field, with an emphasis on the practical side that increases the skillful competence of students

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	10.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	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	Introduction to explosive materials and booby traps
Week 2	Explosive materials
Week 3	Double usage materials
Week 4	Landmines and anti-Landmines
Week 5	Characterization Methods explosive materials
Week 6	Characterization Methods double usage materials
Week 7	modification of explosive materials with double usage materials
Week 8	Removing explosive materials
Week 9	Boopytraps classification
Week 10	Boopytraps equipment
Week 11	Booby-traps insulation
Week 12	Booby-traps identification
Week 13	Booby-traps modifying
Week 14	Booby-traps removing
Week 15	exam
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	LANDMINES, EXPLOSIVE REMNANTS OF WAR AND IED SAFETY HANDBOOK chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.unmas.org/sites/default/files/handbook_english.pdf	no
Recommended Texts	Boopytraps chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.bits.de/NRANEU/others/amd-us-archive/FM5-31%2865%29.pdf	yes

Websites	http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/forensic_science/05._forensic_chemistry_and_explosives/31._explosives___introduction/et/4742_et_4742_et_31et.pdf

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

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Forensic Psychology**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 35130**				
ECTS Credits	3				
SWL (hr/sem)	75				
Module Level	UGx		**Semester of Delivery**	1	
Administering Department	FORN		**College**	SC	
Module Leader			**e-mail**		

Module Leader's Acad. Title	Asst.prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor	Name (if available)	**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	**علم النفس الجنائي** هو علم دراسة أفكار ونوايا وردود فعل المجرمين وتحركاتهم التي تلعب دوراً في ارتكاب الجريمة. أدى الاهتمام بالجوانب النفسية للمجرم إلى نشأة هذا العلم، وكذلك عجز المؤسسات الاجتماعية في إيجاد الحلول المناسبة للحد من سلوك المجرم وثنيه عما أراد، وكذلك شكوى المجتمعات من تكاثر وتطور الجريمة في المجتمع الصغير والكبير، وفشل مؤسسات التربية والتعليم صغيرها وكبيرها في بعض الدول عن احتواء المراهقين وتعديل سلوكهم، ورؤية بعض علماء النفس والتربويين البحث والتقصي في مثل هذه القضايا التي أرهقت كاهل الشعوب والأمن في كثير من دول العالم. اهداف تدريس المادة لطلاب علوم الأدلة الجنائية : 1- اكتشاف الجريمة وتحديد المجرم على أساس علمي إنساني وبالاعتماد على شواهد لصفات المشتبة بهم وربطها مع مسرح الجريمة 2- دراسة السلوك الإجرامي من حيث أسبابه ودوافعه الشعورية واللا شعورية مما يساعد على فهم شخصية المجرم ووضع الفرضيات التي تؤكد او تزيل الشك تجاة المتهم من خلال صفات شخصية. 3- دراسة الظروف والعوامل الموضوعية التي تُهيئ للجريمة وتساعد عليها. 4-تصنيف المجرمين طبقا لأعمارهم وجرائمهم وحالاتهم النفسية والعقلية بقصد تحديد خصوصية كل فئة مسؤلة عن الجرم لكل واحد منهم. 5- يتضمن دمج علم النفس في الحالات القانونية استخدام النظريات والمبادئ النفسية ومنهجيات البحث لفهم القضايا القانونية بشكل أفضل. ويمكن أن يتراوح ذلك من المستوى

الجزئي، كفهم دوافع جريمة معينة، إلى المستوى الكلي، كتقييم فعالية برامج إعادة التأهيل داخل نظام السجون.	
مخرجات تدريس علم النفس الجنائي : 1- تطوير المهارات العملية الأساسية كمحقق جنائى، مثل :التحليل وحل المشكلات: لتحليل الأدلة وربط المعلومات .الانتباه للتفاصيل: للتعامل مع مسارح الجرائم وتفسير الأدلة .التواصل الفعّال: لإجراء مقابلات مع الشهود والمشتبه بهم. 2- جعل العامل في المجال ذو قدرة على الانتباة على الخصائص الفردية للشخوص المتواجدة في مسرح الجريمة سواء كانوا شهود او متهمين او بصفة أخرى بحيث يكون قادر على وضع فرضيات أولية تتناسب مع مامتوفر انيا في مسرح الحدث وما يمكن ان يتبين خلال البحث . 3- امتلاك الباحث الجنائي معلومات عن علم النفس العام بشكل عام وعلم النفس الجنائي بشكل خاص وبمستوى عالي بحيث يمكن استخدام هذه المعلومات خلال عملية التحري والتحقيق في مسرح الجريمة. 4- جعل العامل في المجال يمتاز بالذكاء والفطنة والقدرة على التحليل والاستنتاج .الصبر والتحمل والقدرة على العمل تحت الضغط وامتلاكه مهارات التواصل والاستجواب الجيدة.	**Module Learning Outcomes** مخرجات التعلم للمادة الدراسية
يتضمن علم النفس الجنائي، كمجال، تطبيق مختلف التخصصات النفسية، بما في ذلك علم النفس السريري، وعلم النفس التنموي، وعلم النفس المعرفي، وعلم النفس الاجتماعي، على الحالات القانونية. وقد يتخذ هذا التطبيق أشكالًا متعددة، مثل تقييم الحالة النفسية للفرد أثناء الإجراءات القانونية، وتقديم المشورة بشأن اختيار هيئة المحلفين، وغيرها الكثير. لذلك يجب عند تدريس المادة ان يكون هنالك حيز اول لاعطاء فكرة واضحة وشاملة لعلم النفس بشكل عام (5 ساعات) والبدء بدراسة تفاصيل هذا العلم من تخصصات (2 ساعة) ومعرفة توجة كل تخصص من هذه التخصصات ثم التركيز على علم النفس الجنائي كعنوان عام (4 ساعات) والدخول في تفاصيلة الدقيقة بالتدريج بحيث يعطي مساحة كاملة لكل جزء من أجزاء هذا العلم بالخصوص (20 ساعة) وهذا يتطلب الخوض في التفاصيل العامة والدقيقة لهذه المضامين مع استدراج لامثلة حقيقة من ارض الواقع بتكون اكثر فائدة علمية عملية للدارس (10 ساعات). ومن خلال ماذكر في اعلاة يتم الخوض في العديد من التفاصيل الدقيقة لكل ما يتعلق بعلم النفس الجنائي من جوانب نفسية واجتماعية وبيئية بالاظافة الى التطرق للجوانب الصحية التي من الممكن ان تكون سبب للعديد ان لم لم تكن كل الجرائم التي تحصل في المحتمه (15 ساعه) . هذا كلة يتطلب تكليف الك\طلاب بالعديد من النشاطات العلمية والمهارية في هذا الجانب بحيث يحقق اهداف تدريس المادة ومنها تعزيز الجانب المعرفي للعامل في المجال وتعزيز قدرتة على الملاحظه والفطنة وسرعة البديهية (5 ساعات).	**Indicative Contents** المحتويات الإرشادية

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	تتضمن ستراتيجية التعلم والتعليم في تدريس المادة الجوانب الاتية: أولا: الاستعانة بالمصادر العلمية الخارجية باستمرار خلال الفصل الدراسي وادخالها في حلقات دراسية نقاشية تدار من قبل مدرس المادة . ثانيا: توفير براء في مجال الاختصاص على مدار الفصل الدراسي على الأقل خبيرين يتم من خلالهم عرض خبرة هؤلاء المحققين الجنائيين على الطلبة من خلال عرض قضايا مختلفة. ثالثا: تكليف الطلبة على شكل مجموعات بكتابة تقارير عن قضايا يتم الاتفاق عليها مع تدريسي المادة على ان تناقش خلال النصف الثاني من الفصل الدراسي. رابعا: القيام بزيارات علمية للمؤسسات ذات العلاقة في مجال علم النفس الجنائي والوقوف على تفاصيل الكثير من القضايا والتي بدورها تزيد من مهارات الطالب.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	10.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5, 10	
	Assignments	2	10% (10)	2, 12	
	Projects / Lab.				
	Report	1	10% (10)	13	
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	مقدمة في علم النفس العام وعلم النفس الجنائي مع بيان اقسام علم النفس العام وبكل تفاصيلة
Week 2	الفروع والأقسام الجنائية ومنها :علم نفس الجريمة والانحراف، وعلم النفس الشرطي، وعلم النفس القانوني، وعلم النفس الإصلاحي، بالإضافة إلى غيرها الكثير من هذه الفروع والأقسام الجنائية
Week 3	الصحة النفسية وارتكاب الجريمة
Week 4	العلاقة بين **علم النفس الجنائي** وعلم الوراثة
Week 5	لعلاقة بين السمات الشخصية للإنسان وارتكاب الجريمة. العلاقة بين الفقر والجريمة.
Week 6	فهم سلوكيات الرجال البالغين الإجرامية ودوافعهم.
Week 7	مدى تأثير السلوك العدواني تجاه الأطفال على سلوكهم الإجرامي مستقبلًا.
Week 8	امتحان الفصل
Week 9	تطبيقات علم النفس الجنائي؟ إليك بعض التطبيقات الرئيسية* :تحليل السلوك الجنائي :يُستخدم علم النفس الجنائي لتحليل السلوك الجنائي وتقديم تقييم للمحققين حول الدوافع المحتملة والنمط السلوكي للمشتبه بهم.
Week 10	تطبيقات علم النفس الجنائي؟ إليك بعض التطبيقات الرئيسية* :تحليل السلوك الجنائي :يُستخدم علم النفس الجنائي لتحليل السلوك الجنائي وتقديم تقييم للمحققين حول الدوافع المحتملة والنمط السلوكي للمشتبه بهم.
Week 11	تطبيقات علم النفس الجنائي؟ فحص وتحليل الشهادات الجنائية، مما يساعد في فهم مدى صدق وموثوقية الشهود.
Week 12	تطبيقات علم النفس الجنائي؟ فحص وتحليل الشهادات الجنائية، مما يساعد في فهم مدى صدق وموثوقية الشهود.
Week 13	بعض مواضيع البحث في علم الجريمة
Week 14	علاقة المحقق الجنائي مع علم نفس الجنائي (تطوير الجانب المهاري للمحقق الجنائي من خلال جانب علم النفس الجنائي)
Week 15	**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	**علم النفس** الاكلينيكى التطورات المعاصرة فى الفحص والتشخيص والعلاج النفسى الأستاذة اسيا الجري الطبعة الثانية 2018	NO
Recommended Texts	**The Psychology of Criminal Conduct: Theory, Research and Practice** by Ronald Blackburn 2011	No
Websites	https://fivebooks.com/best-books/forensic-psychology-david-canter/	

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	**Inks and dyes and their warnings**			**Module Delivery**
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**FOR 36035**			
ECTS Credits	**4**			
SWL (hr/sem)	**100**			
Module Level	UGx	**Semester of Delivery**	2	
Administering Department	FORN	**College**	SC	
Module Leader	Name	**e-mail**	E-mail	
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	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	This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 1-The students will work their way through a DNA practical, making use of the learned techniques. 2-New research and techniques will also be looked at within forensic DNA analysis. 3-This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 4-The students will work their way through a DNA practical, making use of the learned techniques. 5- New research and techniques will also be looked at within forensic DNA analysis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On completion of this module, students are expected to be able to: 1. Explain the methods of construction of characters used in handwriting and signatures and identify natural and deliberate modifications. 2. Describe and analyse the composition of paper and ink. 3. Prepare and present oral and written reports appropriate for a court of law.
Indicative Contents المحتويات الإرشادية	**Indicative Module Content** ink and dyes; construction of characters, natural variation, accidental and deliberate modification. Origin and history of documents: inks, paper, impressions, erasures and obliteration. [14h] Analysis of documents using a range of techniques e.g. ESDA, chromatography, microscopy, spectroscopy. Video Spectral Comparator, comparison microscope.[14h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The aim of this Module is to provide students with the ability to critically evaluate current thinking and research in forensic dyes and ink analysis and extraction from different samples as well as to fully understand the procedures and analysis performed within a modern forensic DN laboratory.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	16.75
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	Introduction -Inks and dyes and their warnings
Week 2	History of dyes, ink and pigments
Week 3	General features of dye and dyeing
Week 4	Dyeing techniques
Week 5	Classification of dyes
Week 6	Development of synthetic dyes
Week 7	Food dyes
Week 8	Dye industry research
Week 9	pigments
Week 10	Health and environmental aspects
Week 11	Indelible-ink
Week 12	currency counterfeiting
Week 13	
Week 14	exam
Week 15	review

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	ELLEN, D., 1997. *The Scientific Examination of Documents*. Taylor and Francis.	Yes
Recommended Texts	WHITE, P., 1998. *Crime Scene to Court, The Essentials of Forensic Science*. The Royal Society of Chemistry.	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
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية

Module Title	Trace of forensic	**Module Delivery**	
Module Type	**Basic**	☒ **Theory** ☒ **Lecture** ☐ **Lab** **Tutorial** ☒ ☐ **Practical** ☐ **Seminar**	
Module Code	FOR 36032		
ECTS Credits	**4**		
SWL (hr/sem)	**100**		
Module Level	UGx	**Semester of Delivery**	2
Administering Department	FORN	**College**	SC
Module Leader		**e-mail**	
Module Leader's Acad. Title		**Module Leader's Qualification**	
Module Tutor	Name (if available)	**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	The module is directed towards critical analysis of selected rules of evidence, of particular relevance to criminal trials. It aims to provide you with an understanding of the adversarial trial structure and its impact on the content of the law of evidence, particularly in the context of the criminal trial. It also aims to familiarise you with the content of some of the key exclusionary rules; to encourage you to identify and debate current issues within the law of evidence with confidence; and to apply the legal rules and principles within a critical framework.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	The aims of the module are: • To provide you with a structure to enable you to critically examine rules of criminal evidence in England and Wales. • To enable you to understand a variety of theoretical approaches to the study of criminal evidence law and to make judgements about the ethical issues and values involved. • To instil an appreciation of the variety of issues raised by the study of criminal evidence law, and the complexity of those issues particularly in respect of the extent to which they may interrelate. • To develop your ability to understand both the variety of principles applicable to criminal evidence law, and to be able to critically assess both existing rules and proposals for change, having regard to existing knowledge and research findings. To provide you with a variety of opportunities to fulfil the above aims, and to demonstrate knowledge of relevant theoretical approaches, principles and laws and the ability to apply them to particular aspects of criminal evidence law.
Indicative Contents المحتويات الإرشادية	Each stepe required [30h] 1-This reading list is indicative - i.e. it provides an idea of texts that may be useful to you on this module, but it is not considered to be a confirmed or compulsory reading list for this module. 2- Demonstrate ability to integrate and assess information from primary and secondary legal sources using appropriate interpretative techniques. 3-This requires the use of electronic means and explanatory films, and presenting special presentations to enhance this aspect of forensic science. It also requires assigning students a number of duties, including preparing reports or a seminar in this aspect.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The strategie concern with: 1. Demonstrate a sound knowledge of the selected rules of evidence 2. Critically evaluate the selected rules of evidence effectively and independently, both as they exist and in relation to proposals for reform 2. Demonstrate ability to apply legal knowledge to a problem / case study and to suggest a conclusion supported by relevant arguments

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	15.75
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	9
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	Introduction The effects of criminal evidence
Week 2	Prosecution and define disclosure
Week 3	
Week 4	Summary justice
Week 5	Jury trial
Week 6	Burden of proof
Week 7	Examination in chief and cross-examination
Week 8	Hearsay
Week 9	Character
Week 10	Corroboration

Week 11	Sentencing and appeals from the Crown Court
Week 12	Miscarriages of justice
Week 13	
Week 14	Abuse of process, civil remedies and CCRC
Week 15	exam
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	P. McKeown and A. Keane, 'The Modern Law of Evidence' (13th edition, OUP, 2020)	Yes
Recommended Texts	Burgess, Ann Wolbert, Regehr, Cheryl, and Roberts, Albert R (2013). Victimology: Theories and Applications. Burlington, Massachusetts: Jones and Bartlett.	No
Websites	https://www.ucl.ac.uk/laws/study/llm-master-laws/modules-2019-20/criminal-process-and-human-rights-laws0137	

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

Module Information

Module Title	**Criminal insects**		**Module Delivery**	
Module Type	**Basic**		☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR36033**			
ECTS Credits	**7**			
SWL (hr/sem)	**175**			
Module Level	UGx	**Semester of Delivery**	2	
Administering Department	Forensic \FOR	**College**	SC	
Module Leader		**e-mail**		
Module Leader's Acad. Title		**Module Leader's Qualification**		
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	This module introduces students to forensic entomology, the study of insects for medicolegal issues, which has been dated back to China in the 13th century. Studying these forensically important insects is useful in estimating post-mortem intervals. Legal implications will be explored using various case studies. Students will also visit the Entomology Unit and the Forensic Laboratory in KL. Students will observe the progression of decomposition and be exposed to the different families of forensically important flies.
Module Learning Outcomes	Upon successful completion of this course, students will be able to: • Describe the application of entomology to criminal investigations • Identify insect groups (especially carrion groups) and insect rearing cycles

مخرجات التعلم للمادة الدراسية	• Demonstrate proper handling, collection and preservation of insect evidence at crime scenes • Explain scientific principles behind the use of insects in homicide investigations • Identify where an when forensic entomology is important, and show the limitations of the technique and how they can be overcome • Describe the effects of habitat on insect evidence
Indicative Contents المحتويات الإرشادية	**The student will... [6 h for each steps]** • recognize that in the field of forensic anthropology information about the victim of a crime and the nature of the crime itself is determined from unknown skeletal remains • understand that a forensic anthropologist attempts to determine the following information from unknown skeletal remains: whether the remains are human or non-human, number of individuals found, time of death, sex of individual(s), ancestry of individual(s), stature of individual(s), and cause of death • describe some of the basic skeletal differences between human and animal bones (such as ribs and upper and lower limbs) • state some of the basic skeletal differences between humans from various ancestries or races (such as Negroid, Caucasoid, Mongoloid) • identify some of the basic skeletal differences between female and male remains • perform a research study that compares the size and length of various bones in males and females

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Generally, blood and varied alternative tissues bear a laboratory analysis to see the presence of poisons and their levels within the body. However in few cases wherever the body remains undiscovered for an extended duration, then maggots are collected and brought to the laboratory for entomo-toxicological studies as a result of the advanced stage of decomposition within the body where assortment and preservation of body viscera becomes an impossible task. This entomo-toxicological studies of the maggots facilitate the assessment of poison levels within the body. Insects' species are continuously restricted to a limited region or surroundings. The body gets settled shortly once the onset of decomposition. Just in case if

	the body gets stirred by some external force, then it gets re-colonized once more relying upon the region and therefore the individual environmental issue. But, this secondary colonisation may dissent from the initial colonisation, thereby providing a clue that the body was resettled in a while. This course outline would inculcate within the students an ability to view every miniscule factor present at the spot, where a crime was conducted. In addition, they would also be able to analyse the sequence in which the insects colonize a corpse and its evidentiary value in the courtroom.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	24.25
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	Introduction for-Forensic Entomology

Week 2-3	What happens after death?Rigor mortis
Week 4-5	Estimating time of death with Forensic Entomology
Week 6-7	Finding the cause of death using forensic entomology
Week 8-9	Has the body been moved after death?
Week 10	Use of arthropods in investigation of contraband trafficking
Week 11-12	Analyzing the crime scene for entomological evidence
Week 13-14	Case histories involving forensic entomology
Week 15	exam
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1-2	Lab 1-2: collecting-and-obseration-insect
Week 3-4	Lab 3-4: determination the time of death
Week 5-6	Lab 5-6: the insect of death
Week 7-8	Lab 7-8: the effect of temperature in rearing maggots
Week 9-10	Lab 9-10: fly investigation as a function of habitat
Week 11-12	Lab 11-12: beetles enfastation of carrion
Week 13-14	Lab 13-14: ether experimental uses of insect in forensic science
Week 15	Lab 5: exam
Week16	Lab16:review before final exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**

Required Texts	Catts, E. P. & Haskell, N. H. 1990. Entomology & Death. A procedural guide. Joyce's Print Shop, Inc., Clemson, South Carolina.	no
Recommended Texts	Smith, Kenneth G. V., 1986. A manual of Forensic Entomology. The Trustees of the British Museum (Natural History). 205 pages. ISBN 0-565-00990-7	no
Websites	chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/http://www.bio-nica.info/biblioteca/Anonimo2002forensicEntomology.pdf	

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

Module Information

Module Title	**Genetic statistical analysis and databases**	**Module Delivery**
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**FOR 36034**	
ECTS Credits	**4**	
SWL (hr/sem)	**100**	

Module Level	UGx	**Semester of Delivery**	2

Administering Department	Forensic \FOR	**College**	SC
Module Leader	Firas Habeb Abdulrazzak	**e-mail**	Firas Habeb Abdulrazzak
Module Leader's Acad. Title	Prof.	**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	This module provides an introduction to multivariate analysis, with a strong emphasis on data visualization by means of multivariate graphics known as biplots. The course covers principal component analysis (PCA), multidimensional scaling (MDS), correspondence analysis (CA), canonical analysis, cluster analysis, discriminant analysis (DA) and some multivariate inference, illustrating these methods with genetic data. Some genetic datasets have a compositional nature, and basic principles of compositional data analysis like log-ratio transformations are considered. The use of multivariate methods for uncovering population substructure and cryptic relatedness is addressed.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After attending this module, participants will be able to: 1. Describe the purpose of basic multivariate statistical methods. 2. Select an appropriate multivariate method for a given data set. 3. Apply adequate transformations for a given data set. 4. Perform multivariate statistical analysis on a computer in the R environment.

	5. Visualize multivariate data by means of biplot construction. 6. Interpret biplots correctly and assess goodness-of-fit. 7. Carry out basic multivariate hypothesis tests. 8. State the peculiar nature of compositional data, and account it for in the analysis.
Indicative Contents المحتويات الإرشادية	Describe the assumptions underlying the Binomial, Multinomial, and Normal probability models.[15h] Define sensitivity, specificity and predictive values in the context of a binary screening test for a disease. Explain how the likelihood function can be used for estimation and model selection. Translate scientific questions into appropriate null and alternative hypotheses.[10h] Describe the assumptions underlying z-tests, t-tests and chi-square tests and use these tests to statistically compare two samples. Explain and interpret p-values and confidence intervals.[5h] Recognize and explain the concepts of confounding and effect modification. Explain the role of computer intensive methods (bootstrap, jackknife, permutation tests) in hypothesis testing and confidence intervals.[5h] Explain the false discovery approach to addressing the issue of multiple comparisons in hypothesis testing.[7h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The assignment will contain a number of questions for which solutions and / or written responses will be required. The number of words noted below refers to the amount of time in hours that a well-prepared student who has attended lectures and carried out an appropriate amount of independent study on the material could expect to spend on this assignment.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	67	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	16.75
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	Introduction to Genetic statistical analysis and databases
Week 2	Genetic Data
Week 3	Allele Frequencies
Week 4	Allelic Association
Week 5-6	Population Structure & Relatedness
Week 7	Notation
Week 8	Allelic Measure Predicted Values
Week 9-10	Genotypic Measure Predicted Values
Week 11-12	Estimates for Individuals
Week 13-14	Estimates for Populations
Week 15	exam
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	The Fundamentals of Modern Statistical Genetics by Nan M. Laird and Christoph Lange, Springer-Verlag, New York.	no
Recommended Texts	https://si.biostat.washington.edu/sites/default/files/modules/PopGenData2018.pdf	no
Websites	https://si.biostat.washington.edu/.pdf	

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
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	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**Introduction to Toxins and Drugs**	**Module Delivery**
Module Type	**Basic**	☒ **Theory**

Module Code	**FOR 36131**	☐ **Lecture** ☒ **Lab** **Tutorial** ☒ ☐ **Practical** ☐ **Seminar**
ECTS Credits	**7**	
SWL (hr/sem)	**175**	

Module Level	UGx	**Semester of Delivery**	2
Administering Department	FORN	**College**	SC
Module Leader	Mohammad Jawad Khazal	**e-mail**	pcr2000@kus.edu.iq
Module Leader's Acad. Title	Asst.prof.	**Module Leader's Qualification**	Ph.D.
Module Tutor	Name (if available)	**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-While all toxicology addresses the adverse effects that agents have on living organisms, clinical and medical toxicology play unique roles not often encountered in traditional toxicology practice or research. 2-The subset of toxicology focus on the immediate needs of patients suspected of being poisoned. 3-The toxicology require extensive knowledge of diseases and etiology as well as a thorough understanding of the effects of potential poisons, both of which are commonly used to make diagnoses.

	4- medical toxicologists must consider three points—the substance involved, the toxic response, and the mechanism by which it occurs—in order to determine the best treatment options for each patient. 5- introduce participants to the basics of clinical and medical toxicology along with new and old tools that may be used by the clinical toxicologist.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand and apply pharmacokinetic and pharmacodynamic principles that impact administration, absorption, distribution, metabolism, elimination, efficacy, potency, effectiveness and biological activity of drugs and toxins. 2. Understand and describe how the liver's cytochrome system works, including Biotransformation Phases I and II, and how drug-drug and drug-herb interactions affect this detoxification system. 3. Understand the therapeutic and adverse effects of selected drugs, supplements, and environmental toxins. 4. Understand and identify health conditions linked to selected toxic exposures from food, lifestyle, environment, workplace and home. 5. Understand the role of toxicology in the development and progression of disease and to characterize its impact on patient response to chiropractic care.
Indicative Contents المحتويات الإرشادية	Principles of Toxicology (20 hrs) Classification of toxic agents; characteristics of exposure; evaluation of toxicity: LD50 and TD50; spectrum of undesirable effects; interaction and tolerance; biotransformation and mechanisms of toxicity; use and interpretation of toxicity data. Natural Toxins in Food (15 hrs) Determination of toxicants in foods; classification and toxicity of natural occurring toxins; natural toxins in animal foodstuffs (meat and seafood); natural toxins in plant foodstuffs; fungal toxins occurring in foods (mycotoxins); micro-organisms and food; sites of action and their toxicity mechanisms. Food Allergies and Sensitivities (15 hrs) Natural sources and chemistry of food allergens; true/untrue food allergies; handle of food allergies; food sensitivities (anaphylactoid reactions, metabolic food disorders and idiosyncratic reactions); (9h)issues related to sulfites in foods. Environmental Contaminants and Drug Residues in Food (15 hrs) Common environmental contaminants (e.g. heavy metals) and drugs residues (e.g. pesticides) in foods; their health impacts and risk assessment; abusive use of veterinary drugs (e.g. malachite green in fish) and other contaminants in food. Food Additives and Toxicants formed during Food Processing (15 hrs) Common food additives (e.g. coloring) and their safety issues; process-induced food toxicants (e.g. acrylamine) and their health concerns.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم

Strategies	Interactive lectures and guided readings are used to facilitate communication between lecturers and students, and also to enhance students in comprehending the taught topics and key concepts. During each lecture, in-class activities (case studies and group discussion, etc.) are conducted to stimulate students' interest and promote their critical thinking in learning. Tutorials are designed to assist students to re-think the previous learning process, and to challenge students to raise questions on the taught topics. The purpose is not only to consolidate their learned concepts but also to stimulate their further interest in the subject and to develop their problem-solving abilities. The continuous assessment is based on student's performance on quizzes, in-class learning activities and a case study report. Examination is focused on analytical and problem solving skills.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	97	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	24.25
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	Principle of toxicology, History of toxicology
Week 2	Classification of toxic agents
Week 3	Drug pharmacokinetics and metabolism
Week 4	Molecular toxicology and toxicogenomic
Week 5	immunotoxicology
Week 6	Chemical toxicology
Week 7	Exam
Week 8	Microbial toxicology
Week 9	Food toxicology
Week 10	Ecotoxicology
Week 11	Nano toxicology
Week 12	Clinical toxicology (neurotoxicology, cardiovascular toxicology)
Week 13	Clinical toxicology (toxicology of the intestine, toxicology of the skin)
Week 14	Factors in flouncing the actions of a poison agents in the body
Week 15	Human analysis of drugs
Week 16	**Preparatory week before the final Exam**

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية		
Module Title	**Tissue, hair and fibers science**	**Module Delivery**
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial**
Module Code	**FOR 36036**	
ECTS Credits	**4**	

SWL (hr/sem)	**100**	☐ **Practical** ☐ **Seminar**	
Module Level	UGx	**Semester of Delivery**	2
Administering Department	FORN	**College**	SC
Module Leader	Dr. Genan Adnan Abdullatef Al-Bairuty	**e-mail**	galbairuty@gmail.com or galbairuty@kus.edu.iq
Module Leader's Acad. Title	Asst. Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	Name (if available)	**e-mail**	
Peer Reviewer Name		**e-mail**	
Scientific Committee Approval Date	22/1/2026	**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 ability to perform a forensic microscopical tissue, hair, and fiber comparison is dependent on a number of factors. These factors include the following: 1. Whether an appropriate known sample is representative. 2. The range of features exhibited by the known material. 3. The condition of the questioned material. 4. The training and experience of the material examiner. 5. The usage of the appropriate equipment and methodology.
Module Learning Outcomes	After studying this module, you shall be able to know • The tissues and fibers types (epithelial, glandular, connective, muscular and nervous tissues) • The skin structure • The nail and nail structure

مخرجات التعلم للمادة الدراسية	• The Hair and hair structure. • Hair types
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part 1 – Introduction (histology, cells, tissues, organ, organ system, tissue components and cell differentiation) [7h] 2- Epithelial tissues and glandular epithelium [7h] 3-. Connective Tissues [7h] 4-. Muscular tissues and nervous tissues [7h] 5-. The integumentary system (skin, nail and hair) [7h] 6-. Hair types [7h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	How is scientific evidence gathered from a crime scene? How is it analyzed and used in investigation? How is it interpreted and presented in court? This course prepares you for a career as a forensic scientist. Case studies, evidence interpretation, fieldwork and laboratory training cover all aspects of investigating criminal offences. These include crime scene processing, forensic archaeology, drugs, toxicology, DNA profiling, body fluids, entomology, fibers, fire investigation and ballistics. You'll also have an introduction to criminal law, which includes cross-examination in a Crown Court setting. Specialist topics include blood pattern analysis (BPA), gunshot residue detection, counterfeits and forgeries, and the analysis of trace evidence. In addition, this course also provides additional industry recognized certificates in BPA, forensic toxicology and DNA profiling at no extra cost

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	12
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	13

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	Introduction of Histology
Week 2	Epithetical tissue types
Week 3	Glandular epithelium
Week 4	Connective tissue types
Week 5	Muscular tissue types
Week 6	Nervous tissue types
Week 7	Integumentary system
Week 8	Nails and hair structure
Week 9-10	Hair types, pigments
Week 11-12	Hair Forensics
Week 13-14	Techniques used in the forensic analysis of hair and nails
Week 15	exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to the tools & techniques involving analysis of Hair & fiber in forensic
Week 2	Tissue Processing
Week 3	Epithetical tissue types
Week 4	Glandular epithelium
Week 5	Connective tissue types
Week 6	exam
Week 7	Muscular tissue types
Week 7	Nervous tissue types
Week 8	Nail structure
Week 9	Hair structure
Week 10	Fibers types
Week 15	**exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Forensic Examination of Fibres (International Forensic Science and Investigation) 3rd Edition**	Yes
Recommended Texts	**World of Forensic Science** **https://books.google.iq/books/about/World_of_Forensic_Science.html?id=Mo5YAAAAYAAJ&redir_esc=y**	No
Websites	https://accesspharmacy.mhmedical.com/content.aspx?bookid=958&sectionid=53483740	

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	**Identify definition tools**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 47038**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	th7U		**Semester of Delivery**	1	
Administering Department	FORN		**College**	SC	
Module Leader	FIRAS HABEB ABDULRAZZAK		**e-mail**	Firas_habeeb2000@kus.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Firas habeb abdulrazzak		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	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	Forensic data, such as fingerprints and DNA, are generally unique and belong to only one person, and are thus able to confirm a person's identity and presence at a crime scene. And most importantly, it helps prove the innocence of the suspects. Data from forensic evidence can also be used internationally to link a series of transnational crimes, for example by quickly checking fingerprints when a suspect crosses a border between two countries. This data also helps us identify victims in the aftermath of a major disaster. Face recognition has become a rapidly evolving biometric science that provides us with a large number of new opportunities to identify suspects and solve crimes. At INTERPOL we manage criminal databases that contain fingerprints, DNA profiles and facial images provided by member countries, allowing police around the world to link criminals to crime scenes. We also train frontline staff to evaluate, preserve and share evidence in line with approved best practices.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module the student should be able to: 1. Compare and contrast past, present and future techniques used in DNA profiling. 2. Have a critical understanding of STR and sexing PCR systems, which are used by many countries including the UK to generate sizeable DNA profiles using coloured dye and laser technology. 3. Assess the benefits and pitfalls of using DNA profiling data relating to crime scenes, criminal investigations and identification of human remains.

	4. Distinguish between the specialist techniques such as mitochondrial DNA sequence analysis, Y-STR analysis and the scientific basis of familial database searching. 5. Appraise new developments & ongoing research areas e.g. linking physical characteristics to DNA, detection of forensically important SNPs or identify body fluids using nucleic acid analysis.
Indicative Contents المحتويات الإرشادية	This part include the requirement below: [34h] 1-There are a few materials that you will need to complete your experiments that are not provided in your kits such as fresh produce or water. Review the Time and Materials section (after these tips) for a list of these items. 2- The Time and Materials section also includes an estimate of the amount of time it will take a student to complete each lab to help you plan to set aside time to complete them. Some experiments may require a few days to a week for observation, so don't wait until the last minute to begin experiments. 3- Arriving at a crime scene is like reading the last page of a story. You have to work your way back to the beginning in order to determine what happened, when it happened, to whom, and why. Figuring out what happened involves crime scene investigation and scientific analysis, more commonly known as forensic science or criminalistics. 4-trainng to be able to use : [25h] Collect and process evidence by utilizing a chain of custody form and collection methods that prevent contamination • Document a crime scene using sketches, diagrams, and photomacrographic scales • Identify the parts and demonstrate how to use a compound light microscope In addition to: [30h] there are other types of investigators that have an important role at a crime scene. Investigators may include: • detectives (interview witnesses and follow leads) • medics (assist injured individuals) • medical examiners or death investigators (determine preliminary cause of death if a crime involves a death) • photographers (document a crime scene using cameras or other recording devices).

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The 'tool' definition is useful for two related reasons. First, the definition may encourage investigators to develop their biological system for experimental analysis of a specific disorder, which was not considered previously because the system was not an obvious model. Second, the tool definition allows an honest and rigorous assessment of both the useful characteristics and the limitations of an experimental system in studying a human disorder. Together, the above points are relevant for justifying grant applications pertaining to translational research, in which the applicability of an animal-based or other biological system is crucial. On the one hand, the tool definition allows the applicant to suggest that a particular system is useful for addressing the etiology or treatment of a human disorder without feeling the need to claim that the system recapitulates the disorder itself.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75
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.	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	Introduction -identify definitions tools
Week 2	TECHNOLOGIES FOR MODERN FORENSIC SCIENCES
Week 3	
Week 4	Detection and Identification of Blood stains
Week 5	Determination of Species of Origin
Week 6	Blood Group Systems
Week 7	Techniques of Determination of Blood groups of Blood Stains
Week 8	Detection of Seminal and other body fluids and their Blood Grouping, Red cells Enzymes, Serum Proteins of forensic significance
Week 9-10	Forensic Analysis and Interpretation of Tool Marks
Week 11	Scientific Methods and Tools Used In Forensic Examination and Investigation
Week 12	
Week 12	Types of tool marks comparison
Week 13	Databases of tool marks
Week 14	
Week 15	exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: safety of work
Week 2	Lab 2: identification of blood
Week 3	Lab 3: identification of DNA
Week 4	Lab 4: identification of RNA
Week 5	Lab 5: identification of boons
Week 6	Lab 6: identification papers and documents

Week 7	Lab 7: conventional polymerase chain reaction
Week 8	Lab 8: identification of trace evidences
Week 9-10	Lab9: quantitative real time PCR
Week 11-12	Lab 10: identification of different materials by microscope
Week 13-14	Lab 11: using different documents of light to identification evidences
	Lab 15: exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Staff skill requirements and equipment recommendations for forensic science laboratories	Yes
Recommended Texts	**Forensic Analysis and Interpretation of Tool Marks** **https://www.intechopen.com/chapters/77222**	No
Websites	https://www.nap.edu/read/13163/chapter/5	

Grading Scheme

مخطط الدرجات

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

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Bioinformatics**			**Module Delivery**	
Module Type	**basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR47039**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UG›		**Semester of Delivery**	1	
Administering Department	FORN		**College**	SC	
Module Leader	Name		**e-mail**	E-mail	
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	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	This module is designed to provides an introduction to the principles and practical approaches of bioinformatics as a modern tool in forensic science for data understanding, investigation and research applied to genes and proteins. 1- An integrated lecture/lab structure and small-scale projects will declare the modern developments in genomics and proteomics. 2- Major topics include: Genomic and biomolecular bioinformatic resources, Genome informatics, Advances in sequencing technologies, Structural informatics, and Transcriptomics, will be discussed. 3- Computational tools, techniques and best practices that foster reproducible bioinformatics research will also be introduced. 4- Demonstration of how Bioinformatics will affect how forensic statistics will address hypothesis formulation on DNA samples, deciding on minimal population sample sizes when studying populations of similar units of evidence and determining the statistical significance of the outcome of analysis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the end of the course, students will: 1. Understand how bioinformatics is related to molecular biology and utilized in forensic evidence analysis. 2. Gain more knowledge about DNA, RNA and protein sequences and structures. 3. Learn the current genome sequencing techniques. 4. Gain knowledge in search sequence databases. 5. Be able to perform sequences alignments. 6. Learn how to interpretate sequencing analysis results. 7. Be able to predict genes. 8. Be able to perform phylogenetic analysis. 9. Design primers. 10. Be able to analyze RNA and predict protein structures proteins docking.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1- Introduction to Bioinformatics and Key Online Bioinformatics Resources: NCBI & EBI Biology is an information science, History of Bioinformatics, Types of data, Application areas: Introduction to upcoming segments, NCBI & EBI

	resources for the molecular domain of bioinformatics, Focus on GenBank, UniProt, Entrez and Gene Ontology. 2 - Sequence Alignment, DNA and Protein Database Searching Homology, Sequence similarity, Local and global alignment, Database searching with BLAST. 3- Genome Informatics and High Throughput Sequencing Searching genes and gene functions, Genome databases, Variation in the Genome, High throughput sequencing technologies, biological applications, bioinformatics analysis methods. 4 -sequence file formats, and data saving Describe how nucleotide and protein sequence and structure data are represented (FASTA, FASTQ, GenBank, UniProt, PDB). 5- Proteomics and the Transcriptome Processing and extracting biological information from proteomic and transcriptomic datasets, Analysis of RNA-Seq data, Differential expression tests, Avoiding P-value misuse, Hands-on analysis of RNA-Seq data. 6- Structure Based Drug Discovery and Biomolecular Simulations Small molecule docking methods, Protein motion and conformational variants, Bioinformatics in drug discovery.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**Bioinformatics can be used in forensic science to analyze DNA samples and identify suspects. It can also be used to analyze other types of evidence such as fingerprints and blood samples. Bioinformatics courses can provide students with the skills needed to work in forensic science labs and analyze evidence using bioinformatics tools.**

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75
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.	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	Review of molecular biology
Week 2	Gene structure
Week 3	Introduction to bioinformatics
Week 4	Genome sequencing methods
Week 5	Sequences database
Week 6	Sequence alignment
Week 7	Global alignment & local alignment

Week 8	Genetic distances; phylogenetic tree
Week 9	Character based phylogenetic tree
Week 10	Determination of consensus sequences
Week 11	Gene prediction & open reading frame (ORF)
Week 12	Conversion of DNA to RNA; alignment of mRNA
Week 13	Protein structure and function
Week 14	Protein structure and function (continued)
Week 15	Protein structure databases

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to DNA databases
Week 2	Lab 2: Purification of DNA
Week 3	Lab 3: Genetic analyzer, standard technique & troubleshooting
Week 4	Lab 4: Gene bank; genome browsers
Week 5	Lab 5: Sequences databases; sequence formats
Week 6	Lab 6: Retrieve sequences from different databases
Week 7	Lab 7: Comparison of sequences using BLAST
Week 8	Lab 8: Interpretation of BLAST
Week 9	Lab 9: Sequence conversion from DNA to mRNA and verse to versa
Week10	Lab 10: Distance based phylogenetic tree construction
Week 11	Lab 11: Character based phylogenetic tree construction
Week 12	Lab 12: Protein databases
Week13	Lab 13: Protein structure prediction
Week14	Lab 14: Protein structure prediction (continued)
Week15	Lab15 : Molecular docking

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	GLICK, B.R., PASTERNAK, J.J. and PATTEN, C.L. Molecular Biotechnology. Current Edition. American Society for Microbiology.	Yes
Recommended Texts	DALE, J.W. adn VON SCHANTZ, M. From Genes to Genomes. Concepts and applications of DNA Technology. Current Edition. Wiley-Blackwell.s	No
Websites	Basic bioinformatics concepts to learn for beginners — Bioinformatics Review	

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	**Identity Definition Tool**	**Module Delivery**
Module Type	**basic**	☒ **Theory** ☐ **Lecture** ☒ **Lab**
Module Code	**FOR 47038**	

ECTS Credits	5	☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
SWL (hr/sem)	125		
Module Level	UG›	**Semester of Delivery**	1
Administering Department	FORN	**College**	SC
Module Leader	Bara Qasiem Mohamed	**e-mail**	E-mail
Module Leader's Acad. Title	Lecture	**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	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	The program aims to: 1-Provide future criminologist with strong interdisciplinary foundations to be able to respond appropriately and ethically in challenging "real-world" situations as they prepare to further education; and 2.Produce graduates equipped with leadership, skills and high sense of integrity,accountability, and responsibility.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After completing the course, the student must be able to: 1. Relate the principles of fingerprints to personal identification and criminal investigation; 2. Identify the different personal identification techniques applied to investigation and detection of crimes and criminal justice

	3. Demonstrate competence in collecting questioned and standard fingerprints as evidence in criminal investigation and solve crimes with the aid of different personal identification techniques, specifically, Fingerprint Identification.
Indicative Contents المحتويات الإرشادية	The indicative continents include : 1-The course covers the fundamentals of personal identification and the development of scientific methods of identifying individuals both living and dead including its relevance to criminal investigation. [20h] 2-The Henry-Galton system is given emphasis in relation with the identification of individuals through fingerprints. [15h] 3-The principles, characteristics, and different patterns of fingerprints are also discussed in the course. [20h] 4-Emphasis is also given on the techniques of fingerprinting and developing latent prints for investigative purposes. [20h] 5-focuses on fingerprint recording, developing of latent prints and identification and classification of fingerprints for purposes of court presentation.[21h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	After students expend 3 years in forensic departments the processed of the fingerprint evidence, hypothetically run the prints in new a fictitious. Give each crime investigator (student) the abilities to exam many types of finger print to make the investigator able to give new experiments with higher level which make the efficiency of workers in this section in high level. All of that required more and more efforts to provide the student many cases with different conditions.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75
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.	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	Introduction to Science of Fingerprint
Week 2	Fingerprint classification\examination
Week 3	Identity Definition classification
Week 4	Identification and Fingerprint with forensic science
Week 5-6	Identity Tools\fingerprint biometrics
Week 7-8	Fingerprint Development Techniques
Week 9-10	Identification and Comparison of Fingerprint
Week 11-12	Computer Aided Technique for identification, Analysis and Comparison of Fingerprint
Week 13-14	Aplications in forensic science
Week 15	Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered

Week 1	Lab : classify fingerprint patterns
Week 2	Lab : investigate collecting inked fingerprints
Week 3-4	Lab : explore dusting powders/techniques and lifting techniques
Week 5-6	Lab : identify ridge characteristics
Week 7-8	Lab : understand fingerprint terminology
Week 9-10	Lab : learn proper dusting/lifting procedures investigate chemical techniques
Week 11-12	Lab : investigate and solve a hypothetical crime scenario
Week 13-14	Lab : Chemical Development of Latent Prints
Week15	Lab : exam

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Biometric Security Systems: A Guide to the Devices, Fingerprint Scanners and Facial Recognition Access Control. (August 2020). IFSEC Global.	Yes
Recommended Texts	DFBA Overview. (2021). Defense Forensics & Biometrics Agency.	No
Websites	Basic bioinformatics concepts to learn for beginners — Bioinformatics Review	

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	**Environmental Toxins and Industry Pollutions**			**Module Delivery**	
Module Type	**Suport**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 47041**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGx		**Semester of Delivery**	1	
Administering Department	FOR		**College**	SC	
Module Leader	Name		**e-mail**	E-mail	
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	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	The main aim of this course is to provide a sound understanding of pollution and their causes to enable a well-informed strategy to controlling them. The aim of the course will be achieved by: • introducing you to pollution control practices right from the local approach to the use of modern techniques • inderstanding the concept of pollution • classifying the various forms of pollution • understanding the methods of controlling pollution • explaining different environmental media • providing you the basic knowledge of living with pollution free environment.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the end of this course, the student in forensic department should be able to: • define and explain the concept of pollution • identify different types of pollutants • explain varying forms of pollution • describe sources of pollution • state the different environmental media • discuss the impact of pollutants on the environment and human health • explain the strategies for the control of pollution.
Indicative Contents المحتويات الإرشادية	The indicative contents required: -1 understanding things or items or media (water, food, soil, Air) are found in their natural, pure and pristine forms as expected in both quality and quantity.[20h] -2 The phenomena of pollution occur in our environment every day as a result of our daily endeavours/activities either deliberately or by share coincidence. [15h] -3 At a micro level we pollute the water we reserved for drinking even at home by pouring some ink or paint or saw dust into the reservoir thereby making it noticeably changed or polluted and unattractive for drinking.[20h] -4 larger level a stream can be polluted by emptying large human excreta into it, Often things or items or media (water, food, soil, Air) are found in their natural, pure and pristine forms as expected in both quality and quantity. [18h]

	When an undesirable substance which normally is not an aspect of that originalitem/mediais found in such a noticeable concentration as to affect the value of such item/media, pollution has taken place. [16h] -5

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	strategy for working through the course: 1. Read this course guide thoroughly 2. Organise a study schedule. Refer to the _course content', for more details. 3. Once you have created your own study schedule, do everything you can to stick to it. The major reason that students fail is that they get behind with their course work. If your get into difficulties with your schedule, please let your tutor know before it is too late. 4. Turn to unit 1 and read the introduction and the objectives for the unit. 5. Work through the unit. The content of the unit itself has been arranged to provide a sequence for student to follow.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75
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.	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	Introduction - enviromental toxins and distrial pollution
Week 2	Definition and Concept of Pollution
Week 3	Types and Classification of Pollutants and Contaminants
Week 4-5	Environmental Media 1 (Air) Environmental Media 2 (Water) Environmental Media 3 (Soil) Environmental Media 4 (Food)
Week 6	Anthropogenic Sources of Pollution
Week 7	Monitoring of Pollutants and Contaminants Assessment of Pollutants
Week 8-9	Impact of Pollutants on Human Health Impact of Pollutants on the Ecosystem Economic Impact of Pollution
Week 10	Industrial Methods of Pollution Control
Week 11	Waste Management Control Measures
Week 12	
Week 13-14	Pollution and forensic science
Week 15	exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safety and security

Week 2	Lab 2: how to collect sample (sampling science)
Week 3	Lab 3: identification of pollution in air
Week 4-5	Lab 4-5: identification of pollution in water
Week 6-7	Lab 6-7: identification of pollution in soil
Week 8-9	Lab 8-: determination of heavy metals in environments
Week -10	Lab 10-11: determination the effect of exposure for pollutant for human body.
Week 11-12	Lab 11-12: identification the Excretion of Toxins
Week 13-14	Lab13-14: identification Types of Exposure
Week 15	exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	https://nou.edu.ng/coursewarecontent/EHS211%20.pdf POLLUTION CONTROL	Yes
Recommended Texts	https://www.atsdr.cdc.gov/training/toxmanual/modules/2/lecturenotes.html#anchor_1556579661564	yes
Websites	https://www.epa.gov/expobox/exposure-assessment-tools-media-air	

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	**Weapons and machine artifacts**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**FOR 47042**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGx		**Semester of Delivery**	1st	
Administering Department	FOR		**College**	SC	
Module Leader	Dr. Burak Yahya Kadem		**e-mail**	dr.burak.kadem@kus.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Dr. Burak Yahya Kadem		**e-mail**	dr.burak.kadem@kus.edu.iq	
Peer Reviewer Name	Name		**e-mail**	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. Understand the fundamental principles of forensic examination of weapons, tools, and machine-related artifacts. 2. Identify and evaluate forensic marks and characteristics produced by weapons and tools, including class, subclass, and individual characteristics. 3. Apply appropriate examination and comparison techniques such as microscopy, photography, measurement, and digital documentation. 4. Interpret and report forensic findings scientifically and objectively, while considering evidence integrity, limitations, and professional standards.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	.1 Identify and classify weapons, tools, and machine-related artifacts based on their forensic characteristics. .2 Examine and analyze toolmarks and other mechanical marks using appropriate forensic examination and comparison techniques. .3 Compare and interpret forensic evidence using microscopy, photography, measurement, and digital documentation methods. .4 Evaluate and report forensic findings scientifically and objectively, considering evidence integrity, limitations, and professional standards.
Indicative Contents المحتويات الإرشادية	

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**1. Lectures and Interactive Presentations** **2. Problem-Solving Sessions** **3. Group Discussions and Peer Learning** **4. Self-Directed Learning (SDL)** **5. Workshops and Seminars** **6. Case study**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem)	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75

الحمل الدراسي غير المنتظم للطالب خلال الفصل			
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	5	10% (10 Marks)	2, 4, 7, 10, 13	
	Assignments	5	10% (10 Marks)	3, 5, 7, 9, 12	
	Projects / Lab.	5	10% (10 Marks)	3, 6, 9	
	Report	2	10% (10 Marks)	8	
Summative assessment	Midterm Exam	1.5	10% (10 Marks)	7	
	Final Exam	3 h	50%	16	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Tools, Criminal Evidence, and Toolmarks
Week 2	Firearms: Classification and Components
Week 3	Ammunition, Components, and Forensic Evidence
Week 4	Internal Ballistics
Week 5	External Ballistics
Week 6	Mechanical and Individual Characteristics of Firearm Marks
Week 7	Midterm EXAM
Week 8	Microscopic Examination and Forensic Comparison
Week 9	Gunshot Residue and Estimation of Firing Distance
Week 10	Toolmarks and Machine/Tool Evidence
Week 11	Comparison of Toolmarks and Fractures
Week 12	Documentation and Digital Procedures for Forensic Evidence
Week 13	Interpretation of Results, Reporting, and Expert Testimony

Week 14	General review
Week 15	2nd EXAM

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Lectures prepared by the Module leader	Yes
Recommended Texts		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
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	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
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information

معلومات المادة الدراسية					
Module Title	**Cybercrime**			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 47043**				
ECTS Credits	4				
SWL (hr/sem)	100				
Module Level	UGx		**Semester of Delivery**	1	
Administering Department	FORN		**College**	SC	
Module Leader	Name		**e-mail**	E-mail	
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	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	his module has two main aims. The first is to provide you with a broad understanding of the various forms T of cybercrime; such as phishing scams, malware attacks, intellectual property theft, online sex crimes, disinformation, cyber-terrorism, and cyber-war. Developing your understanding of these different types of crime will also involve you gaining an understanding of how the internet works, the current and ever-changing legal frameworks concerning such online behaviours, and the different forms of cyber-criminals that exist and the different types of targets that their acts cause issues for, such as individuals, organisations, and nation states.

	The second involves introducing you to some of the basic techniques used by both law enforcement agencies and the private sector in order to detect, investigate and prevent cyber-attacks. This will involve you learning about investigative tools pertaining to areas such as domain registration data, IP address data, and geolocation. This aspect of the module will be taught to you via practical lab-based sessions which will teach you some of the open source tools that are used by investigators in order to demonstrate how threat actors can be identified and their webs of connected holdings can be mapped for defensive (or offensive) purposes, and how these techniques have been used in high-profile cybercrime cases.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Demonstrate a good knowledge of cybercrime and related behaviours, their various forms, their wider implications, and methods used to investigate them 2. Develop a high level of confidence in the use of basic investigative tools and critically assess the data gained from them 3. Demonstrate a high level of computer literacy so as to understand the ramifications of cybercriminal behaviours Critically reflect on the role and impact of cybercrime within the wider context of crime more generally 5. Demonstrate an understanding of the evolutionary arms race between new methods for committing crime and crime detection and investigation methods 6. Critically evaluate the impact on theoretical criminological models of increased, and diversified, internet-crimes and subsequent changes to law enforcement approaches 7. Demonstrate ability to work as part of a group on a joint project 8. Demonstrate written analytical skills by producing an essay and technical report to a deadline 9. Demonstrate the ability to present group-based work in a professional manner
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. What are cybercrimes and what do we know about them? How do we understand them what is the role of media? Understanding crime in the information age. How have networked technologies changed opportunities for criminal activity and alternative modes of communication that transgress convention? The transformation of criminal and wider social activities in cyberspace. .1 What are cybercrimes? i) crimes against the machine (e.g., Hacking) ii) crimes using the machine (e.g., frauds) iii) crimes in the machine (e.g. pornography and hate crime). [6h] .2 What is the relationship between crime, deviance, transgression and creativity?[6h] .3 How is criminal activity continuing to change in the information age? The automation of offender-victim engagement.[6h] .4 How is cyberspace policed and by whom? Policing online behaviour to maintain order and law on the cyberbeat and the wider political and cultural sense of order.[6h] .5 How are cybercrimes to be regulated and prevented at the same time as encouraging creativity by new and effective means of distributed communications?[6h] .6 Indicative structure and content: .7 Change, how much, how do we know? Affordances, problems and subfields, old wine in new bottles and Walls transformation test[15h] .8 Hate, terrorism and hate crime, bullying, stalking and trolling related crimes[10h] .9 Obscenity, pornography, violent video games and abuse images[13h] .10 Corruptions of citizenship; privacy, surveillance and hacking.[10h] .11 Appropriation; fraud, extortion, identity theft and intellectual property crimes.[10h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The strategies of learning will depend and used to promote class discussions during the lecture and that include. **.1** What is cybercrime? **.2** Why is cybercrime scientifically studied? **.3** Where can information about cybercrime trends be obtained? Please evaluate these sources.

	4. What are the legal challenges relating to cybercrime and cybercrime prevention? 5. What are the ethical challenges relating to cybercrime and cybercrime prevention? 6. What are the technical challenges relating to cybercrime and cybercrime prevention? 7. What are the operational challenges relating to cybercrime and cybercrime prevention?

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	12
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	13
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	Review cybercrimes
Week 2-3	Cybercrimes classification
Week 4	networked technologies and cybercrimes
Week 5	criminal activity and alternative modes of communication
Week 6-7	The transformation of criminal and wider social activities in cyberspace
Week 8	the relationship between crime, deviance, transgression and creativity
Week 9	criminal activity continuing and information age\The automation of offender-victim engagement
Week 10	exam
Week 11	cyberbeat and the wider political and cultural sense of order
Week 12	cybercrimes and prevented with creativity and effective means of distributed communications
Week 13	Affordances, problems and subfields
Week 14	Corruptions of citizenship
Week 15	Appropriation; fraud, extortion, identity theft and intellectual property crimes

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	American Marketing Association. (2018). The Murky Ethics of Data Gathering in a Post-Cambridge Analytica World. The Medium, 31 May 2018	Yes
Recommended Texts	Europol. (2018). Internet Organised Crime Threat Assessment 2018.	No
Websites	https://www.unodc.org/e4j/zh/cybercrime/module-6/key-issues/handling-of-digital-evidence.html	

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
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	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Principles of Medical jurisprudence**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR48043**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGx		**Semester of Delivery**	2	
Administering Department	FOR		**College**	SC	
Module Leader	Name		**e-mail**	E-mail	
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	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	This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 1-The students will work their way through a DNA practical, making use of the learned techniques. 2-New research and techniques will also be looked at within forensic DNA analysis. 3-This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 4-The students will work their way through a DNA practical, making use of the learned techniques. 5- New research and techniques will also be looked at within forensic DNA analysis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	.5 On completion of this course, the student will be able to: .6 By the end of this course students will have acquired a sound knowledge and understanding of foundational areas of medical law as they operate within the United Kingdom and, where appropriate, in an international context. This will include a critical awareness of contemporary issues in medical law and an ability to analyse these issues, drawing on their knowledge of the discipline as a whole .7 Students will have acquired a deep understanding of the range of ethical principles which are brought to bear on medical law equally by health care professionals, the courts and legislatures. They will be able to apply these principles critically to existing laws and proposals for reform with respect to the management and regulation of modern medicine .8 Students will be able to apply critical evaluation to existing legal approaches to arrange of topics, including the regulation of the dr/patient relationship, the role of the modern state in the delivery of health care, the impact of

	human rights on care and treatment decisions, and the current provisions that apply to the regulation of medical research involving human participants. 9. Through problem-based enquiry and group discussion, students will develop a range of analytical and communication skills related to problem-deconstruction, the application of ethically-informed thinking, the construction of arguments and the coherent and convincing defence of their own positions on the range of medical dilemmas addressed in the course. 10. Through independent working, research and analysis, as evidence by appropriate assessment methods, students will be able to demonstrate initiative and the ability to work autonomously and take responsibility for their own work. 11. Interpret histo-pathological, microbiological, radiological, chemical analysis, DNA profile and other investigative reports for medico-legal purposes.
Indicative Contents المحتويات الإرشادية	This is a course intend to: -1 provide a survey of the main issues in this field, considering both the legal and the ethical dimensions as well as the national and international contexts.[6h] -2 The course is broadly divided into four components which build on each other to provide a comprehensive and foundational treatment of the discipline. Part 1: covers the fundamentals of medical law, being core principles or areas that inform development in other parts of the field. Examples include ethics, human rights, consent and negligence. [20] Part 2 deals with reproduction and forensic, including issues of liability for sub-standard ante-natal care.[20h] Part 3 engages contemporary issues in medical law, such as areas which impact on public interest including mental health and public health.[20h] Part 4 deals with end of life issues and also includes consideration of the perennial question of allocation of scarce resources. Interpret histo-pathological, microbiological, radiological, chemical analysis, DNA profile and other investigative reports for medico-legal purposes.[20h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The aim of this Module is to provide students with the ability to critically evaluate current thinking and research in forensic DNA analysis and extraction from different samples as well as to fully understand the procedures and analysis performed within a modern forensic DNA laboratory.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	19.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	11.75
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.	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	Introduction -Principles of Medical jurisprudence
Week 2	ethics & human rights in medical law
Week 3	Consent & refusal
Week 4	Negligence
Week 5	Confidentiality and genetics
Week 6	Control of fertility
Week 7	Artificial reproduction
Week 8	Futility Public health\cocaine's
Week 9	Medico legal aspect of Death s

Week 10	Euthanasia and assisted dying and sudden death
Week 11	
Week 12	Injuries: classification, forms and medico legal aspects
Week 13	Research and experimentation
Week 14	
Week 15	exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safety and security
Week 2	Lab 2: identification of Blunt force Trauma : Abrasions, Contusions and Lacerations
Week 3	Lab 3: identification of Sharp force Trauma : Incised, Stab and Chop wounds
Week 4	Lab 4: Physical methods of Torture and their identification
Week 5	Lab 5: identification of Firearm injuries and Explosive injuries and Basics of Firearms
Week 6	Lab 6: PM examination of Firearm injury deaths.
Week 7	Lab 7: Removal and collection of Bullets, Pellets etc.
Week 8	Lab 8: identification of Medico-legal aspect of injury/hurt, simple and grievous hurts,
Week 9-10	Lab9-10: Medico-legal aspect of injury/hurt, simple and grievous hurts, murder, Antemortem & Postmortem Wounds, Age of the injury, cause of death
Week 11	Lab 11: Causative Weapon and appearance of Suicidal, Accidental and Homicidal
Week 12	Lab 12: Regional injuries: Head injury, mechanism, Injury to Scalp, Skull, Brain and Spinal Injuries
Week 13-14	Lab 13 -14: Thermal injuries: Injuries due to heat and cold, Frostbite, Burns, Scalds and Bride burning
Week 15	exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	https://www.massmed.org/About/MMS-Leadership/History/Medical-Jurisprudence-(pdf)/	Yes

Recommended Texts	DALE, J.W. adn VON SCHANTZ, M. From Genes to Genomes. Concepts and applications of DNA Technology. Current Edition. Wiley-Blackwell.s	No
Websites	https://collections.nlm.nih.gov/catalog/nlm:nlmuid-9513718-bk	

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	**Comparing fonts and signatures**	**Module Delivery**	
Module Type	**Core**	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR48044**		
ECTS Credits	**5**		
SWL (hr/sem)	**125**		
Module Level	UGx	**Semester of Delivery**	1

Administering Department	FOR	**College**	SC
Module Leader	Name	**e-mail**	E-mail
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	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	A fingerprint-based biometric system is essentially a pattern recognition system that recognizes a person by determining the authenticity of her fingerprint. Depending on the application context, a fingerprint-based biometric system may be called either a verification system or an identification system: • a verification system authenticates a person's identity by comparing the captured fingerprints with her own biometric template(s) pre-stored in the system. It conducts one-to-one comparison to determine whether the identity claimed by the individual is true; • an identification system recognizes an individual by searching the entire template database for a match. It conducts one-to-many comparisons to establish the identity of the individual.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After studying this module, you shall be able to know – .12 • The correlation between fingerprints and ridges on the fingertips. .13 • The functions of finger ridges. .14 • Fundamental principles on which the science of fingerprinting and sign is based. .15 • The broad patterns of fingerprints. .16 • How fingerprints and sign may be used for individualization. .17
Indicative Contents	**Indicative continent required four sections:**

المحتويات الإرشادية	**Pattern** area is a part of a loop or a whorl where appears the core, deltas and ridges that are primarily responsible for classifying fingerprints. It exists in all patterns but in most arches, it is indefinable. [20h] **Type lines enclose** the pattern areas of loops and whorls. Type lines are the ridges that determine the pattern area of loops and whorls. The arches lack presence of type lines. These may be well-defined as the two inner most ridges starting parallel or run parallel to each other then, diverge and tend to covers the Pattern Area. They do not form two continuous ridges. In fact, they are frequently seen to split apart. [26h] **Delta is formed** when a ridge bifurcates and two arms of the bifurcating ridge diverge or when two adjacent ridges running side by side diverge causing an interspace within which the pattern lies. [20h] **Core is** the central point of the pattern. The core is approximately the center of the finger impression[20h]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Choosing an indexing technique alone is usually not sufficient; a retrieval strategy is also usually defined according to the application requirements, such as the desired accuracy and efficiency, the matching algorithm used to compare fingerprints, the involvement of a human reviewer, and so on. In general, different strategies may be defined for the same indexing mechanism. For instance, the search may be stopped when a fixed portion of the database has been explored or as soon as a matching fingerprint is found. (In latent fingerprint individualization, a forensic expert visually examines the fingerprints that are considered sufficiently similar by the minutiae matcher and terminates the search when a true correspondence is found.)

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	12
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	77	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	19.25
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.	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	Introduction - Basics of fingerprint analysis and fonts
Week 2	the basics of fingerprint recognition
Week 3	the 3 basic types of fingerprint patterns
Week 4	types of fingerprint classification
Week 5	fingerprint format and steps of fingerprinting
Week 6	the most common type of fingerprint
Week 7	levels of fingerprints
Week 8	basic categories of fingerprints
Week 9	Development of the Identification System by Fingerprints
Week 10	Fingerprint Analysis
Week 11	
Week 12	Parameters influence in fingerprint
Week 13	Applications of fingerprint
Week 14	
Week 15	exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safety and security
Week 2	Lab 2: Collecting Latent Prints
Week 3	Lab 3: analysis the parts of fingerprint
Week 4	Lab 4: identifying Ridge of fingerprint
Week 5	Lab 5: Developers method for fingerprint
Week 6	Lab 6: Developers method for fingerprint
Week 7	Lab 7: Developers method for fingerprint
Week 8	Lab 8: analysis fingerprint
Week 9-10	Lab9-10: identification of fingerprint by different conditions microscopy
Week 11-12	Lab 11: development method for identify fingerprint
Week 13-14	Lab 13 -14: experimental applications of fingerprint
Week 15	exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Bazen, A.M., Gerez, S.H.: Segmentation of Fingerprint Images. Proc. Workshop on Circuits Systems and Signal Processing (ProRISC 2001) (2001) 276–280	Yes
Recommended Texts	https://www.ojp.gov/pdffiles1/nij/225320.pdf fingerprint sources	No
Websites	https://collections.nlm.nih.gov/catalog/nlm:nlmuid-9513718-bk	

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	**Ethics of scientific research**			**Module Delivery**	
Module Type	**suport**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**KUET 007**				
ECTS Credits	2				
SWL (hr/sem)	50				
Module Level	UGx		**Semester of Delivery**	2	
Administering Department	FORN		**College**	SC	
Module Leader	Name		**e-mail**	E-mail	
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	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** Students will be expected to demonstrate practice skills and knowledge of social work theory and methods of intervention and apply these appropriately in an ethical and research evidence based way to the context of social work practice. **-2** The module aims to help students develop an awareness of the methods and techniques available for further investigation of the problem, including designing investigations, collecting appropriate results, analysing the results and evaluating the results and the process by which they have been achieved. **-3** The module aims to provide students with an understanding of the legal, ethical and professional context of Computer Science, in its applied context.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	At the end of the course, students will: **.1** Recognizing the diverse nature of placement settings demonstrate knowledge and practice skills in interviewing, assessment, methods of intervention and action plans across a range of user groups underpinned by an awareness of legislate. **.2** Apply ethical concepts in critically analyzing specific issues relating to professional practice. **.3** Critically analyze research methodology and its relevance to social work methods within evidence based practice principles.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. **-1** Communication skills including oral, non-verbal and in writing. The ability to gather, collate and analyses information from various sources.[6h] **-2** Assessments and risk assessments, action plans. [5h] **-3** Methods of intervention, psycho-social, crisis intervention, opportunity led and life space approaches and behavioral social work. [5h] **-4** An awareness at all times of the potential for risk to children. [5h] **-5** Sources of research and advanced literature searching. [5h]

	A review of the major methods relevant to social science and social work research. Interpreting statistics and data analysis. [5h] **-6** Application of research in social work practice and evaluation skills and research. Ethical theories, issues and dilemmas. [5h] **-7** Traditional and modern values in social work with Professional codes of ethics and other sources of social work values. [5h] **-8** Ethical principles and their application in professional practice. [5h] **-9** Anti-oppressive practice, the promotion of social justice and the moral rights of service users. [5h] **-10** The content also reflects, where appropriate, the knowledge, skills and professional confidence and competence requirements of the Key Capabilities and Protection. [5h] **-11**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The majority of learning will be independent learning, in line with other courses on the programmes. The teaching will mainly be in the form of Pre-recorded lectures and Seminar sessions. Each lecture will be based around exercises applying and illustrating the particular theme that week with specific reference to practical HR issues (e.g. diversity analysis for bivariate analysis, predicting turnover from selection scores for regression and prediction, making sense of engagement surveys with factor analysis, analysing the gender pay gap for moderation, etc.).

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	8.25
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.25
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, 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	Review Introduction
Week 2	Who Needs Research Ethics?
Week 3	Ethical Decision-Making
Week 4	Conflict of Interest
Week 5	Research Misconduct and Whistleblowing
Week 6	Mentorship
Week 7	Human Subjects Research and the IRB
Week 8	Research with Animals
Week 9	Authorship and Peer Review
Week 10	Authorship and Research Misconduct
Week 11	Entrepreneurship and Commercialization
Week 12	exam
Week 13	Practical Applications in Reporting and Peer Review
Week 14	Scientists' Relationships with Funding Sources
Week 15	Student Presentations

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Adams, R., Dominelli, L. & Payne, M., 2009. Social Work Themes, Issues and Critical Debates. Basingstoke: Palgrave Macmillan	Yes
Recommended Texts	Kara, H., 2017. Research and Evaluation for Busy Students and Practitioners, 2nd ed. Bristol: Policy Press	No
Websites	https://readinglists.surrey.ac.uk	

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	**Automatic fingerprint system**			**Module Delivery**
Module Type	**Core**			☒ **Theory**
Module Code	**FOR 48047**			☐ **Lecture**
ECTS Credits	**5**			☐ **Lab**
SWL (hr/sem)	**125**			☐ **Tutorial**
				☐ **Practical**
				☐ **Seminar**
Module Level	8th	**Semester of Delivery**		2
Administering Department	FORN	**College**		SC
Module Leader	Bara Qasiem Mohamed	**e-mail**		E-mail
Module Leader's Acad. Title	Lecture	**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	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 DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**project**			**Module Delivery**	
Module Type	**basic**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**FOR 48048**				
ECTS Credits	8				
SWL (hr/sem)	200				
Module Level	8th		**Semester of Delivery**	2	
Administering Department	FORN		**College**	SC	
Module Leader	Name		**e-mail**	E-mail	
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	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	Students will be expected to demonstrate practice skills and knowledge **-4** of social work theory and methods of intervention and apply these appropriately in an ethical and research evidence based way to the context of social work practice. The module aims to help students develop an awareness of the methods **-5** and techniques available for further investigation of the problem, including designing investigations, collecting appropriate results, analysing the results and evaluating the results and the process by which they have been achieved. The module aims to provide students with an understanding of the legal, **-6** ethical and professional context of Computer Science, in its applied context.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module students will be able to: **.4** 1. Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to Forensic Science. 2. Demonstrate skills in presenting scientific material and arguments clearly and correctly, to a range of audiences. 3. Demonstrate competence in the planning, design and execution of research investigations, from the problem-recognition stage through to the evaluation and appraisal of results and findings; this to include the ability to select appropriate techniques and procedures.
Indicative Contents المحتويات الإرشادية	This module will include the following:[2h for each step] • Development of a project topic and carrying out independent research. • Complete management of the project. • Writing a literature review of the selected area of investigation. • Writing a progress report. • Performing an investigation in a group setting with minimal supervision. • Giving a presentation. • Writing a project report.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The majority of learning will be independent learning, in line with other courses on the programmes. The teaching will mainly be in the form of Pre-recorded lectures and Seminar sessions. Each lecture will be based around exercises

	applying and illustrating the particular theme that week with specific reference to practical HR issues (e.g. diversity analysis for bivariate analysis, predicting turnover from selection scores for regression and prediction, making sense of engagement surveys with factor analysis, analysing the gender pay gap for moderation, etc.).

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	15.75
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	137	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	34.25
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	200		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	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	Review Introduction
Week 2	Who Needs Research Ethics?

Week 3	Ethical Decision-Making
Week 4	Conflict of Interest
Week 5	Research Misconduct and Whistleblowing
Week 6	Mentorship
Week 7	Human Subjects Research and the IRB
Week 8	Research with Animals
Week 9	Authorship and Peer Review
Week 10	Authorship and Research Misconduct
Week 11	Entrepreneurship and Commercialization
Week 12	exam
Week 13	Practical Applications in Reporting and Peer Review
Week 14	Scientists' Relationships with Funding Sources
Week 15	Student Presentations

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Adams, R., Dominelli, L. & Payne, M., 2009. Social Work Themes, Issues and Critical Debates. Basingstoke: Palgrave Macmillan	Yes
Recommended Texts	Kara, H., 2017. Research and Evaluation for Busy Students and Practitioners, 2nd ed. Bristol: Policy Press	No
Websites	https://readinglists.surrey.ac.uk	

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	**FX –** Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded

(0 – 49)	**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.