

وصف البرنامج الأكاديمي

اسم الجامعة : جامعة العلوم العراقية

الكلية : كلية العلوم

القسم العلمي : علوم الأدلة الجنائية

اسم البرنامج الأكاديمي أو المهني : بكالوريوس علوم الأدلة الجنائية

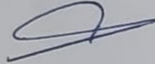
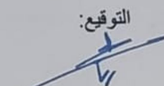
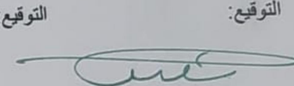
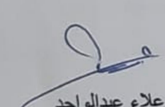
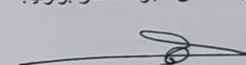
اسم الشهادة النهائية : بكالوريوس علوم الأدلة الجنائية

النظام الدراسي : نظام المقررات الدراسية

تاريخ اعداد الوصف : 2026-9-1

تاريخ ملء الملف : 2026-9-1

اللجنة المركزية لضمان الجودة لمسار بولونيا :

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دقق الملف من قبل:

شعبة ضمان الجودة والاداء الجامعي

اسم مدير شعبة ضمان الجودة والاداء الجامعي

التاريخ: 19/1 2026


التوقيع:

Iraqi University of Science / College of Science
كلية العلوم / جامعة العلوم العراقية



First Cycle – Bachelor's Degree (B.Sc.) Department of
Forensic Sciences
College of Sciences



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1. **Mission & Vision Statement**

Vision Statement

Our vision is to inspire new forensic scientists to search for the truth through science and shape the future of the field using new knowledge and innovation. The forensic academic staff of the (Iraqi University of Science) University believe that students come to understand the discipline of forensic through a combination of course work, laboratory experiences, research, and fieldwork. The combination of instructional methods leads students to a balanced understanding of the scientific methods used by biologists to make observations, develop insights and create theories about the living organisms that populate our planet. Small class sizes within the biology program foster a close working relationship between academic staff and students in an informal and nurturing atmosphere.

Mission Statement

This program aims to (1) provide exemplary forensic science education in Criminalistics, including DNA identification analysis, at the graduate level; (2) select students who have successfully completed an undergraduate science degree with a strong GPA and who aspire to become the future forensic scientists in the various forensic science laboratories; and (3) develop in these select students the skill necessary for working in this profession including ethics, integrity, the ability to devise innovative methods and techniques and the capacity to integrate new technology. This comprehensive program incorporates a unique curriculum that balances breadth and depth of study through scholarly

coursework which incorporates the logic and workings of the criminal justice system. In depth coursework covers the theoretical underpinnings of the biological and physical sciences as used in the collection, analysis, interpretation, reporting, and testimony of evidence.

2. Program Specification

Programme code:	BSc-FOR	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

FORENSIC student is a wonderfully wide-ranging subject, and Leeds, with one of the IRAQ's'largest and most diverse forensic teaching groups, is well equipped to deliver. The emphasis of the programme is the whole organism to which everything is related, be it the molecules that form proteins or communities of organisms in an ecosystem. The degree is popular - –or some it's'the breadth of the subject that appeals, for others it's'a path to specialization. All students have the opportunity to transfer onto our specialist degrees in Genetics, chemistry, and Ecology at the end of the first year.

Level 1 exposes students to the fundamentals of Biology, suitable for progression to all programmes within the biology programme group. Programme-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. A Leeds Biology graduate is therefore trained to appreciate how research informs teaching, according to the University and School Mission statements.

At Levels 2, 3 and 4 students are free to choose more than half of their module credits with the proviso a range of modules are selected that reflect the complexity of life forms from molecules, through organisms, both plants and animals, to populations to ensure the breadth of knowledge expected of a graduate with a biology degree.

The research ethos is developed and fostered from the start via practicals, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course in Level 1, which students must pass in order to progress into Level 2, and optional field courses in Levels 2, 3 and 4. At Level 4 all students carry out an independent research project, which may be a xx credit library or data analysis project, or a xx credit field or laboratory based project.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include a number of workshops to teach skills, e.g. library use and presentation skills, followed by assessed exercises, e.g. essays and talks, as opportunities to practice these skills in a subject-specific context.

International years and Industrial placements are also offered and individual needs are discussed with the appropriate tutor and accommodated wherever possible.

3. Program Goals

1. To provide a comprehensive education in forensic that stresses scientific reasoning and problem solving across the spectrum of disciplines within forensic
2. Show understanding of the role of physical forensic methods in forensic practice.
3. Demonstrate knowledge of the primary evidence types, their transfer and persistence.
4. Demonstrate understanding of emerging developments in forensic science.
5. Consider a broad range of forensic techniques to determine the examination strategy, sequencing, and probative value.
6. . Demonstrate understanding of quality standards in respect of scene examination.

4. Student Learning Outcomes

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.

Outcome 1

Identification of Complex Relationships

Graduates will be able to illustrate the structure and function of cellular components and explain how they interact in a living cell.

Outcome 2

Oral and Written Communication

Graduates will be able to formally communicate the results of biological /chemical investigations for forensic science using both oral and written communication skills.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 4

Scientific Knowledge

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

Outcome 5

Data Analyses

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 6

Critical Thinking

Graduates will be able to use critical-thinking and problem-solving skills to develop a research project and/or paper.

5. Academic Staff

1- Prof. Dr. Basima Mohsin sarhan | Prof. in inorganic chemistry | Prof.

Email: basima.m.s@baghdadcollege.edu.iq

2- Asst. Prof. Majed Hassan Karbon | Prof in Chemistry Biochemistry | prof.

Email: dr.majidkarbon@baghdadcollege.edu.iq

3- Zainab.Sadiq.cheether | MSc.in Physiology, Biochemistry and Pharmacology | Assistant Lecture

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4- Nameer Abdalkhadher| Biology / Molecular Biology | Assistant Lecture

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5- Mohammed Hameed abdulhasan |MSc.in Medical Instrumentation |Assistant Lecture

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6- Ali Thaer Ali Khamis Al-Mashi| Master of Subspecialty Criminal Law| Assistant Lecture

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7- Hala ayad noori| Specialization: Microbiology and Enzymology | Assistant Lecture

Email: hayad93@baghdadcollege.edu.iq

8- Abdulameer Abdulwahid Flayyih | International Relations | Lecturer Dr

Email: amiralsuafee@baghdadcollege.edu.iq

9- Hamza Yasser Salman | MSc.in Mathematics Differential Equations | Assistant Lecture

Email: hamzayasser@baghdadcollege.edu.iq

10- Selma Thabt Thaker| Econometrics Biostatistic | Professor

Email: selma@baghdadcollege.edu.iq

6. Credits, Grading and GPA

Credits

(Name) University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

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:				
Number 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.				

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$\text{CGPA} = [(1^{\text{st}} \text{ module score} \times \text{ECTS}) + (2^{\text{nd}} \text{ module score} \times \text{ECTS}) + \dots] / 240$$

7. Curriculum/Module

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
KUS1101	Mathematic	48	77	5.00	S	
KUS1102	fundmental of computer science	63	12	3.00	S	
KUS1103	Democracy and human rights	33	17	2.00	S	
SCI 1104	General Biology 1	78	97	7.00	C	
SC1 1105	General Chemstery	78	97	7.00	C	
FOR11001	Principles of fornsic scince	48	102	6.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
KUS12010	Arabic language	33	17	2.00	S	
KUS12011	English language	33	17	2.00	S	
SCI 12012	General physics	78	97	7.00	C	
FOR12012	General Biology 2	78	122	8.00	C	
FOR12023	Organic Chemistry	78	122	8.00	C	
FOR12002	Legal regulation of the criminal expert	48	27	3.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR23003	Biochemistry	78	72	6.00	C	
FOR23004	Genetics	78	72	6.00	C	
FOR23005	physiology Anatomy and	78	72	6.00	B	
FOR23006	Secretions and vital fluids	78	72	6.00	B	
FOR23007	Statistics and forensic applications	48	2	2.00	B	
FOR23008	crime science	48	2	2.00	B	
KUS23016	crimes of the bath regime in Iraq	48	52	2.00	S	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR24009	Molecular Biology	78	97	7.00	B	
FOR24010	Analytical Chemistry	78	97	7.00	B	
FOR24011	Laboratory equipment and techniques	78	72	6.00	B	
FOR24012	Investigation and criminal investigation	33	42	3.00	B	
KUS24020	Arabic language	33	17	2.00	C	
KUS24021	language english	33	17	2.00	B	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR35125	Molecular application	78	97	175	B	
FOR35126	Analytical Chemistry	78	97	175	B	
FOR35027	Forensic chemistry	78	47	125	B	
FOR35028	Chemical and microscopic detection methods	78	47	125	B	
FOR35029	Introduction to explosive materials and booby traps	33	42	75	C	

FOR35130	Forensic Psychology	33	42	75	B	
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Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR36131	Introduction to toxins and drugs	78	97	7.00	B	
FOR36032	trace of forensic	63	37	4.00	B	
FOR36033	Criminal insects	78	97	7.00	B	
FOR36034	Genetic statistical analysis and databases	33	67	4.00	C	
FOR36035	Inks and dyes and their warnings	33	67	4.00	B	
FOR36036	tissue , haier and fibers scince	48	52	4.00	B	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR47024	enviromental toxins and distrial pollution	63	87	6.00	B	
FOR47025	identify difintion tools	63	87	6.00	B	
FOR47026	Bioinformatics	63	87	6.00	B	
FOR47027	Basics of fingerprint analysis and fonts	63	87	6.00	B	
FOR47028	Automatic fingerprint system	63	87	6.00	B	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR48029	Principles of Medical jurisprudence	78	122	8.00	B	
FOR48030	Identity Definition Tool and Fingerprints	78	122	8.00	B	
FOR48031	Ethics of scientific research	33	67	4.00	S	

FOR48032	Cybercrime	48	102	6.00	B	
FOR48033	Graduation project	63	37	4.00	B	

8. Contact

Program Manager:

Basima.m. sarhan | Prof. in inorganic chemistry | Prof.

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Mobile no.:964-07902490161

Program Coordinator:

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Mobile no.:964-07902490161



Republic of Iraq - Ministry of Higher Education and Scientific Research
Al-Karkh University of science
Bachelor's degree in Forensic science (First cycle)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25hr
Program Curriculum (2027 - 2026)

جمهورية العراق - وزارة التعليم العالي والبحث العلمي
جامعة الكرخ للعلوم
بكالوريوس في علوم الأدلة الجنائية (الدورة الأولى)
٤ سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوروبية - كل وحدة اوروبية = ٢٥ ساعة
المناهج الدراسية للعام ٢٠٢٦-٢٠٢٧



Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECT S	Module Type	Prerequisite site Module(s) Code	
							CL (hr/w)	Lect (hr/w)	ab (hr/w)	r (hr/w)	ut (hr/w)	mn (hr/w)								
UGI	One	1	KUS1101	Mathematic	رياضيات	English	2					1		3	48	77	125	5 S		
		2	KUS1102	fundamental of co	اساسيات علم الحاسوب	English	2		2					3	63	12	75	3 S		
		3	KUS1103	Democracy and h	الديمقراطية وحقوق الانسان	Arabic	2							3	33	17	50	2 S		
		4	SCI 1104	General Biology 1	الحياء عام 1	English	2		2			1		3	78	97	175	7 C		
		5	SCI 1105	General Chemistr	كيمياء عام	English	2		2			1		3	78	97	175	7 C		
		6	FOR1001	Principles of fore	علوم الأدلة الجنائية	English	2					1		3	48	102	150	6 B		
							Total	12		0	6	0	4	0	18	348	402	750	30	
UGI	Two	1	KUS12010	Arabic language	اللغة العربية	Arabic	2							3	33	17	50	2 S		
		2	KUS12011	English language	اللغة الانجليزية	English	2							3	33	17	50	2 S		
		3	SCI 12012	General physics	الفيزياء العامة	English	2		2			1		3	78	97	175	7 C		
		4	FOR12012	General Biology 2	الحياء عام 2	English	2		2			1		3	78	122	200	8 C		
		5	FOR12023	Organic Chemistr	كيمياء عضوية	English	2		2			1		3	78	122	200	8 C		
		6	FOR12002	Legal regulation	تنظيم القانوني للتعبير الجنائي	Arabic	2					1		3	48	27	75	3 B		
							Total	12		0	6	0	4	0	18	348	402	750	30	
UGII	Three	1	FOR23003	Biochemstery	Biochemistry	English	2		2			1		3	78	72	150	6 C		
		2	FOR23004	Genetics	Genetics	English	2		2			1		3	78	72	150	6 C		
		3	FOR23005	Anatomy and phy	Anatomy and physiolo	English	2		2			1		3	78	72	150	6 B		
		4	FOR23006	Secretions and vi	Secretions and vital f	English	2		2			1		3	78	72	150	6 B		
		5	FOR23007	Statistics and for	Statistics and forensi	English	2					1		3	48	2	50	2 B		
		6	FOR23008	crime scine	Crime scene	Arabic	2						1	3	48	2	50	2 B		
		7	KUS23016	crimes of the baa	Crimes of the baath r	Arabic	2						1	3	48	2	50	2 S		
					Total	14		0	8	0	7	0	21	456	294	750	30			
UGII	Four	1	FOR24009	Molecular Biology	الاحياء الجزيئية	English	2		2			1		3	78	97	175	7 B		
		2	FOR24010	Analytical Chemis	الكيمياء التحليلية	English	2		2			1		3	78	97	175	7 B		
		3	FOR24011	Laboratory equipm	اجهزة وتقنيات مختبرية	English	2		2			1		3	78	72	150	6 B		
		4	FOR24012	Investigation and	التحقيق والبحث الجنائي	Arabic	2							3	33	42	75	3 C		
		5	KUS24020	Arabic language	لغة عربية 2	Arabic	2							3	33	17	50	2 S		
		6	KUS24021	language English	لغة انجليزية 2	English	2							3	33	17	50	2 S		
		7	KUS24022	Applications of co	تطبيقات علم الحاسوب	English	2		2					3	63	12	75	3 S		
					Total	14		0	6	0	3	0	21	333	354	750	30			
UGIII	Five	1	FOR35125	Molecular applica	التطبيقات الجزيئية	English	2		2			1		3	78	97	175	7 B		
		2	FOR35126	Analytical Chemis	التحليل الآلي	English	2		2			1		3	78	97	175	7 B		
		3	FOR35027	Forensic chemist	الكيمياء الجنائية	English	2		2			1		3	78	47	125	5 B		
		4	FOR35028	Chemical and mico	طرق الكشف الكيميائي والمجهري	English	2					1		3	78	47	125	5 B		
		5	FOR35029	Introduction to ex	مقدمة في المواد المتفجرة والتعبير	Arabic	2							3	33	42	75	3 C		
		6	FOR35130	Forensic Psychol	علم النفس الجنائي	Arabic	2							3	33	42	75	3 B		
							Total	12		0	6	0	4	0	18	378	372	750	30	
UGIII	Six	1	FOR36131	Introduction to to	مقدمة في السموم والمخدرات	English	2		2			1		3	78	97	175	7 B		
		2	FOR36032	Trace of forensic	البصمات الجنائية	English	2					1		3	63	37	100	4 B		
		3	FOR36033	Criminal insects	الحشرات الجنائية	English	2		2			1		3	78	97	175	7 B		
		4	FOR36034	Genetic statistica	التحليل الإحصائي الوراثي والوراثة	English	2							3	33	67	100	4 C		
		5	FOR36035	Inks and dyes and	الاحبار والاصباغ ومحايلها	English	2							3	33	67	100	4 B		
		6	FOR36036	Tissue , Haier and	نسج و شعر و دلف	English	2					1		3	48	52	100	4 B		
							Total	12		0	4	0	4	0	18	333	417	750	30	
UGIV	Seven	1	FOR47024	Environmental to	السموم البيئية والتلوث الصناعي	English	2		2					3	63	62	125	5 B		
		2	FOR47025	Identify definition t	اوت تعريف الهوية	English	2		2					3	63	62	125	5 B		
		3	FOR47026	bioinformatics	المعلومات الحيوية	English	2		2					3	63	87	150	6 B		
		4	FOR47027	Basics of fingerp	اساسيات تحليل بصمة الاصابع	English	2		2					3	63	62	125	5 B		
		5	FOR47028	Automatic fingerp	نظم البصمة الآلي	English	2		2					3	63	62	125	5 B		
		6	FOR47029	Graduation projec	مشروع بحث تخرج	English	2		2					0	60	40	100	4 B		
							Total	10		0	10	0	0	0	15	315	335	650	30	
UGIV		Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	SWL hr/sem	ECT S	Module Type	Prerequisite site Module(s) Code
								CL (hr/w)	Lect (hr/w)	ab (hr/w)	r (hr/w)	ut (hr/w)	mn (hr/w)							

Eight	1	FOR48030	Principles of Med	مبادئ الطب الشرعي	English	2		2		1		3	78	72	150	6	B
	2	FOR48031	Identity Definition	مقارنة الخطوط والتوقيعات	Arabic	2		2		1		3	78	72	150	6	B
	3	FOR48032	Ethics of scientifi	أخلاقيات البحث العلمي	Arabic	2						3	33	67	100	4	S
	4	FOR48033	Forensic chemist	تطبيقات الكيمياء الجنائية	English	2		2				3	63	87	150	6	B
	5	FOR48033	Cybercrime	الجريمة الإلكترونية	English	2				1		3	48	52	100	4	B
	6	FOR48029	Graduation proje	مشروع بحث تخرج	English	2		2				3	63	37	100	4	B
					Total	12	0	8	0	3	0	18	363	387	750	30	
						Total	98	0	54	0	29	0	147	2874	2963	5900	240
Must be 240 ECTS																	
ner Internships to fulfill th																	
Structured SWL (hr/w) type	CL	Class Lecture			Module type	B	Basic learning activities		SWL: Student Workload								
	Lab	Laboratory				C	Core learning activity		SSWL: Structured SWL								
	Pr	Practical Training				S	Support or related learning act		USSWL: Unstructured SWL								
	Tut	Tutorial				E	Elective learning activity										
	Lect	Online lecture															
	Semn	Seminar			Note: Columns O, Q and R are progmaaed, protected and should not be edited												

MODULE DESCRIPTION FORM

Module Information			
Module Title	Fundamentals of Fluids Detection and Secretions		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR23016		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	1
Administering Department	Forensic \FOR	College	science
Module Leader	Zainab sadiq	e-mail	zainab.altememi@baghdadcollege.edu.iq
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	1-9-2026	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	The aim of this Module is :
أهداف المادة الدراسية	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]
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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	86	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	6.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 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 Haematology. 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
	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	Anatome and Physiology		Module Delivery		
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
Module Code	FOR23015				
ECTS Credits	6				
SWL (hr/sem)	150				
Module Level		UGx11 1	Semester of Delivery		1
Administering Department		Forensic \FOR	College	Scince	
Module Leader	Zainab sadiq		e-mail	zainab.altememi@baghdadcollege.edu.iq	
Module Leader's Acad. Title		Asst. Lect	Module Leader's Qualification		Msc.
Module Tutor			e-mail		
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date		1-9-2026	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	1. The aim of the module is to introduce and explore the fundamental concepts of human physiology and anatomy 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 anatomy 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 5. 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 anatome 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 anatome 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.
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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.
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Student Workload (SWL) الحمل الدراسي للطلاب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	86	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	6.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	64	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	4.4
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
As		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)		
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Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	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	
Week	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: Muscles 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
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			(%)	
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	Baath Party Crimes in Iraq		Module Delivery
Module Type	Core		☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☒ Seminar
Module Code	KUS23016		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	2	Semester of Delivery	1
Administering Department	FORN	College	SCI
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	Abdulameer Abdulwahid Flayyih	e-mail	amiralsuafee@bagdadcollege.edu.iq
Peer Reviewer Name	Mohammed Ahmed Hamad	e-mail	mohammed_ahmed@bagdadcollege.edu.iq
Scientific Committee Approval Date	2026-9-1	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	ارتكب نظام البعث في العراق إبّان حكمه عدد كبير من الجرائم المختلفة، واختلافها يلزم بيان مفاهيم وتعريف للطالب ليكون على معرفة ودراية بما يمر به مما لها علاقة بمادة المنهج، كمفهوم الجريمة وأقسامها، والجرائم الدولية التي حُكِّم عليها قيادات وأزلام نظام البعث وفق قانون المحكمة الجنائية العراقية العلى، وعليها سيكون هذا الملف في مبحثين، المبحث الأول في بيان مفهوم الجرائم وأقسامها، والمبحث الآخر في بيان جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العلى لسنة ٢٠٠٥ م.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- تسليط الضوء على جرائم ما ارتكبها نظام جائر في العالم ك له على تعاقب الأزمان كذلك التي ارتكبها (نظام البعث) على صعيد العراق خاصة، والمنطقة الإقليمية عامة، والعالم كله شمولاً. 2- لقد جثم نظام البعث البائد على صدر العراق والعراقيين زهاء أربعة عقود يستقي سياسة تسلطهم من رضاء غ تاة الطغاة حقب التاريخ ك) قابيل، والنمرود، وفرعون، وأبي لهب، والحجاج، ويزيد، وهولاكو، وموسيليني، وهتلر (بما يتناسب ونشأة رأسه الطاغية وعدو الإنسانية) صدام حسين (المقبور؛ فذاق ويلات بطش هذا النظام كل من انتهج سبيل الحق وحُب الوطن؛ فرفض النهج البعثي العفّين، واكتوى بنار قمعه من صنوف المآسي والمحّن. 3- لقد تحسّل من هذا الواجب التربوي - التعليمي) الشرعي - الرسمي) أن تكلف لجنة وزارية مختصة تعنى بوضع منهج يؤثّق بعضاً من جرائم النظام البعثي)؛ ليكون مبصراً حقيقة يشرف به الشباب الجامعي الحالي على ما مضى من حياة عقود من حكم العراق بيد طاغية شيطان بهيأة إنسان فيستحضرون من أطلّاهم على أفصله ومضامينها ما يجعلهم على هدى يدرون به كل تعمية إعلامية تحاول تضليلهم؛ فيمنعون به كل عى.
Indicative Contents المحتويات الإرشادية	ارتأت اللجنة - التي عاش رئيسها وأعضاؤها كافة مدة الحكم البعثي المجرم، وذاقوا من ويلات ا بصدق ومصاديق - بعد رحلة توثيقية بطشه ما يجعل هذا المنهج المقرر للمنظومة الأكاديمية الجامعية موضوعي حضورية، وإلكترونية أن يأتي هذا المنهج المقرر على مقممة هي التي بين يدي الطالب الجامعي، والقارئ يستنير بها للمضمون كليه بدواعي تأليفه، ومسوغات إقراره، ودوافع تدريسه، ثم أربعة أقصّل وظّف أولها لتوثيق) جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا عام ٢٠٠٥ م، وجعل ثانيها لكشف) الجرائم النفسية والاجتماعية، وأثارها، وأبرز انتهاكات النظام البعثي في العراق (، وكُرس ثالثها لتبيين) الجرائم البيئية لنظام البعث في العراق (، أمّا الفصل الرابع والأخير فقد خُصص ل) جرائم المقابر الجماعية (، ثم ختم المنهج بملخص شافٍ وافٍ يضغ الحقائق مواضعها مما مرّ العرض له، والاستدلال عليه. لقد تضمن هذا المنهج ما جاء مفاتيح معرفية بيد الطالب الجامعي يقوى بها على كل مرتج حباكّت رواية أكذوبته أيادي البعث وإعلامه المزيف، وباعت ضميرها أنفس ترى أن تبقى إلى الآن ذليلة أسيرة، وذليلاً تابعاً.

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	هذا الواجب التربوي - التعليمي الشرعي - الرسمي (أن تكلفَ لَجَنَة وزارية مختصة تُعنى بوضع منهج يؤثّق بعضاً من) جرائم النظام البعثي () ؛ ليكونَ مبصّر حقيقة يشرفُ به الشباب الجامعي الحالي على ما مضى من حياة عقودٍ من حُكم العراق بيد طاغية شيطانٍ بهيأة إنسانٍ ؛ فيستحضرون من إطلاعهم على أفصله ومضامينها ما يجعلهم على هدىٍ يدرؤون به كلّ تَعَمِّيّة إعلامية تحاولُ تضليلهم ؛ فيمنعونُ به كلّ عمى.

Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem)	30	Structured SWL (h/w)	1.5
الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعياً	
Unstructured SWL (h/sem)	20	Unstructured SWL (h/w)	0.7
الحمل الدراسي غير المنتظم للطالب خلال الفصل		الحمل الدراسي غير المنتظم للطالب أسبوعياً	
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 / 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	المقدمة / جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا عام ٢٠٠٥ م

Week 2	الفصل الأول: ١,١ . مفهوم الجرائم وأقسامها ١,١,١ . تعريف الجريمة لغة واصطلاحاً
Week 3	أقسام الجرائم. ١,٢ . جرائم نظام البعث وفق توثيق قانون المحكمة الجنائية العراقية العليا عام ٢٠٠٥ ١,٢,١ . أنواع الجرائم الدولية
Week 4	القرارات الصادرة من المحكمة الجنائية العليا
Week 5	الفصل الثاني الجرائم النفسية والاجتماعية وأثارها، وأبرز انتهاكات النظام البعثي في العراق
Week 6	الجرائم النفسية ٢,١,١ . آليات الجرائم النفسية. ٢,١,٢ . آثار الجرائم النفسية. ٢,٢ . الجرائم الاجتماعية. ٢,٢,١ . عسكرة المجتمع
Week 7	موقف النظام البعثي من الدين انتهاكات القوانين العراقية ٢,٣,١ . صور انتهاكات حقوق الإنسان وجرائم السلطة
Week 8	بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث ٢,٣,٣ . أماكن السجون والاحتجاز لنظام البعث
Week 9	الفصل الثالث الجرائم البيئية لنظام البعث في العراق.
Week 10	٣,١ . التلوث الحربي والإشعاعي وانفجار الألغام
Week 11	٢ . تدمير المدن والقرى) سياسة الأرض المحروقة
Week 12	تجفيف الأهوار ٣,٤ . تجريف بساتين النخيل والأشجار والمزروعات
Week 13	جرائم المقابر الجماعية
Week 14	جرائم المقابر الجماعية أحداث مقابر الإبادة الجماعية المرتكبة من النظام البعثي في العراق
Week 15	EXAM

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	جرائم حزب البعث في العراق النسخة 1 – الطبعة الاولى 20023	yes
Recommended Texts	أرشيف مؤسسة السجناء السياسيين. أرشيف مؤسسة الشهداء. -أرشيف المركز العراقي لتوثيق جرائم التطرف في العتبة العباسية المقدسة. -الموقع الرسمي للأمم المتحدة. -ايمن عبد العزيز سلامة ، ال مسؤولية الدولية عن ارتكاب جريمة الابادة الجماعية ، ط ١ ، دار العلوم للنشر والتوزيع ، القاهرة ، ٢٠٠٦ -جندي عبد الملك، الموسوعة الجنائية، الجزء الثالث، دار احياء التراث العربي، بيروت، ١٩٩٠ م.	No
Websites	https://iraqicenter-fdec.org/archives/4224	

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	Biochemistry		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR23013		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	1
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	basima mohsin sarhan		e-mail
basima.m.s@baghdadcollege.edu.iq			
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2026	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	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	Type something like: 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 behaviour 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.
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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	6.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.5
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	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 Learning, 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
	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	Statistics and forensic applications		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR23017		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader		e-mail	
Module Leader's Acad. Title	Professor	Module Leader's Qualification	
Module Tutor	Selma Thabt Thaker	e-mail	selma@baghdadcollege.edu.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2026	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	On completion of this module the learner will/should be able to; 1. Describe basic statistical terms which are of relevance to the area of forensic science. 2. Graphically display and numerically summarise data using appropriate tables, graphs and measures of centre, spread and position. 3. Explain and apply concepts of basic probability including, conditional probability, Bayes' theorem, independent events and counting formulae; 4. Make inferences about population parameters using sample statistics using confidence interval estimates and tests of statistical hypotheses 5. Describe the application of statistics to sampling, quality control, analytical method validation and experimental design. 6. Use an appropriate method for analysing relationships between variables in a dataset
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Students who successfully complete this unit will be able to: 1. Explain basic concepts in probability as they apply to random events and uncertain evidence, and update probabilities when additional information is obtained 2. Apply probability theory to games of chance, forensic science, and DNA profiling 3. Identify appropriate applications of binary and multinomial regression and apply these models to forensic problems 4. Compare different models for a survival analysis and apply these to forensic science problems 5. Conduct cluster analyses, particularly in typical forensic science settings, and explain the differences between various clustering methods 6. Compare different classification techniques, and apply these to problems in forensic science settings
Indicative Contents المحتويات الإرشادية	1. Describe basic statistical terms which are of relevance to the area of analytical science Introduction to Statistical Terms Populations and Samples Data Types Introduction to Sampling Methods [12h] 2. Graphically display and numerically summaries data using appropriate tables, graphs and measures of center, spread and position. Graphical Representation of data including frequency tables and charts Measures of Central Tendency, Position and Dispersion. [12h]

	3. Explain and apply concepts of basic probability including, conditional probability, Bayes' theorem, independent events and counting formulae; Probability Experiments Probability Trees Classical Probability Experimental Probability Addition and Multiplication Rules of Probability Counting Rules Bayes Theorem Discrete Probability Distributions Binomial Distribution Poisson Distribution The Normal Distribution Applications of the standard Normal Distribution Assessing Normality The Central Limit Theorem [10h] 4. Make inferences about population parameters using sample statistics using confidence interval estimates and tests of statistical hypotheses Introduction to Hypothesis Testing Writing hypotheses for statistical tests One Sample, Independent Samples and Paired Samples t-tests One-Way ANOVA and related Post Hoc Tests Repeated Measures ANOVA and related Post Hoc Tests z-tests for proportion size 5. Describe the application of statistics to sampling, quality control, analytical method validation and experimental design Sample Size Calculations Quality of Analytical Measurements Uncertainty Method Validation. Calibration Methods Experimental Design and Optimisation [12h] 6. Use an appropriate method for analysing relationships between variables in a dataset Relationship Modelling Pearson's Correlation Co-efficient Significance of the correlation co-efficient
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	Simple Linear Regression Chi Square test for association Chi Square test of goodness of fit During the Practical element of the course, students will use the Data Analysis ToolPak in Microsoft Excel to carry out the various types of analysis listed in the syllabus above. [12h]
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The teaching methods used will be a combination of lectures, self-study, labs, tutorials, and any combination of discussion, case study, problem-solving exercises and computer-based learning. The practical element of the course will be delivered separately to students in their various class groups Forensic Science so that the examples used in the practical application of statistics can be tailored to their field of study.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	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	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 the concept of statistics
Week 2	The importance of statistics and its relationship to other sciences and its fields of application
Week 3-4	The main stages of the statistical process: the interpretation of the number of words, all the data and information, and the link between the data And tabulating it, displaying the data, calculating indicators or parameters for the data, interpretation and prediction
Week 5	The meaning of statistics and criminal statistics 1
Week 6	The meaning of statistics and criminal statistics 2
Week 7	Exam
Week 8	The importance of criminal statistics in the security operation
Week 9	Sources of criminal statistics: prison statistics, judicial statistics, police statistics
Week 10	The importance of forensic statistics and its benefits
Week 11	Obstacles to criminal statistics
Week 12	Fundamentals of developing criminal statistics
Week 13	Methods for predicting crime rates
Week 13-14	A brief overview of the use of the SPSS system in forensic statistical analysis
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly tut. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	The importance of statistics and its relationship to other sciences and its fields of application
Week 2-3	The main stages of the statistical process: the interpretation of the number of words, all the data and information, and the link between the data And tabulating it, displaying the data, calculating indicators or parameters for the data,

	interpretation and prediction
Week 4	Sources of criminal statistics: prison statistics, judicial statistics, police statistics
Week 5	Obstacles to criminal statistics
Week 6	Methods for predicting crime rates
Week 7-8	A brief overview of the use of the SPSS system in forensic statistical analysis

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Lovrich, N.P., Pratt, T.C., Gaffney, M.J., Johnson, C.L., Asplen, C.H., Hurst, L.H., and Schellberg, T.M. (2004). National Forensic DNA Study Report, Final Report. Pullman: Washington State University.	Yes
Recommended Texts	National Academies of Sciences, Engineering, and Medicine. 2015. Support for Forensic Science Research: Improving the Scientific Role of the National Institute of Justice. Washington, DC: The National Academies Press. https://doi.org/10.17226/21772 .	No
Websites	https://www.sussex.ac.uk/webteam/gateway/file.php?name=sewp161.pdf&site=25	

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	crime scene		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR23018		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader		e-mail	
Module Leader's Acad. Title	Assistant Lecturer	Module Leader's Qualification	
Module Tutor	Ali Thaer Ali Khamis Al-Mashi	e-mail	AliThaer@mohesr.gov.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	2026-9-1	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	Upon completion of this module, the student can: 1-explain the key theories and approaches of Crime Science. - differentiate the (classical) sociological-criminological approach from modern Crime Science. 2-apply the Crime Science mind-set to real-life crime and security problems. 3-critically reflect upon crime prevention and security policymaking. 4-Formulate a response strategy to security and crime problems. 5-analyse long-standing as well as pressing future issues in crime prevention and detection. 6-Upon completion of this module, the student can: 7-explain the key theories and approaches of Crime Science. 8-differentiate the (classical) sociological-criminological approach from modern Crime Science. 9-apply the Crime Science mind-set to real-life crime and security problems. 10-critically reflect upon crime prevention and security policymaking. 11-formulate a response strategy to security and crime problems. 12-analyse long-standing as well as pressing future issues in crime prevention and detection.
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	Lectures: [6 h] Introduction to Forensic Science, Crime Scene to Court Process. Scenes of Crime: The role of crime scene investigators in the preservation, recovery and recording of evidence at the scene of crime and evaluation of crime scene evidence. Overview of Forensic Science in the UK: Police Forces Scientific Support in relation to other Forensic Agencies. Overview of physical evidence including DNA, Toxicology, footwear and tool marks, finger-marks. Introduction to forensic evidence associated with arson, explosions and firearms. Courts and their structure. Giving expert testimony; evidence-in-chief and cross-examination. Admissibility of forensic evidence in Court: differences between UK and USA. Writing of laboratory reports and expert witness statements. Health and safety issues at scenes and in forensic examination. Thus: the main inductive contents include: [4h for each part] 1-The importance of a crime scene and of material evidence in criminal proceedings 2-The role of the court-appointed expert in criminal proceedings 3- Forms of evidence, kinds of traces and methods of analysis 4-Searching for and securing evidence and Case study 5-Searching for and recovering evidence that is accepted in court 6- Independent analysis and documentation of this evidence 7- Defence and discussion of the results. 8-Computer systems and IT/computing science Internet, WWW, HTML Calculations based on spreadsheet programs Basics of programming . 9-The students provide evidence of active participation in the tutorial relating to the lecture by solving exercises in class and/or by taking a written test at the end of the semester.
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Students will attend formal timetabled lectures throughout the module. There will be class discussions and the opportunity to share information, and develop good communication skills. Students will visit a series of simulated crime scenes, where they will gain practical experience of crime scene examination. This will include the search, identification and recording of evidence located at these scenes. Students will complete reports on crime scene examination including, risk assessment, results and evaluation.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	42	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	33	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.2
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 الأسبوعي النظري	
	Material Covered
Week 1	Introduction - crime science
Week 2	collect and package evidence, prepare laboratory submission forms and identify errors in them,
Week 3	recover contact trace material in practical forensic examination, and write a simple expert report
Week 4-5	The role of crime scene investigators in the preservation, recovery and recording of evidence at the scene of crime and evaluation of crime scene evidence.
Week 6	the scope, methods and limitations of crime scene examination and forensic enquiry in the crime to court process.
Week 7	main evidence types in volume, major and serious crimes
Week 8	Evidence found at crime scenes.

Week 9	Investigation of crime scenes. ? ? ?
Week 10	Search techniques.
Week 11	Recovering evidence and other information. ?
Week 12	Team working at crime scenes.
Week 12-13	Reporting crime
Week 14	scene investigations.
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	Cook, T. Hill, M. and Hibbitt, S. (2016) Blackstone's Crime Investigator's Handbook. Oxford: Oxford University Press.	Yes
Recommended Texts	Beaufort- Moore, D. (2015) Crime Scene Management and Evidence Recovery, 2nd Edition. Oxford: Oxford University Press	No
Websites	Self html (the English version is still (early 2005) in its infancy at: http://www.selfhtml.org/	

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	Genetics		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR23114		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader		e-mail	
Module Leader's Acad. Title	Asst. Lect	Module Leader's Qualification	Msc.
Module Tutor	Nameer Abdul khader	e-mail	nameer19621962@baghdadcollege.edu.iq
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2026	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 <i>BRCA1</i> 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]
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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.
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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 أسبوعياً	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.5
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	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
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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
	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	Laboratory Instrument & Techniques		Module Delivery
Module Type	Suport or related learning activity		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR24021		
ECTS Credits	7		
SWL (hr/sem)	175		
Module Level	2	Semester of Delivery	4
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	د	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	01/09/2026	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 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, <i>e.g.</i> 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 Magnetic 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]
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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	86	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	89	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
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	Exam Mid-term 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	Exam Mid-term Exam (particle application on use instrument).
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) <i>Successful Lab Reports: A Manual for Science Students</i>, Cambridge University Press. Higson, S.P.J. (2003) <i>Analytical Chemistry</i>, Oxford University Press. Skoog, D.A., Holler, F.J. and Nieman, T.A. (1998) <i>Principles of instrumental analysis</i>, 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 (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	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar			
Module Code	FOR24120					
ECTS Credits	7					
SWL (hr/sem)	175					
Module Level	1	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	01/09/2026		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 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	1. Understand and describe the fundamental principles and operation of analytical techniques, including spectroscopy, chromatography and electrochemistry. 2. Undertake calculations associated to the calibration of instruments and analytical quantification, and evaluate experimental error. 3. Operate basic analytical techniques, develop problem solving skills and be familiar with good laboratory practice. 4. 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 Laves 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]
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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 أسبوعياً	6.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	89	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	6.2
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 الأسبوعي 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
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		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
	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	Module Delivery
Module Type	Core	☒ Theory ☒ Lecture
Module Code	KUEN 005	

ECTS Credits	3		☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
SWL (hr/sem)	75			
Module Level	1	Semester of Delivery	1	
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	01/09/2026	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	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	5. Enhance the efficiency of student to use many reference or books which reported in English language. 6. To develop the competence that students need to read a wide range of general and academic texts in English. 7. To develop students competence in reference skills [locating and evaluating information needed for assignments in a library. 8. demonstrate adequate general and detailed comprehension of a range of advanced general and academic texts 9. 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] <u>Part B -</u> Develop the toking and spooking skills

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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	102	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.5
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	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. <i>Reading Skills for the Social Sciences</i> . OUP Cotton, D. et al. <i>Business Class</i> . 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
	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	اللغة العربية	Module Delivery	
Module Type	ثانوية	☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code			
ECTS Credits			
SWL (hr/sem)	42		
Module Level	1	Semester of Delivery	1
Administering Department		College	كلية التحسس الثاني والجيوفيزياء
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name	لا يوجد	e-mail	لا يوجد
Scientific Committee Approval Date		Version Number	

Relation with other Modules	
العلاقة مع المواد الدراسية الأخرى	
Prerequisite module	ترتبط اللغة العربية وفروعها المتعددة مع الاختصاصات الأخرى بصفة جوهرية ، لان الفروع جميعها متعاونة لتحقيق الغرض الأصلي منها ، وهو تمكين المتعلم من استخدام اللغة استخداما صحيحا للأفهام والفهم
Semester	

Co-requisites module	لصلتها الأساسية في توجيه الطالب لكتابة التقارير والبحوث بلغة سليمة ومختصرة تؤدي إلى إنجاز بحوث هادفة ومكتملة المعنى	Semester	
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Module Aims, Learning Outcomes and Indicative Contents			
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	تقويم اللسان تهيئة الأذهان - اللفظ بشكل سليم تنمية مهارات صياغة الكتب والمخططات الرسمية - إعداد البحوث والتقارير بشكل سليم		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	مخرجات المعرفة العامة التي تتمثل (التعرف إلى مستويات نظام اللغة العربية - معرفة القواعد النحوية والصرفية - وصف المناهج النقدية والظواهر الأدبية - التعريف بأبرز المصنفات اللغوية والأدبية) بالإضافة إلى (المهارات الذهنية (الإدراكية) - المهارات العملية أو المهنية - المهارات المنقولة / العامة - مهارات الاتصال، وتقنية المعلومات - الاتجاهات والقيم والبعد الأخلاقي)		
Indicative Contents المحتويات الإرشادية	تعد علاقة الإرشاد بالتربية علاقة تكامل، فلا يمكن التفكير في التربية بدون الإرشاد وتعد المؤسسات التربوية المجال الحيوي الفعال للإرشاد، إذ أن هذه الأخيرة في أمس الحاجة إلى خدماته وذلك بسبب الفروقات الفردية بين الطلاب، اختلاف المناهج، ازدياد عدد الطلبة، ازدياد المشكلات الاجتماعية		

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	أجهزة الصوت - شاشة العرض - اللاب توب - المنهج المقرر - أمثلة حية

Student Workload (SWL)			
الحمل الدراسي للطلاب			
Structured SWL (h/sem)		28 ساعة	
الحمل الدراسي المنتظم للطلاب خلال الفصل			
Unstructured SWL (h/sem)		14 ساعة	
الحمل الدراسي غير المنتظم للطلاب خلال الفصل			

Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	42 ساعة
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Module Evaluation تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	5% (5)	5	فهم الطالب لعدد من المحاضرات وكيفية الربط بينهم
	Assignments	1	5% (5)	3	اكتساب الطالب مهارة البحث وإيجاد المعلومة الدقيقة
	Projects / Lab.	1	10% (10)	لا يوجد	لا يوجد
	Report	1	10% (10)	10	تهيئة الطالب لإعداد مشاريع تخرج بصورة صحيحة وبشكل مفصل وتعلية على كيفية استخدام المصادر
Summative assessment	Midterm Exam	2hr	20% (20)	9	معرفة حصيلة فهم الطالب للمادة
	Final Exam	2hr	60% (60)	16	التقييم النهائي للطلاب
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	التعريف بمبادئ اللغة العربية وأقسامها وكيفية توظيفها في مجالات الحياة كافة
Week 2	التمييز بين همزة الوصل وهمزة القطع وكيفية ضبط النص املانياً
Week 3	العدد والمعدود وأقسامه وتوظيفه عملياً

Week 4	علامات الترقيم وكيفية تنقيط النص للوصول إلى جمل مترابطة في سياقها
Week 5	الإيجاز في الإداء اللغوي وتكثيف المعنى
Week 6	محاضرة نحوية في الفاعل ونائبه
Week 7	الأغلاط اللغوية الشائعة وكيفية تصحيحها
Week 8	موازنة بين عصرين شعريين وأبرز شعرانه
Week 9	Midterm exam
Week 10	الأسس العلمية والمنهجية في كتابة التقارير بأنواعها وتوظيفها عملياً
Week 11	كيفية تصحيح الكتب الرسمية وربط مضمون السياق النصي
Week 12	محاضرة في الأدب العربي وتسلط الضوء على أقسامه وتفصيلاتها
Week 13	التوكيد وأنواعه وأصول توظيفه نصياً
Week 14	محاضرة نحوية في التقديم والتأخير
Week 15	دروس عملية في تطبيق القواعد النحوية والإملائية وتصحيح النصوص
Week 16	Second Midterm Exam

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الأسبوعي للمختبر	
Week	Material Covered
Week 1	المادة نظرية بحث
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	اللغة العربية العامة لأقسام غير الاختصاص – عبد القادر حسن أمين	نعم

Recommended Texts	رؤية في مناهج تدريس اللغة العربية – استاذ الدكتور سعد علي زاير + العربية الجامعية لغير المتخصصين – دكتور عبد الرأجي	نعم
Websites	تم الاعتماد على كتب من دون استخدام الانترنت	

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	Forensic Computer Applications		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☒ Practical ☒ Seminar
Module Code	FOR24022		
ECTS Credits	3		
SWL (hr/sem)	75		
Module Level	2 nd	Semester of Delivery	2
Administering Department	FOR	College	Science
Module Leader		e-mail	
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	2026-9-1	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] <u>Part C</u> 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] <u>Part D</u> 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] <u>Part E</u> 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] <u>Part F</u> 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] <u>Part G</u> Biological Neural System, The Multilayer Perceptron, Structure of the Multilayer Perceptrons, Create a Perceptron Network (nnntool) ,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
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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.
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Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	
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) المناهج الأسبوعي 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	1- Matlab: Numerical Computing, Tutorial point, 2014. 2- 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. 3- 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 4- Sammes, A., & Jenkinson, G. (Eds.). (2016). Forensic Computing: A Practitioner's Guide. Springer.	Yes
Recommended Texts	1- Sutherland, I. E. (Ed.). (2021). Handbook of digital image processing: with examples in MATLAB. Springer. 2- 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.				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية						
Module Title	Molecular Biology		Module Delivery			
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar			
Module Code	FOR24119					
ECTS Credits	7					
SWL (hr/sem)	175					
Module Level	1	Semester of Delivery	1			
Administering Department	FORN	College	SC			
Module Leader		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	01/09/2026	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	10. This module aims to provide a strong foundation in molecular biology and biochemistry that will be built upon in subsequent modules. 11. Core biological molecules will be examined with a focus on their structure and function. 12. Teaching will be delivered using a combination of lectures, workshops and practicals. 13. Problem solving and quantitative skills will be developed through complementary workshops using case studies, applications and examples based on lecture content. 14. Experience of biochemical techniques such as chromatography and enzyme kinetics will be gained through practicals. 15. 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 as 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 Programmes of Study[40h]. Developed and demonstrated time management and organisational 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)	86	Structured SWL (h/w)	6.1

الحمل الدراسي المنتظم للطالب خلال الفصل		الحمل الدراسي المنتظم للطالب أسبوعيا	
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	89	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	6.3
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) المناهج 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

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Investigation and criminal investigation		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR24023		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	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	01/09/2026	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 والغموض وعدم الإلمام بكل جوانبها بذلك بمفرده خصوصاً إذا كانت الجريمة المرتكبة يشوبها اللبس أو فني يصعب على المحقق فهمها وتحليلها ، ليس بسبب لاسيما إذا تعلق التحقيق بوقائع لها طابع علمي تكوين المحقق في حد ذاته وخبرته القانونية لا تتيجان له إدراك نقص الذكاء أو الخبرة أو الإدراك بل أن التقنيين والمتخصصين . أمور لها أهلها من 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 أن يمتلك المهارات الآتية: 1- مهارة فنية أن أهم ما تتميز به الخبرة أنها ذات طابع فني ولجوء القاضي أو المحقق إلى الاستعانة بالخبير إنما لكون المسألة المطروحة في الدعوى الجزائية ذات طابع فني لا يستطيع كل منهما أن يقدرها حسب مؤهلاته وخبراته ، وعليه فإن مهمة الخبير تقتض استعانة الخبير بمعلوماته الفنية وتبعا لذلك لا يعد خبيرا من يكلفه القاضي بمعاينة يعتمد فيها على حواسه فقط ، ولكن يعد خبيرا من كلفه المحكمة بأن يجري معاينة ويأتي بنتائج هذه الملاحظة إذا كانت تقتضي تطبيق أساليب علمية أو فنية. 2- مهارة القدرة على تحديد حجم السلوك عند انتداب الخبير بتحديد المهمة التي يقوم بها والمسائل التي يلتزم الإجابة أو الكشف أو التحليل عنها بما يتناسب واختصاصه الفني أو 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- مهارة قضائية المقصود بذلك أن مسألة اللجوء إلى الخبرة أمر تقررره 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- مهارة 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 شاهده 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 تسيب رفضها " .
Indicative Contents المحتويات الإرشادية	إذا كان على المحقق أن يتفرغ لأعمال البحث والتحقيق كالاستجواب ومناقشة الشهود والكشف والتفتيش وجمع المعلومات الأخرى فإن العناية بالأثار وفحصها ينبغي أن تترك لخبير متخصص في هذا النوع من العمل ، ومن ثم فإن الخبير هو ذلك الشخص الذي اكتسب خبرة عملية وفنية نتيجة لدراسات علمية كالطب الشرعي أو المحلل الكيميائي أو نتيجة لممارسة مهنة معينة فترة من الزمن كإرباب الحرف والصناعات كالنجارين والحدادين وغيرهم . ومن الجائز أن يدلي الخبير برأيه شفويا أمام المحقق الذي ينبغي عليه أن يدونه في محضر التحقيق ثم يوقع عليه كليهما ، عليه فإن عمل الطبيب العدلي أو خبير المختبر الجنائي مع المحقق أمر لا بد منه لإزاحة الستار عما يكتنف الجريمة من غموض وملايسات وكلما زاد هذا التعاون بين الاثنين كلما سهل اكتشاف الجريمة ومعرفة مرتكبيها ، علماً أن المحقق أو القاضي غير ملزم بالأخذ برأي الخبير طبقاً لمبدأ الاقتناع الذاتي للقاضي وتكوين رأيه واعتقاده بالإدانة أو 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 أحداً ، 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 وفقاً 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 تماماً 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 إرباب الفن والحرف والمعرفة وهذه معلومات تساعد في حل ما يشكل عليه من الأمور التي لا يمكن حلها بمعلوماته الخاصة والوصول إلى نتائج حاسمة بشأنها لعدم الإلمام 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 أو القاضي التوصل إلى كفاءة المدة السامة التي يستعملها الجاني في إحداث الوفاة ما لم يستعين بأحد أصحاب الاختصاص من الكيميائيين لمعرفة ذلك. سيما أن هناك العديد من القضايا التي تلعب فيها الخبرة الدور الفاعل والرئيس في الفصل في موضوعها وكشف ملايسات الجريمة. وأحياناً تكون الخبرة هي البيئة الوحيدة التي يمكن بواسطتها التوصل إلى المراد إثباته، وبذلك فإن الخبرة طريقة من طرق التحقيق. ومن مفارقات الحال أنه قد تكون الخبرة على نقض
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	أدلة عديدة، وبالرغم من ذلك يعتمد عليها الباحث لأنها تبني 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 إلى القول بأن يُعد خبيراً كل من يسند إليه المحقق أو القاضي مهمة ذات طبيعة خاصة مالم تتوافر فيه صفة الإدراك والاستنتاج فضلاً عن الأمانة والاخلاص.
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Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	72	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	28	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2
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 الأسبوعي النظري	
	Material Covered
Week 1	1- مفهوم الخبير الجنائي

Week 2	2-علاقه الخير الجنائي بالخير المدني
Week 3	3-التنظيم القانوني للخير الجنائي
Week 4	4-المسؤولية القانونيه للخير الجنائي
Week 5	5-اليات عمل الخير الجنائي
Week 6	6-الحمايه القانونيه للخير الجنائي
Week 7	7-العلاقه بين المحقق والخير
Week 8	8-خصائص الخير الجنائي
Week 9	9-امتحان
Week 10	10-المسؤوليه المدنيه للخير
Week 11	11-المسؤوليه الجنائيه للخير
Week 12	12-اجاءات انتداب الخير الجنائي
Week 13	13-رسوم خبره 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	
	Material Covered
Week 1	2-علاقه الخير الجنائي بالخير المدني
Week 2	4-المسؤوليه القانونيه للخير الجنائي
Week 3	5-اليات عمل الخير الجنائي
Week 4	7-العلاقه بين المحقق والخير
Week 5	11-المسؤوليه الجنائيه للخير
Week 6	14-القيمه القانونيه للخبره الجنائيه
Week 7	14-القيمه القانونيه للخبره الجنائيه

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts		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.				