

Academic Program Description Form

University Name: ..Al-Turath University.....

Faculty/Institute: College of Science

Scientific Department: Forensic science

Academic or Professional Program Name:.. Bachelor of Science AI

Final Certificate Name: .. Bachelor's degree in Forensic science.....

Academic System: Bologna Process ...

Description Preparation Date: 1/9/2024

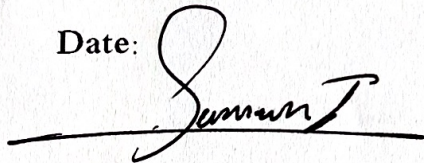
File Completion Date: 1/7/2025

Signature:

Head of Department Name:

Dr. Sanan Thaer Abdalwahab

Date:

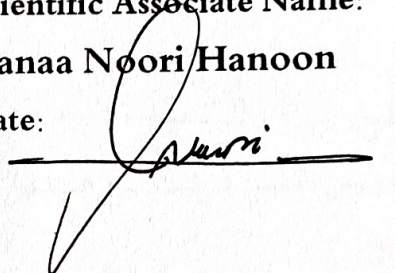


Signature:

Scientific Associate Name:

Hanaa Noori Hanoon

Date:



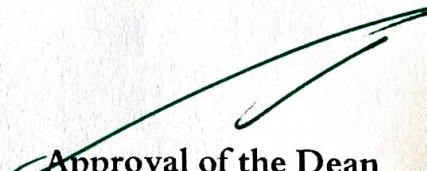
The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 27/8/2024

Signature:



Approval of the Dean

1. Program Vision

The AI Department envisions a future where AI technologies are harnessed to positively transform industries, societies, and individual lives. It aspires to be a globally recognized center of excellence in AI education and research, producing graduates who are not only technically proficient but also deeply aware of the ethical, social, and environmental implications of AI. Through the work, it seeks to shape the AI landscape, driving innovation, inclusivity, and sustainability in AI development and deployment, and ultimately, making a lasting and positive impact on the world.

2. Program Mission

The mission of the AI Department is to educate, inspire, and empower the next generation of AI professionals. AI Department is committed to providing a comprehensive and cutting-edge education in artificial intelligence, fostering research and innovation, and promoting ethical and responsible AI practices. The aim is to prepare students to excel in AI-related fields, contribute to the advancement of AI technology, and address real-world challenges with innovative AI solutions

3. Program Objectives

- Equip students with a strong foundation in AI theory and practice.
- Foster critical thinking and problem-solving skills relevant to AI.
- Instill ethical considerations and responsible AI development.
- Encourage interdisciplinary collaboration and innovation.
- Prepare students for careers in AI research, development, and application.

4. Program Accreditation

The program is new and in its second phase only, as it was created in the year 2023–2024.

5. Other external influences

Yes, a twinning agreement has been signed with University of Anbar, College of Science, Department of AI. University of Anbar 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.

6. Program Structure (First Stage)

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	5	14	1.4%	Suport
College Requirements	3	23	2.3%	Core
Department Requirements	4	25	2.5%	Basic
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

(Second Stage)

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	4	9	1.8%	Suport

College Requirements				
Department Requirements	10	51	10%	Basic
Summer Training				
Other				

(Third Stage)				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements	12	60	18%	Basic
Summer Training				
Other				

(fourth Stage)				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	1	2	0.8%	Suport
College Requirements				
Department Requirements	8	24	10%	Basic
Summer Training				
Other				

7. Program Description

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
KUS1101	Mathematic	48	77	5.00	S	None
KUS1102	fundmental of computer science	63	12	3.00	S	None
KUS1103	Democracy and human rights	33	17	2.00	S	None
SCI 1104	General Biology 1	78	97	7.00	C	None
SC1 1105	General Chemstery	78	97	7.00	C	None
FOR11001	Principles of fornsic scince	48	102	6.00	B	None

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
KUS12010	Arabic language	33	17	2.00	S	None
KUS12011	English language	33	17	2.00	S	None
SCI 12012	General physices	78	97	7.00	C	None
FOR12012	General Biology 2	78	122	8.00	C	None
FOR12023	Organic Chemestery	78	122	8.00	C	None
FOR12002	Legal regulation of the criminal expert	48	27	3.00	B	None

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR23003	Biochemstery	78	72	6.00	C	None
FOR23004	Genetics	78	72	6.00	C	None
FOR23005	Anatomy and physiology	78	72	6.00	B	None
FOR23006	Secretions and vital fluids	78	72	6.00	B	None
FOR23007	Statistics and forensic applications	48	2	2.00	B	None
FOR23008	crime scince	48	2	2.00	B	None
KUS23016	crimes of the baath regime in Iraq	48	2	2.00	S	None

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR24009	Molecular Biology	78	97	7.00	B	None
FOR24010	Analytical Chemistry	78	97	7.00	B	None
FOR24011	Laboratory equipment and techniques	78	72	6.00	B	None
FOR24012	Investigation and criminal investigation	33	42	3.00	C	None
KUS24020	Arabic language	33	17	2.00	S	None
KUS24021	english language	33	17	2.00	S	None
KUS24022	Applications of computer science	63	12	3.00	S	None

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
FOR35125	Molecular application	78	97	7.00	B	None
FOR35126	Analytical Chemistry	78	97	7.00	B	None
FOR35027	Forensic chemistry	78	47	5.00	B	None
FOR35028	Chemical and microscopic detection methods	78	47	5.00	B	None
FOR35029	Introduction to explosive materials and booby traps	33	42	3.00	C	None
FOR35130	Forensic Psychology	33	42	3.00	B	None

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	None
FOR36032	trace of forensic	63	37	4.00	B	None
FOR36033	Criminal insects	78	97	7.00	B	None
FOR36034	Genetic statistical analysis and databases	33	67	4.00	C	None
FOR36035	Inks and dyes and their warnings	33	67	4.00	B	None

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	C	None
FOR47025	identify difintion tools	63	87	6.00	C	None
FOR47026	bioinformatics	63	87	6.00	E	None
FOR47027	Basics of fingerprint analysis and fonts	63	87	6.00	S	None
FOR47028	Automatic fingerprint system	63	87	6.00	C	None

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	None
FOR48030	Identity Definition Tool and Fingerprints	78	122	8.00	B	None
FOR48031	Ethicsof scintific research	33	67	4.00	S	None
FOR48032	Cybercrime	48	102	6.00	B	None
FOR48033	Graduation project	63	37	4.00	B	None

8. Expected learning outcomes of the program**Knowledge**

- 1- Demonstrate knowledge of the fundamental scientific concepts in the field of crime investigation.
2. Understand and apply scientific principles related to forensic evidence, including its analysis and documentation.
3. Operate laboratory instruments effectively and utilize them in forensic applications.
4. Contribute as qualified and well-trained professionals in scientific and forensic institutions..”

Skills

- 1- Apply practical skills in crime investigation and criminal inquiries.
2. Collect evidence effectively, including lifting and preserving fingerprints.
3. Analyze and interpret evidence by linking causes to effects in forensic contexts.

Ethics

1. Commit to professional ethics and integrity in the practice of forensic science.
2. Demonstrate responsibility, accuracy, and objectivity in handling and analyzing evidence.
3. Respect confidentiality and the sensitivity of forensic information.
4. Work effectively within a team and show readiness for continuous learning and professional development.

9. Teaching and Learning Strategies

1. Teaching through electronic lectures and exploratory learning.
2. Conducting practical laboratory tests and experiments.
3. Utilizing discussion, critical thinking, and information-sharing techniques.

10. Evaluation methods

Examinations and tests.

2. Evaluation of laboratory and written reports.
3. Graduation research projects.
4. Assessment of summer training in hospitals, forensic medicine departments, and forensic evidence directorates (Ministry of Interior / Ministry of Defense).•

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof.Dr. AbdAli Jenzeel Jbara	Biology	Parasitology			Staff	
Prof. Dr. Hameed Hussein Mohammed	Plant protection	Entomology			Staff	

Lec.Dr. Nawfal Mohammed Shahwan	Physician in Medicine	Inrternal Medicine				
Asst.Lec.Luay A.Ali	Military Science	Forensic Science Specialization in Forgery and Counterfeiting			Staff	
Asst.Lec.Salwa Ismail Mashallah	Veterinary Medicine and surgery	Pathology and forensic medicine			Staff	
Asst.Lec.Zainab Hassan Hadi	Microbiology	Medical Microbiology			Staff	
Asst.Lec.Sura Abdulhussein Fadhil					Staff	
Asst.Lec. Dina Adnan Ahmed	Biotechnology	molecular microbiology			Staff	
Asst.Lec.Zeena Ali Abdulameer	Chemistry of science	Organic Chemistry			Staff	
Asst.Lec. Yousif Hasan Ghadhi	Public law	Prosecution and investigations activities			Staff	

Professional Development

Mentoring new faculty members

The Department of Forensic Science is committed to the continuous professional development of its faculty members, particularly new staff, through structured mentoring and support programs aimed at enhancing their academic, research, and professional skills. This includes:

1. Mentoring and Orientation:

- Providing guidance on departmental policies, academic standards, and ethical responsibilities in forensic education and research.
- Introducing new faculty members to the curriculum, laboratory protocols, and safety procedures.

2. Teaching Skills Enhancement:

- Supporting the development of effective teaching strategies, including electronic lectures, practical lab sessions, and interactive student engagement.
- Offering workshops on assessment methods, student evaluation, and instructional design tailored to forensic science courses.

3. Research Development:

- Assisting new faculty in designing and conducting research projects related to crime investigation, forensic evidence analysis, and criminalistics.
- Guidance on publishing in peer-reviewed journals, preparing research proposals, and participating in conferences.

4. Professional Integration:

- Facilitating collaboration with senior faculty, interdisciplinary teams, and external forensic institutions.
- Encouraging participation in professional networks, continuing education, and forensic science organizations.

5. Continuous Evaluation and Feedback:

- Regular performance reviews and constructive feedback to help faculty members improve teaching, research, and departmental contributions.
- Developing individualized professional development plans to ensure ongoing growth and alignment with departmental goals.

12. Acceptance Criterion

Academic Qualifications:

- Obtaining a preparatory (high school) certificate in the science/biology stream or its equivalent.
- Admission grades must be in accordance with those determined by the Ministry of Higher Education and Scientific Research or the university.
- Basic Academic Requirements:
 - A good foundation in mathematics, physics, chemistry, and biology.
 - Proficiency in basic English to enable the student to follow international courses and resources.

13. The most important sources of information about the program

- University/College Website:
 - Contains the study plan, course descriptions, regulations, and instructions.
- Student Handbook:
 - Explains registration details, academic instructions, examination systems, and student activities.
- Program Specification & Curriculum Guide:
 - Includes the department's vision, mission, objectives, learning outcomes, and academic standards.
- Administrative and Academic Departments:
 - Registration and Admissions Division.
 - Quality Assurance and Academic Accreditation Division.
 - Department courses and faculty members.
- University Library:
 - Scientific resources and specialized books in medical physics.
 - Electronic databases (e-journals and e-books) available to students and researchers.
- International Electronic Resources:
- Academic Advising:
 - Students can obtain information directly from academic advisors in the department.

14. Program Development Plan

The Department of Forensic Science is committed to continuous improvement and development of its academic programs to ensure high-quality education and

professional preparedness. The Program Development Plan includes the following key strategies:

1. Curriculum Enhancement:

- Regularly reviewing and updating course content to reflect the latest advances in forensic science, crime investigation techniques, and laboratory technologies.
- Incorporating modern teaching methods, including e-learning, case studies, and hands-on laboratory experiences.

2. Faculty Development:

- Providing ongoing professional development programs for faculty members to improve teaching, research, and practical skills.
- Mentoring new faculty to integrate them effectively into the department and enhance their academic contributions.

3. Research and Innovation:

- Encouraging faculty and students to conduct innovative research projects in forensic science, criminalistics, and evidence analysis.
- Supporting publications, conferences, and collaborative research with local and international institutions.

4. Infrastructure and Laboratory Improvement:

- Upgrading laboratory facilities and equipment to meet international standards in forensic analysis.
- Ensuring access to modern software, databases, and analytical tools relevant to forensic investigations.

5. Industry and Community Collaboration:

- Strengthening partnerships with hospitals, forensic medicine departments, law enforcement agencies, and other relevant institutions.
- Providing students with practical training, internships, and exposure to real-world forensic cases.

6. Quality Assurance:

- Implementing continuous assessment and evaluation of program effectiveness, including feedback from students, alumni, and stakeholders.
- Aligning program outcomes with national and international accreditation standards.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>General Biology</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR1104</u>		
ECTS Credits	<u>7</u>		
SWL (hr/sem)	<u>175</u>		
Module Level	1	Semester of Delivery	1
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Asma A. Mansure		e-mail Asmaa.mansoor@kus.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)		e-mail E-mail
Peer Reviewer Name	Asma A. Mansure		e-mail Asmaa.mansoor@kus.edu.iq
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

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

Module Aims أهداف المادة الدراسية	1. This module gives students an understanding of the science and techniques that underpin forensic biology. 2. Topics covered will include identification of biological fluids, the analysis the human genome in forensic biology, blood stain pattern analysis and forensic anthropology. 3. Material covered in lectures will be illustrated through lab work. 4. Highlight in most theories that was deal with biology system for live. 5. Our aim is to provide students with opportunities to develop academically, professionally and personally: to broaden their ambitions, extend their attitudes, challenge their assumptions, and assist towards unlocking their potential to succeed in their studies and future lives.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Explain the analytical, laboratory and legal requirements of producing DNA profiles. 2. Summarize what is meant by a basic biology science. 3. Perform interpretation of DNA profiling results, including calculation of likelihood ratios. 4. Critically evaluate DNA profiling results citing significant research in the field. 5. Show an understanding of the scientific basis and utilisation of techniques of bone anthropometry and pathology in the study of human tissue. 6. Demonstrate the ability to critically evaluate body fluid evidence and blood stain patterns.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. On completion of this module, students are expected to be able to: 1 Demonstrate knowledge of the basic structures, functions and growth characteristics of cells.[13h] 2 Demonstrate knowledge of the structure and function of the four principal tissue types.[13h] 3 Demonstrate an understanding of Mendelian genetic inheritance. [15hrs] Demonstrate understanding of the role of variation in speciation and evolution. [15 hrs] Evolution of the eukaryotic cell, membrane structure and membrane transport mechanisms, structure and function of the nucleus, ribosomes, endoplasmic reticulum, Golgi Body, lysosomes, mitochondria and chloroplasts. [15 h] Mitosis and meiosis. Structure and function of epithelial, connective, nervous and muscle tissue. Mendel's Laws, inheritance, genotype, phenotype, dominance, sex determination, sex-linkage, variation, speciation and evolution.. [15 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	To describe the learning activities of the students and the teaching methods of the staff. Effective module design should result in a varied range of active learning experiences for students, including learning activities which are 'research-like'.

	Activities should, of course, motivate and encourage deep learning (reflection on wider meanings, rather than superficial memorisation of information). They should also be varied and flexible enough to accommodate different learning styles and orientations, and allow for inclusivity of students from different backgrounds and with different kinds of learning abilities. Learning activities therefore need to include reference to independent, interdependent (peer- supported) and online activities, as well as participation in different kinds of taught class.
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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	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	89	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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 الأسبوعي النظري	
	Material Covered
Week 1	Course introduction; What is biology?
Week 2	The nature of life

Week 3	Atomic structure and chemistry of water
Week 4	Carbohydrates, proteins, and lipids
Week 5	Nucleic acids
Week 6	Exam Mid-term Exam
Week 7	Cells, Part I
Week 8	Cells, Part 2
Week 9	Energy & metabolism, Part I
Week 10	Energy & metabolism, Part 2
Week 11	Cellular respiration, Part I
Week 12	Cellular respiration, Part 2
Week 13	Photosynthesis
Week 14	DNA & its role in heredit
Week 15	EXAM
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to Measurement
Week 2	Lab 2: Course intro; Life and the scientific theory
Week 3	Lab 3: Enzyme function I
Week 4	Lab 4: Enzyme function 2
Week 5	Lab 5: Microscope & cell structure
Week 6	Lab 6: Cell behavior
Week 7	Lab 7: Respiration
Week 8	Lab 8 : Photosynthesis
Week 9	Lab 9 : Restriction digest of plasmids
Week 10	Lab 10: Gene transformation
Week 11	Lab 11: Mitosis, meiosis, and gametogenesis
Week 12	Lab 12: Mendelian crosses
Week 13	Lab 13: Outcomes of evolution
Week 14	Lab 14: Blood Typing
Week 15	Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>English\language</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>KUEN 005</u>		
ECTS Credits	<u>3</u>		
SWL (hr/sem)	<u>75</u>		
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	01/09/2023	Version Number	1.0

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

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

أهداف المادة الدراسية	a. to enable the learner to communicate effectively and appropriately in real life situation; b. to use English effectively for study purpose across the curriculum; c. to develop interest in and appreciation of Literature; d. to develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking and Writing; e.to revise and reinforce structure already learnt.s
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	7. Enhance the efficiency of student to use many reference or books which reported in English language. 8. To develop the competence that students need to read a wide range of general and academic texts in English. 9. To develop students competence in reference skills [locating and evaluating information needed for assignments in a library. 10. demonstrate adequate general and detailed comprehension of a range of advanced general and academic texts 11. 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
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	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	NO

	Cotton, D. et al. <i>Business Class</i> . Nelson	
Recommended Texts	An appropriate selection of Collins Specialist English Dictionaries, Arrange of A-level type Study Guides	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	Legal regulation of the criminal expert		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR009</u>		
ECTS Credits	<u>3</u>		
SWL (hr/sem)	<u>75</u>		
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	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	تزويد الطالب بالمعلومات القانونية المتعلقة بعمله الفني بيان النصوص القانونية التي تنظم عمل خبير الادلة الجنائية
أهداف المادة الدراسية	

	تبصير الطالب بالمسؤولية الجزائية والمدنية والانضباطية التي تترتب على مخالفته للقانون
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	اعداد خبير جنائي قادر على فهم وتطبيق القانون بالشكل السليم اعداد ملاكات متكلمة من الناحية القانونية والفنية
Indicative Contents المحتويات الإرشادية	

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/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	التعريف بالخبير
Week 2	خصائص الخبرة الجنائية
Week 3	شروط الخبير الجنائي
Week 4	العلاقة بين الخبير والشهادة
Week 5	الطبيعة القانونية لعمل الخبير الجنائي
Week 6	المسؤولية القانونية للخبير الجنائي
Week 7	المسؤولية المدنية للخبير
Week 8	المسؤولية الانضباطية
Week 9	علاقة الخبرة بالبحث والتحقيق
Week 10	كيفية انتداب الخبرة
Week 11	الحماية القانونية للخبير
Week 12	القيمة القانونية للخبرة
Week 13	الامتحان الفصلي
Week 14	تطبيقات عملية للخبير في مجال المهارات المعرفية للخبير الجنائي
Week 15	تطبيقات عملية للخبير في مجال المهارات المعرفية للخبير الجنائي
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts		
Recommended Texts		
Websites		

Grading Scheme

مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Mathematics		Module Delivery	
Module Type	Core		☒ Theory ☐ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	Kus1101			
ECTS Credits	5			
SWL (hr/sem)	125			
Module Level		Semester of Delivery		1
Administering Department	RS	College	RG	
Module Leader	Sajeda Kareem Radhi		e-mail	sajeda.kareem@kus.edu.iq
Module Leader's Acad. Title	Assistant Professor		Module Leader's Qualification	Ph.D.
Module Tutor			e-mail	
Peer Reviewer Name			e-mail	
Scientific Committee Approval Date	6/11/2023		Version Number	

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	أهداف المادة الدراسية
	1. Identify the properties of mathematical functions and their opposites.

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

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

	- Following up the scientific development of mathematics by reviewing modern curricula. - Follow-up and development of academic courses and compare them with other universities. - Using the latest teaching aids to motivate the student to learn and understand.
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Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	50		
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	75		
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered

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

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Websites		Various lectures and lecture notes on the internet.		
Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>chemistry</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR1102</u>		
ECTS Credits	<u>7</u>		
SWL (hr/sem)	<u>175</u>		
Module Level	1	Semester of Delivery	1
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Firas H. Abdulrazzak	e-mail	Firas_ald2020@yahoo.com
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	1-To develop skills and understanding of different types of elements through the application of techniques.

أهداف المادة الدراسية	2. To understand metals, physical and chemical properties. 3. This course deals with the basic concept of general chemistry. 4. To understand periodic table and distribution elements on it
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize the classification of elements. 2. List the various terms associated with periodic table. 3. Summarize what is meant by a basic chemical property. 4. Discuss the reaction and involvement of atoms in chemical reaction. 5. Describe bonds, oxidation number, and Lewis term. 6. Identify the elements according to conductivity and their applications. 7. Discuss the electrons distribution in the atomic levels. 8. Identify the primary terms that used to characterized physical and chemical properties
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Part A-Circuit Theory Starting from atomic theory and electron distribution in the outer and inner shells the details required make enough information for the principle of chemistry. [15hrs] Enhance the principle of general chemistry when highlight in more information about losing and acceptance electrons with the abilities for forming any bonds and forming new molecules with new properties. [16hrs] Periodic table with highlight in the orientations of molecules to show different and variance in properties. [12hrs] . Revision problem classes [6hrs] Part B-Analogue chemistry 3-Fundamentals Electron configuration, oxidation number, The ratios of forming molecules. [15hrs] Components and active site. [9hrs] Identification of general properties.[9hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	To describe the learning activities of the students and the teaching methods of the staff. Effective module design should result in a varied range of active learning experiences for students, including learning activities which are 'research-like'. Activities should, of course, motivate and encourage deep learning (reflection on wider meanings, rather than superficial 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 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	6.3
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 الأسبوعي النظري

	Material Covered
Week 1	Introduction to chemistry
Week 2	Periodic table
Week 3-4	Atomic structure types of bonding
Week 5	Physical and chemical properties/ Drawing Lewis Structures
Week 6	Chemical Reactions
Week 7	Preparation solution (types of concentration)
Week 8	Exam
Week 9-10	Acids and Bases and titration
Week 11-12	Titrimetric Methods
Week 13-14	Separation method of elements
Week 15	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المناهج الأسبوعي للمختبر

	Material Covered
Week 1	Lab 1: General safety rules for Laboratory and equipments
Week 2	Lab 2: Standard Solution
Week 3	Lab 3: Preparation of standard solution from liquid solutions
Week 4	Lab 4: Preparation of standard solution from solid materials
Week 5	Lab 5: Titration Strong Acid with Strong Base
Week 6	Lab 6: Titrating Sodium Carbonate With Hydrochloric Acid
Week 7	Lab 7: pH - Metric Titration
Week 8	Lab 8 : exam
Week 9	Lab 9 : Conductometric Titrating of Strong Acid With Strong Base
Week 10	Lab 10: Titration of Acetic Acid in Vinegar
Week 11	Lab 11: Titration of a Mixture of Carbonate (CO_3^{2-}) and Bicarbonate (NaHCO_3^-)
Week 12-13	Lab 12: Separation of I Group Cations (Ag^+ , Pb^{2+} , Hg_2^{2+})
Week 14	Lab 14: exam
Week 15	Review All Previous Experiences

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	A Textbook of Physical Chemistry Vol-6 Kapoor, K.L Mc Graw-Hill 2019	Yes
Recommended Texts	Introductory Chemistry Essentials, Global Edition Tro, N. J. Pearson 2015	yes
Websites	https://openstax.org/details/books/chemistry-2e https://open.umn.edu/opentextbooks/textbooks/219	

Grading Scheme

مخطط الدرجات

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

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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	<u>Human rights</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>MPH12012</u>		
ECTS Credits	<u>3</u>		
SWL (hr/sem)	<u>75</u>		
Module Level	1	Semester of Delivery	2
Administering Department	MPHY	College	SCI
Module Leader	Dr.Mohanad Basim Ibrahim	e-mail	mohanad.al.sallami@kus.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	none	e-mail	none
Scientific Committee Approval Date	11/06/2023	Version Number	1.0

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

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

Module Aims أهداف المادة الدراسية	تهدف المادة إلى بيان أهمية الحقوق الأصلية للصيقة بالإنسان، التي تتفق مع فطرته، والتي يقبلها العقل المجرد، والتي لا تختلف باختلاف الزمان والمكان، وهذه هي حقوق الإنسان.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	تسهم المادة العلمي (لحقوق الإنسان) إلى تثقيف الطالب من الناحية القانونية؛ ليكون مطلع على ماهية الحقوق الانسانية، وأصلها التاريخي، وتعريف ماله من حقوق وما عليه من التزامات، من خلال معرفة حقه وحدود ذلك الحق، وحقوق الآخرين، وما سعت إليه الدول والمنظمات الدولية والاقليمية في تعزيز مفاهيم تلك الحقوق، وإلزام الدول للنص عليها في التشريعات الداخلية، والضمانات التي تكفل تطبيق تلك الحقوق العالمية.
Indicative Contents المحتويات الإرشادية	إن محتويات الارشادية لمادة حقوق الانسان تلخص بتهذيب سلوك الطالب، [20hr] وتعبره إن تعامله مع غيره من بني البشر يقوم على مبدأ: ((إن الناس صنفان؛ إما أحقّ لك في الدين، أو نظير لك في الخلق)). [20 hr]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	نعم في هذا الجانب إلى ما يلي: 1- يعرف الطالب إبتداءً بمضمون موجز عن المفردات التي سيتم تناولها خلال المحاضرة، ثم توجه له بعض الأسئلة التي تحرك ذهنه، وتشد إنتباهه؛ لضمان حسن الاستماع. 2- يتم التعمق بشرح المفردات العلمية في حدود تناسب متوسط المستويات العلمية لضمان عدم تجاوز الفروق الفردية عند عموم الطلبة. 3- يتم ترك مساحة للنقاش الحر في إطار الموضوع المخصص للمحاضرة. 4- الحرص على جانب التغذية الراجعة للمعلومات قبل نهاية المحاضرة. 5- التواصل إلكترونياً مع الطلبة لنشر المحاضرات المسجلة، والمكتوبة من خلال الموقع الرسمي للجامعة.

Student Workload (SWL) الحمل الدراسي للطلاب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعياً	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	42	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعياً	2.8
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب 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 / 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	تعريف وطبيعة الديمقراطية و حقوق الإنسان
Week 2	التطور التاريخي للديمقراطية وحقوق الإنسان
Week 3	مميزات الديمقراطية و حقوق الإنسان عن غيرها من الحقوق
Week 4	حقوق الإنسان والديمقراطية في الديانات السماوية
Week 5	حقوق الإنسان و الديمقراطية في المواثيق الدولية
Week 6	حقوق الإنسان في التشريعات الداخلية
Week 7	حقوق الإنسان الشخصية
Week 8	حقوق الإنسان الاجتماعية
Week 9	حقوق الإنسان الثقافية
Week 10	حقوق الإنسان الاقتصادية
Week 11	ضمانات الديمقراطية حقوق الإنسان الدولية
Week 12	ضمانات حقوق الإنسان الإقليمية
Week 13	ضمانات الديمقراطية حقوق الإنسان الداخلية (الوطنية)
Week 14	الجزاء المترتبة على المساس بالديمقراطية و حقوق الإنسان
Week 15	امتحان

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	كتاب/ حقوق الانسان (تطورها، مضامينها، حمايتها) د. رياض عزيز هادي.	Yes

Recommended Texts	كتاب/ حقوق الانسان د. حميد حنون.	No
Websites	https://www.noor-book.com/ https://www.un.org/ar/about-us/universal-declaration-of-human-rights https://ar.wikipedia.org/wiki/	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>General Physics</u>		Module Delivery
Module Type	<u>Support</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>MBO 11003</u>		
ECTS Credits	<u>6</u>		
SWL (hr/sem)	<u>150</u>		
Module Level	1	Semester of Delivery	1
Administering Department	Forensic	College	Science
Module Leader	Amer Basim Shaalan	e-mail	ame72r@kus.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	N.A	e-mail	N.A
Peer Reviewer Name	N.A	e-mail	N.A
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	6. To have knowledge about General Physics basic principles like Mechanics of motion, liquid mechanics and electricity.

	7. To get skills in solving mathematical problems that related to physics subjects. 8. To get practical skills in managing physics experiments in the lab. and record measurements and then calculate required quantities. 9. Analysis the physical information in syllabus and be able to make conclusions by joining between physical concepts. 10. To be able to apply his knowledge in physics in market.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	12. Save in memory basic principles and laws of physics. 13. Produce scientific concepts by joining between physical principles. 14. Joining physical concepts to produce more complicated concepts. 15. The ability to make conclusions by analysis the physical information. 16. The ability to apply all his knowledge to solve problems in reality. 17. To be able to run the devices and apparatus in the lab. 18. Assemble devices and make an experiment to prove physical relation. 19. Discuss the results get from running experiment in the lab. 20. Make reports from theory to conclusion about any physical concept proved in the lab.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Measurement units, Motion in one dimension, path and displacement, velocity and acceleration. [9 hrs] Free fall motion, gravity, projectile path. [8 hrs] Vector Analysis, Unit vector, Vector addition and subtraction, resultant vector and its direction. [10 hrs] Motion in two dimensions, concept of negative acceleration, average and instantaneous velocity and acceleration. [9 hrs] Revision problem classes [5 hrs] Newton laws of motion, principle of continuity, equilibrium, action and reaction, force analysis diagram. [12 hrs] Circuits and electricity, Current, Voltage, Resistance. [10 hrs] Fluid Mechanics, Pascal principle, Archimedes principle, Pressure, Bernoulli equation in fluid flow. [9 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking

skills. This will be achieved through classes and by considering type of simple experiments involving some sampling activities that are interesting to the students.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	72	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	78	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	5.5
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	4	10% (10)	2,4,6,10	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	Physical unit systems and unit conversion
Week 2	Motion in one dimension: velocity and acceleration
Week 3	Free fall motion and gravity
Week 4	Vector analysis: vector addition and subtraction

Week 5	Unit vector and vector resultant calculation
Week 6	Motion in two dimension: velocity and acceleration calculations
Week 7	Mid-term Exam
Week 8	Newton first law of motion: object in equilibrium concept
Week 9	Newton second law of motion: acceleration and deceleration
Week 10	Newton third law of motion: action and reaction
Week 11	Electricity: current, voltage and resistance, Ohm's law
Week 12	Electric circuits: series and parallel circuits
Week 13	Fluid mechanics: pressure and Pascal Principle
Week 14	Archimedes principle
Week 15	Bernoulli equation in fluid flow
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to diagrams and report writing
Week 2	Lab 2: Surface tension
Week 3	Lab 3: Force equilibrium
Week 4	Lab 4: Static and dynamic friction
Week 5	Lab 5: Ohm's law
Week 6	Lab 6: Series and Parallel circuits
Week 7	Lab 7: Density of materials

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Applied Physics by Schaum 2013	No
Recommended Texts	Physics for scientists and engineers by Serway 2004.	No
Websites	https://www.coursera.org/browse/physical-science-and-engineering	

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 (فيد 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	<u>Organic chemstery</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR1228</u>		
ECTS Credits	<u>7</u>		
SWL (hr/sem)	<u>175</u>		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader	Mohammed Abdul Baset	e-mail	Mohammedbaset1980@gmail.com
Module Leader's Acad. Title	Asst. Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	General chemstery	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	On completion of this module students should be able to:

أهداف المادة الدراسية	1.Understand the structures of organic molecules and recognize and name examples of them. 2.Predict the properties and reactions of a molecule from its structure. 3.Discuss the reactions of common organic compounds. 4.Design the synthesis of a simple molecule from available starting materials. 5.Understand the molecular basis of life. 6.Safely perform a simple chemical synthesis in the laboratory. 7.Understand the structures of organic molecules and recognize and name examples of them. 8.Predict the properties and reactions of a molecule from its structure. 9.Discuss the reactions of common organic compounds. 10.Safely perform a simple chemical synthesis in the laboratory.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module you will be able to... 1. Evaluate and choose appropriate reducing or oxidising agents for selective functional group transformations 2. Design protecting group strategies to enable chemoselective transformations to be carried out 3. Perform retrosynthetic analysis on complex organic molecules 4. Devise multi-step syntheses of complex organic molecules 5. Discuss the mechanisms of important organic transformations 6. Explain how synthetic procedures can be modified to allow the simultaneous generation of a wide range of structurally related compounds and address environmental issues
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Module content: First part:[43h] • identify and draw organic compounds • provide the IUPAC name for some organic compounds • classify alcohols • explain the properties of alcohols and ethers Second part:[43] • Some organic chemistry fundamentals, basic concepts and terminology • Naming and classification of organic compounds • Basic reactions of alcohols, ethers and carbohydrates • Natural polysaccharides: modification and utilization in various applications • Group work (including presentation and evaluation of the other group works)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	

	This module builds upon the entry-level knowledge of students covered in A-Level Chemistry. It introduces basic chemical concepts within the context of Organic Chemistry, and starts to develop the more specialist knowledge of organic reaction required for later modules. The latter will be further developed in the Organic Chemistry 2 module. The module will include: 1. General concepts in organic chemistry for predicting atom and electronic structure of molecules, stability, reactivity and molecular properties (bond strength, pH etc.) 2. General concepts and mechanisms underlying organic reactions and ability to draw the mechanism for a given reaction or to give reagents required for an organic reaction.
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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	6.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	89	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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. Report	1	10% (10)	Continuous	
		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	An Introduction to Organic Chemistry
Week 2	Nomenclature of hydrocarbon
Week 3	Nomenclature of hydrocarbon and stereo chemistry
Week 4	Hydrocarbons
Week 5	Unsaturated Hydrocarbons
Week 6	Exam
Week 7	Aromatic Hydrocarbons
Week 8	Organic Halogen Compound
Week 9	Alcohols and Phenols
Week 10	Ethers, Aldehydes and ketones
Week 11	Cyclic compound
Week 12	Carboxyl acid, Esters and Sulfonic acid
Week 13	Nitro compounds, Amines and Amides
Week 14	Review Week
Week 15	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Material Safety Data Sheet (MSDS)
Week 2	Lab 2: Determination of melting points
Week 3	Lab 3: Determination of boiling points
Week 4	Lab 4: Recrystallization
Week 5	Lab 5: Density of Some Organic Compounds
Week 6	Lab 6: exam
Week 7	Lab 7: Identification tests of Alkanes, Alkenes, Alkynes and Aromatic
Week 8	Lab 8: Identification tests of primary, secondary and ternary alcohol
Week 9	Lab 9: Identification tests of Ketones and Aldehydes
Week 10	Lab 10: Identification tests of flash point
Week 11	Lab 11: exam theoretical
Week 12	Lab 12: exam practical
Week 13	Application by identification organic compound
Week 14	Application by identification organic compound
Week 15	Review before final exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	J. Clayden, N. Greeves and S. Warren, Organic Chemistry (Second Edition), Oxford University Press, 2012, ISBN 0-19-927029-5 (essential core text)	Yes
Recommended Texts	C. Willis and M. Wills, Organic Synthesis, (Oxford Chemistry Primer 31), Oxford University Press, 1995, ISBN 0-19-855791-4	No
Websites	ELE page: https://vle.exeter.ac.uk/course/view.php?id=9255	

Grading Scheme

مخطط الدرجات

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

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MODULE DESCRIPTION FORM

نموذج وصف مادة اللغة العربية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>اللغة العربية</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☐ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>MPH12011</u>		
ECTS Credits	<u>3</u>		
SWL (hr/sem)	<u>75</u>		
Module Level	1	Semester of Delivery	2
Administering Department	MPH	College	SCI
Module Leader	Dr. Ahmed kahlaf	e-mail	Ahmed.k@kus.edu.iq
Module Leader's Acad. Title	lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	none	e-mail	none
Scientific Committee Approval Date	11/06/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	1- تعلم العربية السليمة كونها اللغة الرسمية للوطن 2- اللغة جوهر الهوية ورمزها 3- اللغة تختلف عن اللهجة، فالأولى عالمية والثانية محلية
أهداف المادة الدراسية	

	4- توظيف المفردات الفصيحة في الصياغة الأكاديمية للبحوث العلمية مترجمة بنظيرها الفصيح 5- التمكن من كتابة البحوث والمقالات ذات المحتوى العلمي الصرف باللغة العربية الفصحى 6- تجنب الأخطاء الشائعة في الكتابة واختيار المفردات الصائبة 7- إثراء الخزين المعجمي لدى الطالب للمساعدة في بناء كاريما التواصل الكلامي 8- الاطلاع على نماذج من الأدب العربي شعرا ونثرا لما لها من اساس في بناء الجانب الثقافي المتنوع لدى الطالب 9- كتابة الاعداد يتمكن فضلا الكتابة الصحيحة في صياغة الطلبات الرسمية 10- التعرف على الدرس الصوتي في اللغة العربية وعلاقته بعلم الفيزياء
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	انتهاء مفردات المادة الدراسية يكون الطالب متمكنا من: 1- الكتابة السليمة خالية من الأخطاء 2- التعبير العلمي الأكاديمي الصحيح 3- استعمال المفردات الفصيحة توظيفا ونطقا 4- اضافة رصيد لغوي ومفاهيم جديدة لمعاني الكلمات 5- القدرة على المخاطبة الادارية في الطلبات الرسمية
Indicative Contents المحتويات الإرشادية	1- كل تخصص لغته التي تسمى اليه، وتدل عليه، ولغة كل علم تتبع من طبيعته كنهه، فالاختصاصات العلمية لها معجم خاص بها يعبر عن جوهرها ومضمونها، فضلا عن المصطلحات الخاصة بها التي تدل عليها، وكذلك المصادر العلمية التي يرجع اليها، والحال كما في اللغة الأدبية؛ فهي ايضا لها مفرداتها وطريقة كتابتها والتعبير بها وعبرها، ومصطلحاتها الخاصة بها التي تعبر عنها وتدل عليها. [4 hrs] 2- لمعاجم - بشكل عام - على اختلاف موارها تمثل محتوي وكفا لمفردات اي لغة مقترنة بالشرح والتفسير لتلك المفردات، اما المعاجم في اللغة العربية فهي واسعة ومتنوعة؛ فهناك معاجم غير معجمات اللغة، فالعربية فيها اول معجم جغرافي في التاريخ، معجم البلدان - (ياقوت الحموي)، فضلا عن المعاجم المتخصصة في جزئية معينة، مثل معجم البلاغة، فضلا عن تنوع المدارس في تأليف المعاجم وتبويبها وطريقة البحث عن المفردة فيها. [4 hrs] 3- علامة تدرج ضمن حقل علم السيميائية او السيميائية، وعلامات الترقيم من المواضيع المهمة بالأخص في البحوث الأدبية، بغض النظر عن التخصص، سواء كان التخصص علميا، او انسانيا، من هنا تأتي أهمية علامات الترقيم؛ فلها دور سيادي، ودلالي مهم في الكتابة النصية وفي بناء النص، فهي تُسهّل الفهم على القارئ، وتوضح المعنى المقصود، عبر الفرة والتلفظ بالعبرة، فعلا من الترقيم خير وسيلة لإظهار الصراحة وبيان الوضوح في الكلام المكتوب؛ لأنه يدل الناظر إلى تلك العلامات الاصطلاحية وعلى العلاقات التي تربط أجزاء الكلام بعضها ببعض بوجه عام، وأجزاء كلّ جملة بوجه خاص، وكما يقول المتخصصون عن علامات الترقيم: بأن الوقف ليس مستقلاً، وإنما هو من توابع التفكير، أي: إنّ السكتات المارة بمقادير مضبوطة في مواضع معينة، ليست مجرد محطات تنفسية بالمعنى البيولوجي للتنفس، وإنما في المقام الأول وقف معنوي. فالعبرة من الناحية اللغوية ليست بأن يستعيد القارئ نفسه، بل المهم أن يتعاطى القارئ السكت بمقادير معلومة، وفي مواضع محددة من السلسلة المنطوقة رفعا للبس، وصونا لمقصد المتكلم عن التبدل، فهذه العلامات تجسيد لمشاعر الكاتب وقدياته فيها. [6 hrs] 4- الأسلوب الكتابي يمثل بصمة للكاتب الذي يصدر عنه، ويتجسد عند القارئ، ولكل كاتب أسلوبه الخاص به، ينعكس ذلك في نتاج الكاتب، وللأسلوب أنواع مختلفة، فهناك الأسلوب العلمي، والأسلوب الأدبي، والأسلوب الخطابي، ولكل نوع خصائصه، وقالبه الذي يتكون فيه. [4 hrs] 5- لأحداث التي تقترب بالزمن تمثل الأفعال، والأفعال في العربية تتناظر الأزمنة في اللغات الأخرى من جانب معين، او من جزئية معينة، والعربية تحتوي على عدد كبير من الجذور، جذور الأفعال، ففي العربية أفعال ثلاثية ورباعية وخماسية وسداسية، والفعل جزء مهم من اجزاء الكلام الاساسية، فضلا عن الجانب الصوتي في هذه الجذور، فعلم (الأصوات الفيزيائي) من العلوم المهمة في اللغة العربية، إذ يُعد علم (الأصوات الأكوستيكي) علما أقرب إلى الفيزياء منه للعلوم الإنسانية، وهو يمتد المرحلة الوسطى بين علم الأصوات النطقي وعلم الأصوات السمعي، وعلاقته مع اللغة العربية انطلاقا من البذرة الأولى في دراسة مخارج الحروف فيزيائيا وداليا. [4 hrs] 6- الكلام عن الشعر لا ينتهي؛ فالشعر تجسيد لمشاعر الفرد المتمثل بالشاعر، والمشاعر الجمعية للانسانية جمعاء، فهو مورد لدى كل بني البشر، والشعر العربي القديم كان بمثابة نشيدا وطنيا لهم، يمثل هويتهم الثقافية الرصينة ويمثل سجلا لتاريخهم وأمجادهم، على اختلاف اغراضه من غزل ومدح ورثاء وغير ذلك، وبحور الشعر في الشعر العربي مبنية بناء

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	صناعة شخصية متكاملة للطالب الجامعي من حيث التخصص العلمي الدقيق والتخصص المساند
Indicative Contents المحتويات الإرشادية	صنعتا فريدا عبر التفاعلات التي وضعها الخليل بن احمد الفراهيدي ووضعت فلسفتها وقواعدها، والشعر رصيد ثقافي، وحياة في الكلام، وزينة ورونقا يضاف على شخصية الفرد والمجتمع بشكل عام. [4 hrs]
	7- الهمزة من المواضيع الاجرائية لدى الفرد الكاتب، بغض النظر عن التخصص، فيحتاجها كل فرد ناطق كاتب بها، فلها قواعدها التي تصدر عنها، وتكتب بالشكل السليم منها، فموضوع رسم الهمزة من الاهمية بمكان؛ فرسمها يغير من المعنى، فلا بد من وضعها ورسمها بالشكل الصحيح لتوخي التعبير الدقيق عن المعنى المقصود. [4 hrs]
	8- المفاعيل في اللغة العربية، من الموضوعات المهمة في درس اللغة العربية، ولا بد لكل دارس من معرفتها بشكل عام، وهناك آراء مختلفة بين البلاغيين والنحويين عن المفاعيل، هل ان تلك المفعولات فضلة، أم انها ركن رئيس في الجملة؛ فالبلاغيون يرون انها فضلة في الجملة، وأن ركني الجملة الأساسيين هما: الفعل، والفاعل، وأما البلاغيون فيرون: إنها ليست فضلة، وإنما هي ركن أساسي في الجملة؛ لأن كل كلمة تدل على معنى في الجملة، وإذا ما دلت على معنى فلا تُعد فضلة، وإنما هي ركن رئيس في الجملة وبنائها، ورأي البلاغيين أقرب للصواب من رأي النحويين، فدراستها في العربية لغير المتخصصين مما يضيف لهم خزينا تعبيريا متنوعا. [4 hrs]
	9- من المعروف وجود ظاهرة الأخطاء اللغوية نحوية كانت أو املائية أو اسلوبية، عند متحدثي اللغة العربية وبالأخص عند غير المتخصصين بها ولا سيما من يعملون في مجال الاعلام، وهذه الظاهرة اتسعت وزاد انتشارها في العصر الحديث، فأخذت هذه الأخطاء تغزو مجالات الدراسة جميعها، من ذلك موضوع (العدد) في اللغة العربية، فنجد كثيرا من الطلبة وكذلك من عامة الناس يستعملون الأرقام بدلاً من كتابتها بالحروف؛ وذلك لتجنب الوقوع في الخطأ وهذا دليل ضعف لا يليق بالدارس أياً كان تخصصه؛ ولهذا فموضوع العدد وقواعد كتابته في اللغة العربية موضوع لا غنى عنه في زمن لغة الأرقام. [4 hrs]
	10- هناك مجموعة من الالفاظ متداولة بشكل كبير، تُستعمل في غير مكانها الصحيح، وفي غير ما وُضعت له وهذه الالفاظ تُستعمل في المخاطبات الرسمية الادارية بالمعنى غير الصحيح او الدقيق الذي تحمله تلك الالفاظ من معاني، فضلا عن أهمية تومي الدقة في هذه الالفاظ توظيفها في الطلبات الرسمية التي تُقدم على اختلاف موضوعاتها، فالطلب لا بد من ان يكون مختصرا مركزا، يعطي الفكرة الموجزة، والهدف المقصود منه ازاء صاحب الادارة الذي يُقدم اليه الطلبات، وما في ذلك من ايجابيات العمل في التخفيف واختصار للجهد والوقت في تنفيذ المهام الادارية الموكلة الافراد على اختلاف درجاتهم. [4 hrs]

Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.8
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	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 الأسبوعي النظري	
	Material Covered
Week 1	الفرق بين اللغة العلمية واللغة الأدبية
Week 2	المعاجم العربية وأنواعها
Week 3	علامات الترقيم
Week 4	الأسلوب
Week 5	الأفعال – أنواعها وتقسيماتها
Week 6	نماذج مختارة من الشعر العربي القديم – الشعر الإسلامي – الشعر الأموي
Week 7	Mid-term Exam
Week 8	رسم الهمزة / همزة الوصل وهمزة القطع
Week 9	كتابة الهمزة بداية الكلام وآخره
Week 10	المبتدأ والخبر – مهارات كتابة العدد
Week 11	المفاعيل / المفعول به – المفعول لأجله
Week 12	المفعول معه – المفعول فيه – المفعول المطلق
Week 13	النثر العربي
Week 14	الأخطاء الشائعة – طريقة كتابة الطلبات الرسمية

Week 15	نماذج مختارة من الشعر العباسي والشعر الحديث
Week 16	Preparatory week before the final Exam
Learning and Teaching Resources مصادر التعلم والتدريس	
	Texts Available in the Library?
Required Texts	كتاب: العربية الجامعية لغير المتخصصين / د. عبده الراجحي كتاب: النحو التطبيقي / د. عبده الراجحي كلا
Recommended Texts	الصرف التطبيقي / د. عبده الراجحي النحو الوافي / عباس حسن تاريخ الادب العربي / شوقي ضيف كلا
Websites	شبكة الفصحى لعلوم اللغة العربية

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Fundamental of Forensic Science		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR1106		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader	Firas H. Abdulrazzak	e-mail	firas_ald2020@yahoo.com
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	1-Forensic Science is basically the application of science to law.

أهداف المادة الدراسية	2-Forensic science is used to investigate criminal cases involving a victim, such as assault, robbery, kidnapping; rape, murder and civil cases such as forgeries, fraud, or negligence.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module students will be able to: 1. Show understanding of the role of physical forensic methods in forensic practice. 2. Demonstrate knowledge of the primary evidence types, their transfer and persistence. 3. Demonstrate understanding of emerging developments in forensic science. 4. Consider a broad range of forensic techniques to determine the examination strategy, sequencing, and probative value. 5. Demonstrate understanding of quality standards in respect of scene examination.
Indicative Contents المحتويات الإرشادية	A synopsis of the curriculum [15 h] This module will develop students' appreciation of a range of physical techniques applied to the collection of bulk and trace evidence materials in forensic science. Students will look more deeply into aspects of physical evidence and will deal with the practical issues of item examination, legal process and general procedure associated with the collection and submission of a range of forensically-relevant materials. Inclusive module design [15 h] The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services. The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas: a) Accessible resources and curriculum b) Learning, teaching and assessment methods Internationalisation [14 h] Forensic science is an inherently international subject with physical laws discovered and techniques developed and refined by scientists across the globe. It is facilitated by well-defined conventions in terminology and mathematical modelling which allow complex concepts to be communicated across language barriers. This module introduces students to the work of these pioneers, as well as the fundamentals behind it and so enables them to interact with this community. Where possible, the reading list has been chosen, in part, to demonstrate the diversity of backgrounds of forensic scientists working in the field.

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	
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	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.
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Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	56	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	44	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	3.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

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

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	<i>The concept and importance of forensic science</i>
Week 2	<i>Historical development of forensic evidence</i>
Week 3	<i>Types of criminal evidence</i>

Week 4	<i>Forensic evidence and material traces</i>
Week 5	The importance of the genetic fingerprint in achieving personality
Week 6	<i>Fingerprints and the use of nanotechnology in detection</i>
Week 7	<i>Forensic forensic medicine</i>
Week 8	<i>Forensic chemistry</i>
Week 9	<i>Criminal toxicology</i>
Week 10	<i>Forgery of passports and counterfeit banknotes</i>
Week 11	<i>Examination of traces of weapons and tools</i>
Week 12	<i>Crime scene and preservation procedures</i>
Week 13	<i>Electronic forensic tool</i>
Week 14	<i>Forensic engineering</i>
Week 15	<i>exam</i>
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: انواع الادلة الجنائية
Week 2	Lab 2: اهمية البصمة الواثية في تحقيق الشخصية
Week 3	Lab 3: البصمات واستخدام تقنية النانو في الكشف عنها
Week 4	Lab 4: الكيمياء الجنائية
Week 5	Lab 5: السموم الجنائية
Week 6	Lab 6: تزوير الجوازات وتزييف الاوراق النقدية
Week 7	Lab 7: مسرح الجريمة واجراءات المحافظة عليه

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
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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	<u>Laboratory Instrument & Techniques</u>		Module Delivery
Module Type	<u>Support or related learning activity</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR24021</u>		
ECTS Credits	<u>6</u>		
SWL (hr/sem)	<u>150</u>		
Module Level	2	Semester of Delivery	4
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	Asmaa Mansour Al-Hakeem	e-mail	asmaa.mansoor@kus.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Asmaa Mansour	e-mail	asmaa.mansoor@kus.edu.iq
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

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

أهداف المادة الدراسية	This module aims to introduce students to Microscope and types , the spectroscopic and chromatographic techniques , Electrophoresis , Balance , Temperature control instrument , PCR & RT-PCR and provide them with hands-on experience of laboratory instrumental analysis, further developing the practical skills gained in the Laboratory Chemical & Biological module. This module also aims to provide training to the students on the research methodology and skills, <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.
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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	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	89	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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 Magnetic 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 Magnetic 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 : Spectrophotometry (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; FWAPCM S 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

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Statistics and forensic applications		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR23017</u>		
ECTS Credits	<u>4</u>		
SWL (hr/sem)	<u>100</u>		
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	01/09/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	none	Semester	2/1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	On completion of this module the learner will/should be able to;

أهداف المادة الدراسية	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 interferences 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 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]

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.
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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	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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 الأسبوعي 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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>Molecular Biology</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR24119</u>		
ECTS Credits	<u>7</u>		
SWL (hr/sem)	<u>175</u>		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader	Mohammad Jawad Khazal	e-mail	E-mail
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	21. This module aims to provide a strong foundation in molecular biology and

أهداف المادة الدراسية	biochemistry that will be built upon in subsequent modules. 22. Core biological molecules will be examined with a focus on their structure and function. 23. Teaching will be delivered using a combination of lectures, workshops and practicals. 24. Problem solving and quantitative skills will be developed through complementary workshops using case studies, applications and examples based on lecture content. 25. Experience of biochemical techniques such as chromatography and enzyme kinetics will be gained through practicals. 26. 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 the 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) 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	6.3
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)

المناهج الأسبوعية النظرية

	Material Covered
Week 1	Introduction and brief historical review
Week 2	Experiments to prove DNA is the genetic material
Week 3	The second evidence using virus (phage) model
Week 4	DNA and RNA as macromolecules: base structure and rules
Week 5	Eukaryotic and prokaryotic DNA
Week 6	Chemical and physical properties of DNA: the hyperchromic effect
Week 7	Haploid chromosome

Week 8	Chromatin organization and chromosome structure
Week 9	DNA replication
Week 10	DNA repair pathways
Week 11	RNA structure and function
Week 12	RNA transcription and post transcription events
Week 13	Translation: protein synthesis
Week 14	Epigenetics
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Preparation of buffers
Week 2	Lab 2: Laboratory safety rules
Week 3	Lab 3: DNA extraction
Week 4	Lab 4: Instruments and equipment in molecular lab
Week 5	Lab 5: Polymerase chain reaction
Week 6	Lab 6: Gel electrophoresis
Week 7	Lab 7: Exam
Week 8	Lab8:Chromosomal DNA extraction from bacteria
Week 9	Lab9:Chromosomal DNA extraction from plant
Week 10	Lab10:Plasmids isolation and extraction
Week 11	Lab11:Protein
Week 12	Lab12:Mutations
Week 13	Lab13:Real time PCR
Week 14	Lab14:Seminars
Week15	Review before final exam

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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	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	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR24023</u>		
ECTS Credits	<u>4</u>		
SWL (hr/sem)	<u>100</u>		
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	01/09/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	none	Semester	2/1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	إذا كان الهدف الأسمى للتحقيق الجنائي هي البحث والتحري عن الحقيقة ، فإن المحقق وحده لا يمكنه القيام والموضوع وعدم الإلمام بكل جوانبها بذلك بمفرده خصوصاً إذا كانت الجريمة المرتكبة يشوبها اللبس

أهداف المادة الدراسية	أو ي يصعب على المحقق فهمها وتحليلها ، ليس بسبب لاسيما إذا تعلق التحقيق بوقائع لها طابع علمي تكون المحقق في حد ذاته وخبرته القانونية لا تتيحان له إدراك نقص الذكاء او الخبرة او 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	تتمثل مهمة الخبير بعدد من الخصائص وهي مهمة فنية ومحددة وذات طابع قضائي وإجراء اختياري للمحكمة ، وعلى هذا الأساس يجب على الخبير أن يمتثل المهات الآتية: 1- هارة فنية أن ما تتميز به الخبرة أنها ذات طابع فني ولجوء القاضي أو المحقق إلى الاستعانة بالخبير إنما تكون المسألة المطروحة في الدعوى الجزائية ذات طابع فني لا يستطيع كل منهما أن يقدرها حسب مؤهلاته وخبراته ، وعليه فإن مهمة الخبير تفترض استعانة الخبير بمعلوماته الفنية وتبعاً لذلك لا يعد خبير من يكلفه القاضي بمعاينة يعتمد فيها على حواسه فقط ، ولكن يعد خبيراً من كلفته المحكمة بأن يجري معاينة ويأتي بنتائج هذه الملاحظة إذا كانت تقتضي تطبيق أساليب علمية أو فنية. 2- هارة 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 يعبر للخبير في صورة واضحة ومحددة موضوع مهمته وفي بعض الحالات يضع له أسئلة معينة يتعين على الخبير أن يجيب عنها ، ولا يجوز أن تكون مهم الخبير عامة تشمل إبداء رأي في الدعوى ، إذ يعد ذلك تخلياً من القاضي عن رسالته . 3- هارة قضائية يؤد بذلك أن مسألة اللجوء إلى الخبرة أمر تقررته المحكمة وحدها وهو أما بناء على طلب من الخصوم في الدعوى الجزائية أو استناداً إلى قرار تتخذه من قاضها حسب تقديرها للمسألة المعروضة أمامها وحاجتها إلى رأي فني. وأن مسألة اختيار الخبير تعود إلى المحكمة والتي تعتمد في ذلك بمعارفه الفنية، ولها أن تستشير الخصوم في هذا الشأن ولكنها غير ملزمة بطلبهم، فالخبير لا يرس مهمته إلا بانتداب قضائي، إلا بانتداب قضائي، ويؤدي مهمته تحت إشراف القاضي، وخلاصة عمل الخبير التي يتضمنها تقريره تخضع في النهاية لتقدير القاضي . 4- هارة إختياريّة 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 . وتصفاً لذلك قضت محكمة النقض المصرية بأنه " لا إخلال بحق الدفاع إذا لم تجب المحكمة طلب تعيين خبير لفحص العقد العقول بتزويره متى كان فيما ذكر حكمها عن طريق التزوير وثبوته على المتهم ما يفيد أن المحكمة اقتضت بما شاهده وما تبينته من وقائع الدعوى وأقوال الشهود بحصول التزوير وبأنه لم تكن في حاجة إلى الاستعانة برأي فني في ذلك " ، وقضت محكمة تمييز العراق بأن " المحكمة غير ملزمة باستدعاء خبير آخر إذا كانت الواقعة المبينة عنها واضحة وضوحاً كافياً ، وفي هذه الحالة يتعين على المحكمة تسبب رفضها " .
Indicative Contents المحتويات الإرشادية	إذا ان على المحقق أن يتفرغ لأعمال البحث والتحقيق كالاستجواب ومناقشة الشهود والكشف والتفتيش وجمع المعلومات الأخرى فإن العناية بالأدلة وفحصها ينبغي أن تترك لخبير متخصص في هذا النوع من العمل ، ومن ثم فإن الخبير هو ذلك الشخص الذي اكتسب خبرة عملية وفنية لدراسات علمية كالطب البشري أو المحلل الكيميائي أو نتيجة لممارسة مهنة معينة فترة من الزمن كإرباب الحرف والصناعات كالتجارين والاديين وغيرهم . ومن الجائز أن يدلي الخبير برأيه شفويّاً 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 وملابسات وكلما زاد هذا التعاون بين الاثنان كلما سهل اكتشاف الجريمة ومعرفة مرتكبها ، علماً أن المحقق أو القاضي غير ملزم بالأخذ برأي الخبير طبقاً لمبدأ الاقتناع الذاتي للقاضي وتكون رأيه واعتقاده بالأدلة أو البراءة في الأمور الجنائية حسب اعتقاده فهو خبير الخبراء وله كلمة الفصل في الأمور الجنائية. أن خويل 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	التي 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 إلمامه بالأمور والمسائل التي ربما يتوقف الوصول للدليل عليها والذي يكون هو دليل إثبات في ارتكاب الجريمة ونسبتها لفاعلها، فعلى سبيل المثال لا يمكن للباحث الجنائي أو القاضي التوصل إلى كفاءة الما السامة التي يستعملها الجاني في إحداث الوفاة ما لم يستعين بأحد أصحاب الاختصاص من الكيميائيين لمعرفة ذلك. سيما أن هناك العديد من القضاة التي تلعب فيها الخبرة الدور الفاعل والرئيس في الفصل في موضوعها وكشف ملابسات الجريمة. وأحياناً تكون الخبرة هي البينة الوحيدة التي يمكن بواسطتها التوصل إلى المراد اثباته، وبذلك فإن الخبرة طريقة من طرق التحقيق، ومن مفارقات الحال أنه قد تكون الخبرة على نقض أدلة عديدة، وبالرغم من ذلك يعتمد الباحث لأنها تبني على اليقين من ذوي الاختصاص ومن النادر يتسرب إليها الشك والاحتمال. ويجبل 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 المقتضى أو القاضي مهمة ذات طبيعة خاصة مالم تتوافر فيه صفة الإدراك والاستنتاج فضلاً عن الأمانة والأخلاص.

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- لاقه الخبير الجنائي بالخبير المدني
Week 3	3- تنظيم القانوني للخبير الجنائي
Week 4	4- مسؤوليه القانونيه للخبير الجنائي
Week 5	5- ات عمل الخبير الجنائي
Week 6	6- حمايه القانونيه للخبير الجنائي
Week 7	7- بلاقه بين المحقق والخبير
Week 8	8- صائص الخبير الجنائي

Week 9	نحان	-9
Week 10	المسؤولية المدنية للخبير	10
Week 11	المسؤولية الجنائية للخبير	11
Week 12	اجاءات انتداب الخبير الجنائي	12
Week 13	رسوم الخبرة الجنائية	13
Week 14	القيمة القانونية للخبرة الجنائية	14
Week 15	Exam	
Week 16	Preparatory week before the final Exam	

Delivery Plan (Weekly tot. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered	
Week 1	دقة الخبير الجنائي بالخبير المدني	-2
Week 2	مسؤولية القانونيه للخبير الجنائي	-4
Week 3	ات عمل الخبير الجنائي	-5
Week 4	بلاقيه بين المحقق والخبير	-7
Week 5	المسؤولية الجنائية للخبير	11
Week 6	القيمة القانونية للخبرة الجنائية	14
Week 7	القيمة القانونية للخبرة الجنائية	14

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Biochemistry		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR23013</u>		
ECTS Credits	<u>6</u>		
SWL (hr/sem)	<u>150</u>		
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	01/09/2023	Version Number	1.0

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

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

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

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

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	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.

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	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 الأسبوعي 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	Lab 11: 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
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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>Forensic Computer Applications</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☒ Practical ☒ Seminar
Module Code	<u>FOR24022</u>		
ECTS Credits	<u>4</u>		
SWL (hr/sem)	<u>100</u>		
Module Level	2 nd	Semester of Delivery	2
Administering Department	FOR	College	Science
Module Leader	Dr. Nada Abdullah Rasheed	e-mail	Nadaar63@kus.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Lecturer: Osama Mohammed	e-mail	osama20111989@kus.edu.iq
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	17/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Basic Computer Science	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	This course forensic computer application includes interactive lectures and practical applications to teach students the remaining MATLAB functions for the purpose of enhancing

أهداف المادة الدراسية	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 (nntool) ,Create Network ,Train the Perceptron, Export Perceptron, Results to Workspace, Clear Network/Data Window, Importing from the Command Line, Save a Variable to a File and Load It Later, Applications in forensic Image Analysis, Classification by Association, Multiple Instance Learning, Bag of Visual Words, Dealing with Imbalanced Data. [12 hrs]
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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.

	- 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. - Forgery detection and authentication: Explore techniques for detecting image forgeries, such as copy-move forgery detection, splicing detection, and image tampering analysis. - 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. - 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. - 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. - 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. - 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. - 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	60	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	40	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	2.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	5% (5)	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 Functions, 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 Image 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	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	
Administering Department	FORN	College	SCI
Module Leader	Dr.Fatimah Khalaf	e-mail	Fatimah.Khalaf @kus.edu.iq
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	Name (if available)	e-mail	Fatimah.Khalaf @kus.edu.iq
Peer Reviewer Name	none	e-mail	Fatimah.Khalaf @kus.edu.iq
Scientific Committee Approval Date	11/06/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	اربكب نظام البعث في العراق إبان حكمه عدد كبير من الجرائم المختلفة، واختلافها يلزم بيان مفاهيم وتعريف للطلاب ليكون على معرفة ودراية بما يمر به مما لها علاقة

أهداف المادة الدراسية	بمادة المنهج أ ج ، كمفهوم الجريمة وأقسامها، والجرائم الدولية التي حُكِّم عليها قيادات وألام نظام البعث وفق قانون المحكمة الجنائية العراقية العلى ١، وعليها سيكون هذا الفصل في مبحثين، المبحث الأول في بيان مفهوم الجرائم وأقسامها، والمبحث الآخر في بيان جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العلى ١ لسنة ٢٠٠٥ م.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- تسليط الضوء على جرائم ما ارتكبتها نظامٌ جائرٌ في العالم ك لهُ على تعاقب الأَزمان كتلك التي ارتكبتها (نظامُ البعث) (على صعيد العراق خاصة ، والمنطقة الإقليمية عامة ، والعالم كُلِّه شمولاً). 2- لقد جثم نظامُ البعث البائد على صدر العراق والعراقيين زُهاء أربعة عقود يستقي سياسة تسلطه من رَضاع غُ تاة الطغاة جُقب 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 كُل من انتهج سبيل الحق وحب الوطن ؛ فرفض النهج البعثي العفن ، واكتوى بنار قمعه من صنوف المآسي والمحن. 3- لقد تحصَّل من هذا الواجب التربوي - التعليمي (الشرعي - الرسمي) أن تكلف لجنة وزارية مختصة تُعنى بوضع منهج يؤثِّق بعضاً من) جرائم النظام البعثي (؛ ليكون مبصراً حقيقة يشرف به الشباب الجامعي الحالي على ما مضى من حياة عقود من حُكم العراق بيد طاغية شيطان بهية إنسان فيستحضرون من إطلاعهم على أقصَله ومضامينها ما يجعلهم على هُدًى يدروون به كلَّ تسمية إعلامية تحاول تضليلهم ؛ فيمنعون به كلَّ عمى.
Indicative Contents المحتويات الإرشادية	ارأت اللجنة - التي عاش رئيسها وأعضاؤها كافة مدة الحُكم البعثي المُجرم ، وذاقوا من ويلات ا بصدق ومصاديق - بعد رحلة توثيقية □ بطشها ما يجعل هذا المنهج المقرر للظومة الأكاديمية الجامعية موضوعي حضورية ، وإلكترونية أن يأتي هذا المنهج المُقرر على مقدمة هي التي بين يدي الطالب الجامعي ، والقارئ يستنير بها للمضمون كلبدواعي تأليفه ، ومسوغات إقراره ، ودوافع تدريسه ، ثم أربعة أقصَل وُظف أولها لتوثيق) جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا عام ٢٠٠٥ م (، ودل ثانياً لكشف) الجرائم النفسية والاجتماعية ، وآثارها ، 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 واثب يضغ الحقائق مواضعها مما مرَّ العرض له ، والاستدلال عليه. لقد تضمن هذا المنهج ما جاء مفاتيح معرفية بيد الطالب الجامعي يقوى بها على كلِّ مُرتج حُبَّت رواية أكذوبته أي البعث وإعلامه المزيف ، وباعت ضميرها أنفس ترى أن تبقى إلى الآن ذليلة أسيرة ، ذليلاً تابِعاً.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	هذا الواجب التربوي - التعليمي (الشرعي - الرسمي) أن تكلف لجنة وزارية مختصة تُعنى بوضع منهج يؤثِّق بعضاً من) جرائم النظام البعثي (؛ ليكون مبصراً حقيقة يشرف بها الشباب الجامعي الحالي على ما مضى من حياة عقود من حُكم العراق بيد طاغية شيطان بهية إنسان ؛ فيستحضرون من إطلاعهم على أقصَله ومضامينها ما يجعلهم على هُدًى يدروون به كلَّ تسمية إعلامية تحاول تضليلهم ؛ فيمنعون به كلَّ عمى.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	30	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	1.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	20	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	0.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

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

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	المقدمة / جرائم نظام البعث وفق قانون المحكمة الجنائية العراقية العليا عام ٢٠٠٥ م
Week 2	الفصل الأول: ١, ٢. مفهوم الجرائم وأقسامها ١, ٢, 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. ٢,١,٢ . عسكرة المجتمع
Week 7	وقف النظام البعثي من الدين انتهاكات القوانين العراقية ٢,٢,١ . صور انتهاكات حقوق الإنسان وجرائم السلطة
Week 8	بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث ٢,٢,٣ . أماكن السجون والاحتجاز لنظام البعث
Week 9	الفصل الثالث الجرائم البيئية لنظام البعث في العراق.
Week 10	٢,١ . التلوث الحربي والإشعاعي وانفجار الألغام
Week 11	٢ . تدمير المدن والقرى) سياسة الأرض المحروقة
Week 12	تصفيف الأهوار ٢,٤ . 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.	No

	-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.	
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

Module Information			
Module Title	<u>Fundamentals of Fluids Detection and Secretions</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR23016</u>		
ECTS Credits	<u>6</u>		
SWL (hr/sem)	<u>150</u>		
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	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aim of this Module is : 1-to provide the student with an understanding of examination strategies for the range of body fluids encountered in forensic biology casework together with the science underpinning the interpretation of bloodstain patterns.

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

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	This module covers a wide variety of theoretical, conceptual and practical areas, which require a range of knowledge and skills at a more advanced level to be displayed and exercised. Delivery of its syllabus content therefore involves a diversity of teaching and assessment methods suitable to the learning outcomes of the module; these include formal lectures, structured tutorials (work closely integrated with the lecture material), practical exercises, and completion and submission of written coursework making use of appropriate forms of IT and VLE, and independent study.
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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	6.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	64	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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 الأسبوعي 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	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR23015</u>		
ECTS Credits	<u>6</u>		
SWL (hr/sem)	<u>150</u>		
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	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. The aim of the module is to introduce and explore the fundamental concept of human physiology and anatome from cellular functions through to systems that are responsible for homeostasis.

	2. The module aims to begin with the broader principles of how cells communicate and how cells function. 3. To explore key 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 thinking, problem solving and communication of scientific information.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module you will be able to... • 1. Demonstrate an integrated basic knowledge of the biomedical principles underpinning human health with forensic science . • 2. Demonstrate a basic awareness of the scientific principles underpinning the prevention, diagnosis and management of some important diseases • 3. With guidance, apply skills of critical thinking, problem-formulation and problem-solving.
Indicative Contents المحتويات الإرشادية	1-Cardiovascular physiology [10h] Structure and function of the heart and blood vessels from single cell to whole system. Cardiac electrical activity and its measurement. Perfusion and its control. Blood pressure regulation. Embeds a variety of anatomical and pathophysiological examples with reference to both biomedical and forensic applications throughout e.g. coronary heart disease. 2-Respiratory anatomy and physiology [10h] Structure and function of the respiratory tract from single cell to whole system. Lung mechanics and ventilation. Oxygen and carbon dioxide transport. Central and peripheral control of respiration. Embeds a variety of pathophysiological examples with reference to both biomedical and forensic applications throughout e.g, asthma 3 -Reproductive anatomy and physiology[15h] Structure and functions of the reproductive systems from single cell to whole system. Normal body control of the female reproductive system and hormonal

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

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	64	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	4.4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	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	Intruduction for Anatomy and Physiology Organizing Principles such as Homeostasis & Feedback Loops
Week 2	Cell, tissue , and Membrane
Week 3	Skelton,and muscular
Week 4	Nervous and endocrine system
Week 5	Cell Physiology & Membrane Transport
Week 6	Tissue Physiology,Neurophysiology and Sensory Physiology
Week 7	Endocrinology,Muscle Physiology
Week 8	Cardiovascular and Respiratory Physiology
Week 9	Immunology
Week 10	Lymphatic and Respiratory System
Week 11	Osmoregulatory Physiology

Week 12	Gastrointestinal Physiology
Week 13	Reproductive Physiology
Week 14	Digestive and Urinary System
Week 15	exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Erythrocyte Physiology
Week 2	Lab 2: Pulse and Pressure
Week 3	Lab 3: EEG and States of Consciousness
Week 4	Lab 4: Brain Imaging
Week 5	Lab 5: Electromyography & Dynamometry
Week 6	Lab 6: Electrocardiography
Week 7	Lab 7: exam
Week 8	Lab 8: Ventilation & Spirometry
Week 9	Lab 9 : Urinalysis
Week10	Lab10: View film “Fed Up”, food diary assigned
Week11	Lab11: Physiology of Adiposity; SOS of lab instructor
Week12	Lab12: Lower extremely bones
Week13	Lab13: 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

Module Information			
Module Title	<u>Analytical Chemistry</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR24120</u>		
ECTS Credits	<u>7</u>		
SWL (hr/sem)	<u>175</u>		
Module Level	1	Semester of Delivery	1
Administering Department	Forensic \FOR	College	science
Module Leader	Prof. Dr. Firas Habeb Abdulrazzak	e-mail	Firas_al2020@yahoo.com
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Prof. Dr. Firas Habeb Abdulrazzak	e-mail	Firas_al2020@yahoo.com
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The 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	27. Understand and describe the fundamental principles and operation of analytical techniques, including spectroscopy, chromatography and electrochemistry. 28. Undertake calculations associated to the calibration of instruments and analytical quantification, and evaluate experimental error. 29. Operate basic analytical techniques, develop problem solving skills and be familiar with good laboratory practice. 30. 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 Layer Chromatography, paper) and column chromatography.[15h] - Electrochemistry – Basic concepts, galvanic cells, standard potentials, Nernst equation, applications, problem solving, calculations and data presentation; Potentiometry - basic ion selective electrodes, pH electrode, applications. [14h] - Practical work on basic analytical techniques and laboratory good practice – Experiments on titration, electrochemistry, atomic emission spectroscopy and chromatography. [10h]

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	The assessment strategy is designed to provide students with the opportunity to demonstrate: - Understanding of fundamental principles of basic analytical techniques. - Know-how of the chemical analysis practice. - Competence to perform fundamental calculations. - Capacity for independent/critical thinking and problem-solving. - summative assessment for this module -Introduce the students to the fundamentals of the analytical techniques during the lectures. These would include the physical-chemical principles as well as design and operation of instrumental analytical techniques. - Provide hands-on experience in an analytical laboratory; including practice in sample preparation, operation and calibration of the instruments, validation, and analysis of unknown samples. - Encourage the development of their self-evaluation skills by describing the main sources of error during the practical experiments, nurturing problem-solving skills and critical thinking.
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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	6.1
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 الاسبوعي النظري

	Material Covered
Week 1	Introduction to Analytical Chemistry
Week 2	Units, Concentration and Stoichiometry
Week 3	Concentration types
Week 4	Statistical treatment of analytical data
Week 5	standard solution 1
Week 6	standard solution 2
Week 7	Titration 1
Week 8	Titration 2
Week 9	Exam
Week 10	Acids and bases
Week 11	Spectrochemical analysis 1
Week 12	Spectrochemical analysis 2
Week 13	Separation methods 1
Week 14	Separation methods 2
Week 15	Exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

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

Week 13	Techniques of paper chromatography
Week 14	Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	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	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR23018</u>		
ECTS Credits	<u>3</u>		
SWL (hr/sem)	<u>75</u>		
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	01/09/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	none	Semester	2/1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims	Upon completion of this module, the student can:

أهداف المادة الدراسية	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.
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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 الاسبوعي 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	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR23114</u>		
ECTS Credits	<u>6</u>		
SWL (hr/sem)	<u>150</u>		
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	01/09/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	FORN 104 (Molecular biology)	Semester	2/1
Co-requisites module	None	Semester	

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

أهداف المادة الدراسية	1-genetics begins with scientific research, which translates through clinical practice to touch the lives of patients and families with genetic disease on a daily basis. 2- This module aims to provide a lens through which to view the core aspects of this multidisciplinary subject, describing how and why genetics is important in the development, diagnosis and treatment of disease. 3-focus firstly on the basics of how genetic material is replicated, curated, and inherited, to enable an understanding of how genetic sequence variants lead to genetic disease, or to susceptibility to complex diseases. 4-Genetic research and disease often raises challenging ethical questions and considerations, which will also be explored in the module You will also explore the molecular mechanisms by which genes are regulated alongside the contribution and role of environment influences. 5- Overall the module link clinical genetics practice with internationally-leading research strengths at CMH, to provide a holistic view of medical genetics from the scientific, clinical and patient perspectives.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On successfully completing the module you will be able to... 1. Describe in some detail and discuss the cellular and molecular basis of inheritance 2. Explain the differences between acquired, monogenic, polygenic and epigenetic disease 3. Explain the different mechanisms by which genes are regulated in humans 4. Discuss the contribution of genetics and environment to disease processes in humans 5. Show awareness of, and discuss the ethical issues in modern genetics 6. Discuss with examples the importance of interaction between patients, scientists and clinician
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Our genetics influence every aspect of our growth, reproduction and health. Due to this, a deep understanding of how our genes are inherited and regulated, and how genetic sequence variants or epigenetic factors affect gene function is crucial for understanding normal human development, and the basis of genetic diseases.[16h] Knowing how molecular pathways function and are altered by gene variants is important to identify molecular biomarkers to monitor disease onset and progression, and define new therapies to treat disease. For example, research studies have detailed how breast cancer risk is greatly increased by the inheritance of specific <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 الأسبوعي 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	FRice 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
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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	The effects of criminal evidence		Module Delivery
Module Type	Core		☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	FOR36032		
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		Module Leader's Qualification	
Module Tutor	Name (if available)	e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The module is directed towards critical analysis of selected rules of evidence, of particular relevance to criminal trials. It aims to provide you with an understanding of the adversarial trial structure and its impact on the content of the law of evidence, particularly in the context of the criminal trial. It also aims to familiarise you with the content of some of the key exclusionary rules; to encourage you to identify and debate current issues within the law of evidence with confidence; and to apply the legal rules and principles within a critical framework.
Module Learning Outcomes	The aims of the module are:

مخرجات التعلم للمادة الدراسية	- To provide you with a structure to enable you to critically examine rules of criminal evidence in England and Wales. - To enable you to understand a variety of theoretical approaches to the study of criminal evidence law and to make judgements about the ethical issues and values involved. - To instil an appreciation of the variety of issues raised by the study of criminal evidence law, and the complexity of those issues particularly in respect of the extent to which they may interrelate. - To develop your ability to understand both the variety of principles applicable to criminal evidence law, and to be able to critically assess both existing rules and proposals for change, having regard to existing knowledge and research findings. To provide you with a variety of opportunities to fulfil the above aims, and to demonstrate knowledge of relevant theoretical approaches, principles and laws and the ability to apply them to particular aspects of criminal evidence law.
Indicative Contents المحتويات الإرشادية	Each stepe required [30h] 1-This reading list is indicative - i.e. it provides an idea of texts that may be useful to you on this module, but it is not considered to be a confirmed or compulsory reading list for this module. 2- Demonstrate ability to integrate and assess information from primary and secondary legal sources using appropriate interpretative techniques. 3-This requires the use of electronic means and explanatory films, and presenting special presentations to enhance this aspect of forensic science. It also requires assigning students a number of duties, including preparing reports or a seminar in this aspect.

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

Student Workload (SWL) الحمل الدراسي للطلاب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطلاب خلال الفصل	58	Structured SWL (h/w) الحمل الدراسي المنتظم للطلاب أسبوعيا	4.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطلاب خلال الفصل	42	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطلاب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطلاب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

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

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction The effects of criminal evidence
Week 2	Prosecution and defence disclosure
Week 3	
Week 4	Summary justice
Week 5	Jury trial
Week 6	Burden of proof
Week 7	Examination in chief and cross-examination
Week 8	Hearsay
Week 9	Character
Week 10	Corroboration
Week 11	Sentencing and appeals from the Crown Court
Week 12	Miscarriages of justice
Week 13	
Week 14	Abuse of process, civil remedies and CCRC
Week 15	exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Applying first and second week
Week 2	Applying 3rd and 4rd week
Week 3	Applying 5 week

Week 4	Applying 6th and 7th week
Week 5	Applying 8th week
Week 6	Applying 9th and 10th week
Week 7	Applying 11 th and 12 th week
	exam

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

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>Inks and dyes and their warnings</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR36035</u>		
ECTS Credits	<u>4</u>		
SWL (hr/sem)	<u>100</u>		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

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

أهداف المادة الدراسية	This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 1-The students will work their way through a DNA practical, making use of the learned techniques. 2-New research and techniques will also be looked at within forensic DNA analysis. 3-This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 4-The students will work their way through a DNA practical, making use of the learned techniques. 5- New research and techniques will also be looked at within forensic DNA analysis.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	On completion of this module, students are expected to be able to: 1. Explain the methods of construction of characters used in handwriting and signatures and identify natural and deliberate modifications. 2. Describe and analyse the composition of paper and ink. 3. Prepare and present oral and written reports appropriate for a court of law.
Indicative Contents المحتويات الإرشادية	Indicative Module Content ink and dyes; construction of characters, natural variation, accidental and deliberate modification. Origin and history of documents: inks, paper, impressions, erasures and obliteration. [14h] Analysis of documents using a range of techniques e.g. ESDA, chromatography, microscopy, spectroscopy. Video Spectral Comparator, comparison microscope.[14h]

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

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 أسبوعيا	5.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	28	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	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 الاسبوعي النظري	
	Material Covered
Week 1	Introduction -Inks and dyes and their warnings
Week 2	History of dyes , ink and pigments
Week 3	General features of dye and dyeing
Week 4	Dyeing techniques
Week 5	Classification of dyes
Week 6	Development of synthetic dyes
Week 7	Food dyes
Week 8	Dye industry research
Week 9	pigments
Week 10	Health and environmental aspects
Week 11	Indelible-ink
Week 12	currency counterfeiting
Week 13	

Week 14	exam
Week 15	review

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	ELLEN, D., 1997. <i>The Scientific Examination of Documents</i> . Taylor and Francis.	Yes
Recommended Texts	WHITE, P., 1998. <i>Crime Scene to Court, The Essentials of Forensic Science</i> . The Royal Society of Chemistry.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

Module Information			
Module Title	Genetic statistical analysis and databases		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR36034</u>		
ECTS Credits	<u>4</u>		
SWL (hr/sem)	<u>100</u>		
Module Level	1	Semester of Delivery	1
Administering Department	Forensic \FOR	College	SC
Module Leader	Firas Habeb Abdulrazzak	e-mail	Firas Habeb Abdulrazzak
Module Leader's Acad. Title	Prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	This module provides an introduction to multivariate analysis, with a strong emphasis on data visualization by means of multivariate graphics known as biplots. The course covers principal component analysis (PCA), multidimensional scaling (MDS), correspondence

	analysis (CA), canonical analysis, cluster analysis, discriminant analysis (DA) and some multivariate inference, illustrating these methods with genetic data. Some genetic datasets have a compositional nature, and basic principles of compositional data analysis like log-ratio transformations are considered. The use of multivariate methods for uncovering population substructure and cryptic relatedness is addressed.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After attending this module, participants will be able to: 1. Describe the purpose of basic multivariate statistical methods. 2. Select an appropriate multivariate method for a given data set. 3. Apply adequate transformations for a given data set. 4. Perform multivariate statistical analysis on a computer in the R environment. 5. Visualize multivariate data by means of biplot construction. 6. Interpret biplots correctly and assess goodness-of-fit. 7. Carry out basic multivariate hypothesis tests. 8. State the peculiar nature of compositional data, and account for it in the analysis.
Indicative Contents المحتويات الإرشادية	Describe the assumptions underlying the Binomial, Multinomial, and Normal probability models.[15h] Define sensitivity, specificity and predictive values in the context of a binary screening test for a disease. Explain how the likelihood function can be used for estimation and model selection. Translate scientific questions into appropriate null and alternative hypotheses.[10h] Describe the assumptions underlying z-tests, t-tests and chi-square tests and use these tests to statistically compare two samples. Explain and interpret p-values and confidence intervals.[5h] Recognize and explain the concepts of confounding and effect modification. Explain the role of computer intensive methods (bootstrap, jackknife, permutation tests) in hypothesis testing and confidence intervals.[5h] Explain the false discovery approach to addressing the issue of multiple comparisons in hypothesis testing.[7h]

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	3
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	Introduction to Genetic statistical analysis and databases
Week 2	Genetic Data
Week 3	Allele Frequencies
Week 4	Allelic Association
Week 5-6	Population Structure & Relatedness
Week 7	Notation
Week 8	Allelic Measure Predicted Values
Week 9-10	Genotypic Measure Predicted Values
Week 11-12	Estimates for Individuals

Week 13-14	Estimates for Populations
Week 15	exam
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	The Fundamentals of Modern Statistical Genetics by Nan M. Laird and Christoph Lange, Springer-Verlag, New York.	no
Recommended Texts	https://si.biostat.washington.edu/sites/default/files/modules/PopGenD ata2018.pdf	no
Websites	https://si.biostat.washington.edu/ .pdf	

Grading Scheme

مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

Module Information

Module Title	Instrumental Analysis			Module Delivery	
Module Type	<u>Core</u>			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	FOR35126				
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level		1	Semester of Delivery		1
Administering Department		FORN	College	SC	
Module Leader	FRAS HABEB ABDULRAZZAK		e-mail	Firas_al2020@yahoo.com	
Module Leader’s Acad. Title		Prof.	Module Leader’s Qualification		Ph.D.
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date		01/09/2023	Version Number		1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	The overall goal of this course is to provide students with a sufficient understanding of the principles, laws, and theories of analytical chemistry to enable them to successfully analyze samples provided using selected instrumental methods. The student should gain the competence to follow a standard procedure, operate the instrument in a safe manner, collect suitable data, evaluate the reliability of the data collected, and report the results in an appropriate form as would be required of any competent laboratory technician.
Module Learning Outcomes	at the successful completion of this course participants:

مخرجات التعلم للمادة الدراسية	1. should be able to successfully solve a variety of multi-step problems using mathematical and descriptive algorithms and, specifically in the laboratory portion of the course. 2. participants will be able to utilize analytical chemical instrumentation properly including. 3. preparation of high accuracy standards. 4. set the operating parameters of different instruments. 5. perform calibration and analysis. 6. recognize and appreciate the value of analytical instruments used, as well as their limitations, in the solution of selected problems faced by the technician □ realize the existence of a variety of instrumental methods, each with its own particular use based on its capabilities and limitations. □ 7. understand that the selection of one instrumental method, as being superior to another in the solution of a particular analytical problem, is based on such factors as sensitivity, time required, selectivity, purchase cost of instruments involved, etc. 8. understand that the success of any of the instrumental methods used depends upon a working knowledge and control of the operating parameters associated with each instrument studied. 9. □ have a basic operational knowledge of the internal design of the instruments studied.
Indicative Contents المحتويات الإرشادية	The theoretical background of each instrument will be given in lecture. Emphasis on the operating parameters associated with each of the instruments studied will be provided in the laboratory. Operational details are covered sufficiently to provide an adequate understanding of the techniques used without being overwhelmed by details. Upon successful completion of this course every course participant should be able to: □ 1-understand the principles underlying the operation of each of the studied instruments and extrapolate that knowledge to other instrumental methods. [10h] □ 2-describe the operational parameters for each of the analytical instruments studied. [10h] □ 3- carry out calibration of instruments, preparation of a sample for analysis, safe handling of the sample during the analysis, and proper disposal of the sample after completion of the analysis. [10h] □ 4- use techniques for recording and evaluating analytical data derived from instruments. [10h] □ 5- solve a variety of numerical problems dealing with the analysis of samples using the various instrumental methods studied. [10h] □ 6- write in scientific format reports of the theory, experimental method, and results of an analysis. [10h] This course is designed to provide the framework on which hangs a significant portion of the body of basic chemistry knowledge, allowing the perceptive participant to glance into the richness of the microscopic world from a macroscopic point of view, and to provide the foundation for further studies in the sciences. Over the course of the semester, the successful participant will develop new and expand upon existing skills in critical thinking, mathematics, chemical analysis, and the scientific method. Since chemistry is by its very nature an experimental science, honesty and integrity in the acquisition and analysis of data is at the very core of the scientific process. It is part of our role as practicing scientists to defend the nature of scientific discourse and to expose pseudoscience and scientific dishonesty. [15h]

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

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

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	100	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	7.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	75	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	5.2
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 الاسبوعي النظري

	Material Covered
Week 1	Introduction Classification of analytical methods Instrumental methods
Week 2	Basics of selecting a method
Week 3	The "schematic instrument"
Week 4	Introduction to Spectroscopy Electromagnetic radiation Quantum mechanical considerations
Week 5	Absorption and emission Diffraction, dispersion, refraction, reflection
Week 6	Instrumentation for Spectroscopy Sources Monochromators
Week 7	Sampling Detectors Signal processing
Week 8	UV-Visible Molecular (Electronic) Spectroscopy Terms Theory
Week 9	Quantitative and qualitative aspects Applications
Week 10	Atomic Spectroscopy Terms Theory Instrumentation
Week 11	Sampling Atomic absorption/emission spectroscopy Inductively coupled plasma spectroscopy
Week 12	Infrared Spectroscopy Theory Instrumentation (FT vs. scanning) Sampling Spectral interpretation
Week 13	Chromatographic Methods (Chem340 Redux) Classification Rate theory and solute migration Column efficiency
Week 14	van Deemter relationship Gas chromatography Instrumentation Applications HPLC
Week 15	Instrumentation Applications
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

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

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors

	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	<u>Molecular application</u>		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FORN 302</u>		
ECTS Credits	<u>8</u>		
SWL (hr/sem)	<u>200</u>		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader	Name	e-mail	E-mail
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 1-The students will work their way through a DNA practical, making use of the learned techniques. 2-New research and techniques will also be looked at within forensic DNA analysis.

	3-This module involves the review of various techniques and research used in a forensic DNA laboratory from sample receipt, extraction and replication to analysis and interpretation. 4-The students will work their way through a DNA practical, making use of the learned techniques. 5- New research and techniques will also be looked at within forensic DNA analysis.	
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	By the end of this module the student should be able to: 1. Compare and contrast past, present and future techniques used in DNA profiling. 2. Have a critical understanding of STR and sexing PCR systems, which are used by many countries including the UK to generate sizeable DNA profiles using coloured dye and laser technology. 3. Assess the benefits and pitfalls of using DNA profiling data relating to crime scenes, criminal investigations and identification of human remains. 4. Distinguish between the specialist techniques such as mitochondrial DNA sequence analysis, Y-STR analysis and the scientific basis of familial database searching. 5. Appraise new developments & ongoing research areas e.g. linking physical characteristics to DNA, detection of forensically important SNPs or identify body fluids using nucleic acid analysis.	
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. 1- DNA structure, genetics, molecular biology Occurrence and distribution of unique, middle and highly repetitive DNA fractions. Hypervariable fraction and its exploitation in forensic science 2 -Background to DNA profiling Alec Jeffreys - minisatellite DNA - first use of DNA profiling - progress through the 1980's, 90s, 00s - Multilocus DNA profiling (MLP) - Single locus probes (SLP), PCR based techniques such as HLADQa, Quad, SGM SGMplus, DNA-17 New multiplexes	

	3- Generation of STR DNA profiles
	Introduction to how reproducible and sizeable DNA profiles using multiplexed short tandem repeat (STR) are generated.
	4 -Crime Scene profiling
	Sources of DNA encountered in forensic casework and anti-contamination procedures.
	5- Statistical evaluation of DNA matches and court presentation
	Match probability calculations, population genetics and Bayesian approach to evidence interpretation. Presentation of DNA evidence in court; challenges and appeals
	6- Population Genetics
	Principles of inheritance - Mendel's laws, population genetics
	7 -Identification of human remains
	Human remains identification, including mass disaster- victim ID by the use of surrogate reference samples and relatives' samples.
	8- Intelligence-led screens
	Role of such initiatives with casework examples
	9- Specialist techniques
	New developments/ Ongoing research areas

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	
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	The aim of this Module is to provide students with the ability to critically evaluate current thinking and research in forensic DNA analysis and extraction from different samples as well as to fully understand the procedures and analysis performed within a modern forensic DNA laboratory.
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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 أسبوعياً	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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 الأسبوعي النظري	
	Material Covered
Week 1	Introduction
Week 2	Basic tools and techniques of DNA analysis.
Week 3	DNA extraction techniques.
Week 4	DNA extraction techniques (continued).

Week 5	Quantification of nucleic acids
Week 6	Polymerase chain reaction (PCR)
Week 7	Forensic DNA phenotype
Week 8	Y- CHROMOSOMAL analysis
Week 9	Mitochondrial DNA analysis
Week 10	In-situ hybridization
Week 11	Single cell fingerprinting
Week 12	Low copy number (LCN) DNA typing
Week 13	Nucleic acid electrophoresis
Week 14	DNA sequencing types
Week 15	DNA evidence in criminal trials

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: buffers preparation
Week 2	Lab 2: collecting DNA from different biological samples.
Week 3	Lab 3: collecting DNA from different biological samples (continued)
Week 4	Lab 4: phenol-chloroform extraction method
Week 5	Lab 5: mitochondrial DNA extraction method
Week 6	Lab 6: Quantification of DNA concentration
Week 7	Lab 7: conventional polymerase chain reaction
	Lab 8: reverse transcription PCR
	Lab9: quantitative real time PCR
	Lab 10 nested PCR
	Lab 11 COLD PCR
	Lab 12 ligation mediated PCR
	Lab 13: digital PCR
	Lab 14: DNA electrophoresis
	Lab 15: guide to NCBI databases

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	GLICK, B.R., PASTERNAK, J.J. and PATTEN, C.L. Molecular Biotechnology. Current Edition. American Society for Microbiology.	Yes

Recommended Texts	DALE, J.W. adn VON SCHANTZ, M. From Genes to Genomes. Concepts and applications of DNA Technology. Current Edition. Wiley-Blackwell.s	No
Websites		

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
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Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

Module Information		
Module Title	Criminal insects	Module Delivery
Module Type	<u>Core</u>	☒ Theory

Module Code	FOR36033		☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar		
ECTS Credits	7				
SWL (hr/sem)	175				
Module Level		1	Semester of Delivery		1
Administering Department		Forensic \FOR	College	SC	
Module Leader			e-mail		
Module Leader’s Acad. Title			Module Leader’s Qualification		
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name			e-mail		
Scientific Committee Approval Date		01/09/2023	Version Number		1.0

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	This module introduces students to forensic entomology, the study of insects for medicolegal issues, which has been dated back to China in the 13th century. Studying these forensically important insects is useful in estimating post-mortem intervals. Legal implications will be explored using various case studies. Students will also visit the Entomology Unit and the Forensic Laboratory in KL. Students will observe the progression of decomposition and be exposed to the different families of forensically important flies.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Upon successful completion of this course, students will be able to: - Describe the application of entomology to criminal investigations - Identify insect groups (especially carrion groups) and insect rearing cycles - Demonstrate proper handling, collection and preservation of insect evidence at crime scenes - Explain scientific principles behind the use of insects in homicide investigations - Identify where and when forensic entomology is important, and show the limitations of the technique and how they can be overcome - Describe the effects of habitat on insect evidence

Indicative Contents

المحتويات الإرشادية

The student will... [6 h for each steps]

- recognize that in the field of forensic anthropology information about the victim of a crime and the nature of the crime itself is determined from unknown skeletal remains
- understand that a forensic anthropologist attempts to determine the following information from unknown skeletal remains: whether the remains are human or non-human, number of individuals found, time of death, sex of individual(s), ancestry of individual(s), stature of individual(s), and cause of death
- describe some of the basic skeletal differences between human and animal bones (such as ribs and upper and lower limbs)
- state some of the basic skeletal differences between humans from various ancestries or races (such as Negroid, Caucasoid, Mongoloid)
- identify some of the basic skeletal differences between female and male remains
- perform a research study that compares the size and length of various bones in males and females

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies

Generally, blood and varied alternative tissues bear a laboratory analysis to see the presence of poisons and their levels within the body. However in few cases wherever the body remains undiscovered for an extended duration, then maggots are collected and brought to the laboratory for entomo-toxicological studies as a result of the advanced stage of decomposition within the body where assortment and preservation of body viscera becomes an impossible task. This entomo-toxicological studies of the maggots facilitate the assessment of poison levels within the body.

Insects' species are continuously restricted to a limited region or surroundings. The body gets settled shortly once the onset of decomposition. Just in case if the body gets stirred by some external force, then it gets re-colonized once more relying upon the region and therefore the individual environmental issue. But, this secondary colonisation may dissent from the initial colonisation, thereby providing a clue that the body was resettled in a while.

This course outline would inculcate within the students an ability to view every miniscule factor present at the spot, where a crime was conducted. In addition,

they would also be able to analyse the sequence in which the insects colonize a corpse and its evidentiary value in the courtroom.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	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	<u>Introduction for-Forensic Entomology</u>
Week 2-3	What happens after death?Rigor mortis
Week 4-5	Estimating time of death with Forensic Entomology
Week 6-7	Finding the cause of death using forensic entomology
Week 8-9	Has the body been moved after death?
Week 10	Use of arthropods in investigation of contraband trafficking
Week 11-12	Analyzing the crime scene for entomological evidence
Week 13-14	Case histories involving forensic entomology
Week 15	exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

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

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme

مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

Module Information

Module Title	<u>Method of Chemical and Microscopic Detection</u>			Module Delivery	
Module Type	<u>Core</u>			☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	<u>FOR35028</u>				
ECTS Credits	<u>5</u>				
SWL (hr/sem)	<u>125</u>				
Module Level		1	Semester of Delivery		1
Administering Department		Forensic \FOR	College	science	
Module Leader	Prof. Dr. Firas Habeb Abdulrazzak		e-mail	Firas_ald2020@yahoo.com	
Module Leader’s Acad. Title		Professor	Module Leader’s Qualification		Ph.D.
Module Tutor	Name (if available)		e-mail	E-mail	
Peer Reviewer Name		Prof. Dr. Firas Habeb Abdulrazzak	e-mail	Firas_ald2020@yahoo.com	
Scientific Committee Approval Date		01/09/2023	Version Number	1.0	

Relation with other Modules

العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	The course builds on previous studies in spectroscopy. The aim is to enable students to : acquire specialised understanding of how light interacts with molecules and materials. Different methods of optical spectroscopy and their use to examine chemical and physical properties are addressed at an advanced level.
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	the students shall be able to explain the electronic processes that can be excited by light describe how scattered and emitted light from a sample can be determined and measured. 5. explain the basic principles and properties of a laser and how it can be used in an optical experiment. 6. provide an advanced account of how experimental spectroscopic data are interpreted in terms of the properties of molecules and molecular systems. 7. describe the physical principles of an elementary photochemical reaction.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- discuss different spectroscopic methods and compare their advantages and disadvantages 2- perform simple calculations based on spectroscopic data in order to obtain molecular properties 3- use optical spectroscopy to plan and perform experiments and calculations 4- propose appropriate spectroscopic methods to determine specific molecular properties 5- write laboratory reports in the field of optical spectroscopy assess the uncertainties and error limits of spectroscopic data and evaluate them 6- critically discuss and evaluate results from measurements performed with optical spectroscopy.
Indicative Contents المحتويات الإرشادية	1. Demonstrate knowledge and understanding of core and foundation scientific physical, chemical concepts, terminology, theory, units, conventions, and laboratory methods in relation to the chemical and forensic sciences. [1 h] 2. Demonstrate knowledge and understanding of areas of chemistry including characterization chemistry, including as applied to forensic analysis. [1 h] 3. Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to identification chemistry and to apply such knowledge and understanding to the solution of qualitative and quantitative problems. [1 h] 4. Recognise and analyse problems involving analytical chemistry and plan strategies for their solution by the evaluation, interpretation and synthesis of scientific information and data by a variety of computational methods. [1 h] 5. Collate, interpret and explain the significance and underlying theory of experimental data, including an assessment of limits of accuracy. [1 h] 6. Interpret data derived from laboratory observations and measurements in terms of their underlying significance and the theory underpinning them. [8h]

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

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	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	basic principles of interaction between light and molecules, and the formation of excited states
Week 2	the time evolution of excited states in intra- and intermolecular energy and electron transitions and their role in photochemical reactions
Week 3	Energy of absorbance and spectrum ,maximum absorbance and the parameter which influence on it
Week 4	description of different sources of light (e.g. lasers) and light detectors of relevance to spectroscopy
Week 5	detailed descriptions of different optical methods such as absorption and fluorescence spectroscopy and time resolved laser spectroscopy
Week 6-7	introduction to fluorescence microscopy and detection of individual molecules
Week 8-9	introduction to X-ray spectroscopy for measurement of molecular structure and chemical bonding
Week 10-11	Raman and IR SPECTROSCOPY

Week 12-15	Macro and micro with optic or electronic scoop analysis
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safty and security
Week 2	Lab 2: preparing sample for analysis
Week 3	Lab 3: uv-spectrum for different materials
Week 4	Lab 4: determination of maximum wave length of absorbance
Week 5	Lab 5: application of uv-spectrum to determinate concentration
Week 6	Lab 6: Ir spectroscopy
Week 7	Lab 7: macroscopic images for different materials
Week 8	Lab 8: macroscopic images for different materials
Week 9	Lab 9 : macroscopic images for different materials

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	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	tissue , haier and fibers scince		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR36036</u>		
ECTS Credits	<u>4</u>		
SWL (hr/sem)	<u>100</u>		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	Name (if available)	e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The ability to perform a forensic microscopical hair , fiber and tissue comparison is depend on a number of factors. These factors include the following: 1. Whether an appropriate known sample is representative.

	2. The range of features exhibited by the known material. 3. The condition of the questioned material. 4. The training and experience of the material examiner. 5. The usage of the appropriate equipment and methodology.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After studying this module, you shall be able to know • The Hair • The structure of Hair , tissue and fiber • General information about Hair, fiber and tissue • The gender from the Hair, tissue and fiber • Identification of the site of the Hair, tissue and fiber
Indicative Contents المحتويات الإرشادية	Indicative shows the ability for document provides an outline for training in the collection, preservation, and examination of fiber, haier and tissue, and evidence, including the requisite competency testing. This training outline shall be followed by all trainees in the examination of fiber, haier and tissue, regardless of experience level. Module 1 – Introduction to fiber, haier and tissue [7h] 2- Objectives: Through completion of this module, the trainee shall have developed and demonstrated the theoretical knowledge and/or practical skills in[7h] 3-The history and use of fiber, haier and tissue. [7h] 4- fiber, haier and tissue terminology. [7h] 5-Chemistry and manufacturing processes of fiber, haier and tissue.[7h] 6- Classification schemes of fiber, haier and tissue. [7h]

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

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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 أسبوعيا	4.1
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	100		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Principle of tissue , Haier and fibers science
Week 2	Cell structure and types
Week 3	Epithelial tissue types
Week 4	Introduction to the tools and techniques involving analysis of Haier and fiber in forensic
Week 5	Fibers charecterstic and types
Week 6	Haier structure
Week 7	Urinary system

Week 8	Circulatory system , types of arteries, veins and hearts
Week 9-10	Lymphoid system
Week 11-12	Male reproduction system
Week 13-14	Female reproductive system
Week 15	exam

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme

مخطط الدرجات

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

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

MODULE DESCRIPTION FORM

Module Information			
Module Title	Forensic chemistry		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR35027</u>		
ECTS Credits	<u>5</u>		
SWL (hr/sem)	<u>125</u>		
Module Level	1	Semester of Delivery	1
Administering Department	Forensic \FOR	College	SC
Module Leader	Firas Habeb Abdulrazzak	e-mail	Firas Habeb Abdulrazzak
Module Leader's Acad. Title	Prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	- To develop an appreciation of the analytical approach. - To introduce the student to forensic chemistry. - To provide the student with knowledge of the forensic chemistry practical & reporting techniques.

	To provide the student with skills in researching the scientific literature and presenting a scientific topic.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	- Appreciate the correct analytical science approach to measurement and observation. - Understand the some everyday analytical instrumental techniques and their application. - Obtain an appreciation for forensic chemistry techniques and their application to cases. - Record and report observations in a correct scientific fashion. - Carry out appropriate scientific methods for scene analysis.
Indicative Contents المحتويات الإرشادية	Indicative Syllabus Making & Recording Measurements]18h] Observations, diagrams & taking photographs SI Units Scientific method Collecting evidence Fundamental Laboratory Techniques Analytical Techniques as applied to forensic science: [20h] Sample Preparation Chromatography Gas & Liquid Chromatography Basic Spectroscopy Atomic Spectroscopy X-Ray Fluorescence- Infrared spectroscopy NMR Mass spectrometry Which include: [15h] Alcohol analysis Bulk drug analysis Analysis of glass Analysis of paint Analysis of fire and explosions Analysis of firearms Document analysis

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	All learning materials, including lecture notes, additional multimedia and electronic copies of subject manuals can be found in the relevant modules on Canvas. Interactive online lectures: The lectures arm students with the knowledge required to analyse and interpret chemical traces commonly recovered at crime scenes, including emerging technologies and methods that are at the forefront of the discipline. While the

focus of the lectures is on trace evidence, the skills acquired in this subject build on the knowledge and professional skills developed in the pre-requisite subjects. The topics discussed in these sessions provide the foundation for the workshops and practicals, where students apply their new knowledge. The lectures are broken into structured blocks of information and application/activity - facilitated by interactive online tools - with opportunities for class discussion and participation.

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

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	102	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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
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Formative assessment	Quizzes	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction, Physical evidence
Week 2	Chemicals in the criminal.
Week 3	Blood drop studies
Week 4	DNA
Week 5	Toxicology
Week 6	Drugs
Week 7	Fingerprints
Week 8	Forensic medicine
Week 9	Hair and fibers
Week 10	Handwriting and ink analysis
Week 11	Polymer identification
Week 12	Instrument used in forensic chemistry.
Week 13	UV detection
Week 14	Criminal cases
Week 15	exam
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: safety-and security
Week 2-4	Lab 2-4: sampling sciences
Week 5	Lab 5: Detection, collection, analysis and interpretation of forensic traces
Week 6	Lab 6: identification for different materials by chemical method
Week 7	Lab 7: Select appropriate techniques for evidence recording, packaging and labelling

Week 8	Lab 8: identification of blood
Week 9	Lab 9: identification of drags
Week 10	Lab 10: identification of poisons
Week 11	Lab 11 : identification of toxic material
Week12-14	Lab14: identification of unknown
Week12	Lab15:review before final exam

Learning and Teaching Resources

مصادر التعلم والتدريس

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

Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	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	Introduction to Toxic and Drugs		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FORN 201</u>		
ECTS Credits	<u>7</u>		
SWL (hr/sem)	<u>175</u>		
Module Level	1	Semester of Delivery	1
Administering Department	FORN	College	SC
Module Leader	Mohammad Jawad Khazal	e-mail	pcr2000@kus.edu.iq
Module Leader's Acad. Title	Asst.prof.	Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)	e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

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

	1-While all toxicology addresses the adverse effects that agents have on living organisms, clinical and medical toxicology play unique roles not often encountered in traditional toxicology practice or research. 2-The subset of toxicology focus on the immediate needs of patients suspected of being poisoned. 3-The toxicology require extensive knowledge of diseases and etiology as well as a thorough understanding of the effects of potential poisons, both of which are commonly used to make diagnoses. 4- medical toxicologists must consider three points—the substance involved, the toxic response, and the mechanism by which it occurs—in order to determine the best treatment options for each patient. 5- introduce participants to the basics of clinical and medical toxicology along with new and old tools that may be used by the clinical toxicologist.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand and apply pharmacokinetic and pharmacodynamic principles that impact administration, absorption, distribution, metabolism, elimination, efficacy, potency, effectiveness and biological activity of drugs and toxins. 2. Understand and describe how the liver's cytochrome system works, including Biotransformation Phases I and II, and how drug-drug and drug-herb interactions affect this detoxification system. 3. Understand the therapeutic and adverse effects of selected drugs, supplements, and environmental toxins. 4. Understand and identify health conditions linked to selected toxic exposures from food, lifestyle, environment, workplace and home. 5. Understand the role of toxicology in the development and progression of disease and to characterize its impact on patient response to chiropractic care.
Indicative Contents المحتويات الإرشادية	Principles of Toxicology (20 hrs) Classification of toxic agents; characteristics of exposure; evaluation of toxicity: LD50 and TD50; spectrum of undesirable effects; interaction and tolerance; biotransformation and mechanisms of toxicity; use and interpretation of toxicity data. Natural Toxins in Food (15 hrs) Determination of toxicants in foods; classification and toxicity of natural occurring toxins; natural toxins in animal foodstuffs (meat and seafood); natural toxins in plant foodstuffs; fungal toxins occurring in foods (mycotoxins); micro-organisms and food; sites of action and their toxicity mechanisms. Food Allergies and Sensitivities (15 hrs) Natural sources and chemistry of food allergens; true/untrue food allergies; handle of food allergies; food sensitivities (anaphylactoid reactions, metabolic food disorders and idiosyncratic reactions); (9h)issues related to sulfites in foods. Environmental Contaminants and Drug Residues in Food (15 hrs) Common environmental contaminants (e.g. heavy metals) and drugs residues (e.g. pesticides) in foods; their health impacts and risk assessment; abusive use of veterinary drugs (e.g. malachite green in fish) and other contaminants in food. Food Additives and Toxicants formed during Food Processing (15 hrs) Common food additives (e.g. coloring) and their safety issues; process-induced food toxicants (e.g. acrylamine) and their health concerns.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Interactive lectures and guided readings are used to facilitate communication between lecturers and students, and also to enhance students in comprehending the taught topics and key concepts. During each lecture, in-class activities (case studies and group discussion, etc.) are conducted to stimulate students' interest and promote their critical thinking in learning.

	Tutorials are designed to assist students to re-think the previous learning process, and to challenge students to raise questions on the taught topics. The purpose is not only to consolidate their learned concepts but also to stimulate their further interest in the subject and to develop their problem-solving abilities. The continuous assessment is based on student's performance on quizzes, in-class learning activities and a case study report. Examination is focused on analytical and problem solving skills.
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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 أسبوعياً	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	98	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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	Principle of toxicology, History of toxicology
Week 2	Classification of toxic agents
Week 3	Drug pharmacokinetics and metabolism

Week 4	Molecular toxicology and toxicgenomic
Week 5	mmunotoxicology
Week 6	Chemical toxicology
Week 7	Exam
Week 8	Microbial toxicology
Week 9	Food toxicology
Week 10	Ecotoxicology
Week 11	Nano toxicology
Week 12	Clinical toxicology (neurotoxicology, cardiovascular toxicology)
Week 13	Clinical toxicology (toxicology of the intestine, toxicology of the skin)
Week 14	Factors in flouncing the actions of a poison agents in the body
Week 15	Human analysis of drugs
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1 Classification of toxic agents
Week 2	Lab 2: mmunotoxicology
Week 3	Lab 3: Chemical toxicology
Week 4	Lab 4:Microbial toxicology
Week 5	Lab 5: Ecotoxicology
Week 6	Lab 6: Nano toxicology
Week 7	Lab 7: exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Hodgson, A Textbook of Modern Toxicology, 4th ed. (J Wiley & Sons: 2010).	Yes
Recommended Texts	Frank and Ottoboni, The Dose makes the Poison: A Plain-language Guide to Toxicology, 3rd ed. eBook, (J Wiley & Sons: 2011).	No
Websites	https://accesspharmacy.mhmedical.com/content.aspx?bookid=958&sectionid=53483740	

Grading Scheme

مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

MODULE DESCRIPTION FORM

Module Information			
Module Title	Introduction to explosive materials and booby traps		Module Delivery
Module Type	<u>Core</u>		☒ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	<u>FOR35029</u>		
ECTS Credits	<u>3</u>		
SWL (hr/sem)	<u>75</u>		
Module Level		Semester of Delivery	1
Administering Department	Forensic \FOR	College	SC
Module Leader		e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor	Name (if available)	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/09/2023	Version Number	1.0

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

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	People who work in areas that have experienced armed conflict may be confronted with the threat posed by landmines and explosive hazards, which include unexploded or abandoned ordnance, abandoned military vehicles and equipment, as well as IEDs. (Note that the term EFW includes unexploded ordnance (UXO) and abandoned ordnance but excludes landmines, see definition in the glossary, Annex 6). Any kind of explosive device may block access to project

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

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The strategy of teaching this subject includes : 1-relying on books available on the international network. 2- Relying on the last ten years that our country has gone through, especially from terrorist threats and the experiences that resulted from it. 3-Benefiting from the wars that took place in Iraq to try to obtain experience in how to deal with various materials and components that threaten the public security of society, 4- use of an international information network and referring to those with expertise and specialists in this field, with an emphasis on the practical side that increases the skillful competence of students

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	44	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	3.1
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	31	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	1.6
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 to explosive materials and booby traps
Week 2	Explosive materials
Week 3	Double usage materials
Week 4	Landmines and anti-Landmines
Week 5	Characterization Methods explosive materials
Week 6	Characterization Methods double usage materials
Week 7	modification of explosive materials with double usage materials
Week 8	Remoing explosive materials
Week 9	Boopytraps classification
Week 10	Boopytraps equipment
Week 11	Boopytraps instlation

Week 12	Boopytraps identification
Week 13	Boopytraps modifying
Week 14	Boopytraps remoing
Week 15	exam
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	LANDMINES, EXPLOSIVE REMNANTS OF WAR AND IED SAFETY HANDBOOK chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.unmas.org/sites/default/files/handbook_english.pdf	no
Recommended Texts	Boopytraps chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.bits.de/NRANEU/others/amd-us-archive/FM5-31%2865%29.pdf	yes
Websites	http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/forensic_science/05._forensic_chemistry_and_explosives/31._explosives__introduction/et/4742_et_4742_et_31et.pdf	

Grading Scheme

مخطط الدرجات

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