Al-Karkh University of Science

College of Science

First Cycle – Bachelor's Degree (B.Sc.) in Forensic Science

بكالوريوس في الادلة الجنائية

Table of Contents

1. Overview

This catalogue is about the courses (modules) given by the program of forensic Science to gain the Bachelor of Science degree. The program delivers (49) Modules with (6000) total student workload hours and 240 total ECTS. The module delivery is based on the Bologna Process.

نظره عامه

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج الادلة الجنائية للحصول على درجة بكالوريوس علوم الادلة الجنائية
. يقدم البرنامج (52) مادة دراسية، على سبيل المثال، مع (6000) إجمالي ساعات حمل الطالب و240 إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2024-2025

Module 1

Code	Course/Module Title	ECTS	Semester
KUS11001	Academic Mathematic	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			

- 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.

Module Learning Outcomes

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.

Module Aims:

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 2

Code	Course/Module Title	ECTS	Semester
KUS11002	Fundamental of computer science	3	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	27
Description			

When it comes to teaching computer programming, it is important to use strategies that engage students, promote active learning, and facilitate the development of problem-solving and critical-thinking skills. Here are some effective teaching strategies for computer programming:

1. Hands-on coding practice: must provide ample opportunities for students to write code and practice programming through assign coding exercises, projects, and challenges that allow students to apply the concepts they have learned.
2. Pair programming: should encourage students to work in pairs, with one student as the "driver" who writes the code and the other as the "navigator" who reviews the code and offers suggestions. This collaborative approach promotes active learning, communication, and problem-solving skills.
3. Code reviews and feedback: Regularly review and provide feedback on students' code. Offer constructive criticism and guidance on how to improve their programming skills. Encourage students to review and provide feedback to their peers, fostering a culture of collaboration and continuous improvement.

Module Learning Outcomes

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.

Module Aims:

1. This course provides a manual to operate MATLAB. It presents a detailed course of MATLAB code capabilities required for general programming.
2. MATLAB is a high-performance language of technical computing. It integrates calculation, visualization and programming in an easy-to-use environment where problems and solutions are expressed in writing programs and implementing algorithms through the graphical user interface. MATLAB is an interactive system whose basic data element is an arrays that does not require dimensions. This allows solving many technical computing problems, especially those with matrix and vector formulations.
3. This course includes interactive lectures and practical applications to enable the student to apply algorithms for image processing and apply enhancement methods. In addition, it enables the student to rotate and scale the image by applying many examples.

Module 3

Code	Course/Module Title	ECTS	Semester
KUS11003	Democracy and Human Rights	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17
Description			

نعمد في هذا الجانب إلى ما يلي:

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

Module Aims

تهدف المادة الى بيان اهمية الحقوق الاصلية اللصيقة بالانسان، التى تتفق مع فطرته والتى يقبلها العقل المجرد، والتي لا تختلف باختلاف الزمان والمكان وهذه هي حقوق الانسان

Module Learning Outcomes:

تسهم المادة العلمية الى تثقيف الطالب من الناحية القانونية، ليكون مطلع على ماهية الحقوق الانسانية واصلها التاريخي وتعريف ماله من حقوق وماعليه من التزامات من خلال معرفة حقه وحدود ذلك الحق وحقوق الاخرين، وما سعت اليه الدول والمنظمات الدولية والاقليمية في تعزيز مفاهيم تلك الحقوق، والزام الدول للنص عليها في التشريعات الداخلية والضمانات التي تكفل تطبيق تلك الحقوق العالمية.

Module 4

Code	Course/Module Title	ECTS	Semester
SCI11004	General Biology1	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

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

Module Learning Outcomes

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 utilization 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.

Module Aims

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 5

Code	Course/Module Title	ECTS	Semester
SCI11005	General Chemistry	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

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.

Module Learning Outcomes

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.

Module Aims

1. To develop skills and understanding of different types of elements through the application of techniques.
2. To understand metals, physical and chemical properties.
3. This course deals with the basic concept of general chemistry.
4. To understand periodic table and distribution elements on it

Module 6

Code	Course/Module Title	ECTS	Semester
FOR1001	Principles of forensic science	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	48	102

Description

Principles of Forensic Science is a course that introduces the scientific methods used in criminal investigations. It explains how physical evidence is collected, analyzed, and interpreted to help solve crimes. The course covers topics such as crime scene investigation, fingerprint analysis, DNA testing, toxicology, forensic biology, and laboratory procedures. It also emphasizes accuracy, ethics, and the role of forensic scientists in the justice system..

Module Learning Outcomes

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.

Module Aims

1- Forensic Science is basically the application of science to law.

2- Forensic science is used to investigate criminal cases involving a victim, such as assault, robbery, kidnapping; rape, murder and civil cases such as forgeries, fraud, or negligence.

Module 7

Code	Course/Module Title	ECTS	Semester
FOR12012	General Biology 2	8	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	122

Description

General Biology 2 is a course that focuses on the study of living organisms and biological processes at the cellular and molecular levels. It covers topics such as genetics, evolution, ecology, human physiology, plant biology, and microbiology. The course helps students understand the structure, function, growth, and interaction of living organisms with their environment through both theoretical concepts and laboratory applications.

Module Learning Outcomes

1. Explain the life and human, laboratory and legal requirements of producing DNA profiles.
2. Summarize what is meant by a basic biology science.
3. Perform interpretation of DNA profiling results, including calculation of likelihood ratios.
4. Critically evaluate DNA profiling results citing significant research in the field.
5. Show an understanding of the scientific basis and utilization of techniques of bone anthropometry and pathology in the study of human tissue.
6. Identify the tissues and organs in the human body

Module Aims

1. This module gives students an understanding of the science and techniques that underpin basic biology.
2. Topics covered will include identification of
3. Material covered in lectures will be illustrated through lab work.
4. Highlight in most theories that was deal with biology system for live.
5. Our aim is to provide students with opportunities to develop academically, professionally and personally: to broaden their ambitions, extend their attitudes, challenge their assumptions, and assist towards unlocking their potential to succeed in their studies and future lives.

Module 8

Code	Course/Module Title	ECTS	Semester
FOR12002	Legal regulation of the criminal expert	3	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	48	27

Description

تهدف إلى دراسة القوانين والأنظمة والضوابط الأخلاقية التي تنظم عمل الخبير الجنائي ضمن نظام العدالة. تتناول المادة مسؤوليات وحقوق الخبير الجنائي وآلية التعامل مع الأدلة الجنائية وإعداد التقارير الفنية وتقديم الشهادة أمام المحاكم. كما تركز على الإجراءات القانونية، السرية، الدقة، وأهمية الالتزام بالنزاهة والحيادية أثناء التحقيقات الجنائية

Module Learning Outcomes

1. اعداد خبير جنائي قادر على فهم وتطبيق القانون بالشكل السليم
2. اعداد ملاكات متكاملة من الناحية القانونية والفنية

Module Aims

1. تزويد الطالب بالمعلومات القانونية المتعلقة بعمله الفني.
2. بيان النصوص القانونية التي تنظم عمل خبير الادلة الجنائية
3. تبصير الطالب بالمسؤولية الجزائية والمدنية والانضباطية التي ترتب على الخبير في حال مخالفته للقانون.

Module 9

Code	Course/Module Title	ECTS	Semester
FOR12023	Organic Chemistry	8	2
Class(hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	122
Description			

Organic Chemistry is a course that studies the structure, properties, and reactions of organic compounds that contain carbon. It covers the classification and nomenclature of organic compounds, chemical bonding, and reaction mechanisms. The course also focuses on hydrocarbons and different functional groups, as well as the importance of organic chemistry in medical, biological, and industrial applications.

Module Learning Outcomes

. 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

Module Aims

On completion of this module students should be able to:

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.
5. Safely perform a simple chemical synthesis in the laboratory.
6. Understand the structures of organic molecules and recognize and name examples of them.
7. Predict the properties and reactions of a molecule from its structure.
8. Discuss the reactions of common organic compounds.
9. Safely perform a simple chemical synthesis in the laboratory.

Module 10

Code	Course/Module Title	ECTS	Semester
KUS12010	Arabic Language	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17
Description			

صناعة شخصية متكاملة للطالب الجامعي من حيث التخصص العلمي الدقيق والتخصص المساند

Module learning Outcome

عند انتهاء مفردات المادة الدراسية يكون الطالب متمكنا من:

1. الكتابة السليمة خالية من الاخطاء
2. التعبير العلمي الاكاديمي الصحيح
3. استعمال المفردات الفصيحة توظيفا ونطقا
4. اضافة رصيد لغوي ومفاهيم جديدة لمعاني الكلمات
5. القدرة على المخاطبة الادارية في الطلبات الرسمية

Module Aim :

1. تعلم العربية السليمة كونها اللغة الرسمية للوطن
2. اللغة جوهر الهوية ورمزها
3. اللغة تختلف عن اللهجة، فالاولى عالمية والثانية محلية
4. توظيف المفردات الفصيحة في الصياغة الاكاديمية للبحوث العلمية مترجمة بنظيرها الفصيح

5. التمكّن من كتابة البحوث والمقالات ذات المحتوى العلمي الصرف باللغة العربية الفصحى
6. تجنب الاخطاء الشائعة في الكتابة واختيار المفردات الصائبة
7. اثراء الخزين المعجمي لدى الطالب للمساعدة في بناء كاريزما التواصل الكلامي
8. الاطلاع على نماذج من الادب العربي شعرا ونثرا لما لها من اساس في بناء الجانب الثقافي المتنوع لدى الطالب
9. كتابة الاعداد بتمكّن فضلا الكتابة الصحيحة في صياغة الطلبات الرسمية
10. التعرف على الدرس الصوتي في اللغة العربية وعلاقته بعلم الادلة الجنائية

Module 11

Code	Course/Module Title	ECTS	Semester
KUS12011	English Language	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17

Description

Use will be made of individual, pair and group work to develop students' abilities to read increasingly complex academic and general texts. Other skills will be practiced and developed within this module 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

Module Learning Outcomes

1. Enhance the efficiency of student to use many references or books which reported in English language.

2. To develop the competence that students need to read a wide range of general and academic texts in English.
3. To develop students competence in reference skills [locating and evaluating information needed for assignments in a library.
4. demonstrate adequate general and detailed comprehension of a range of advanced general and academic texts.
5. undertake research in an academic library.

Module Aims

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

Module 12

Code	Course/Module Title	ECTS	Semester
SCI12012	General Physics	7	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

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, online lectures and home works and by considering type of simple experiments involving some sampling activities that bring attention of the students.

Module Learning Outcomes

1. Identify and classify different types of Newtons laws
2. Evaluate the importance of using Newtons law in forensic investigations
3. Interpret some physical terms
4. Apply the physics of motions in forensic
5. Use the fluid laws such as Archimedes law in determination of some problems.

Module Aims

1. Understand the general physics concepts
2. Describe the effects of using physics law in forensic investigations
3. Evaluate the important of physics law in life

Module 13

Code	Course/Module Title	ECTS	Semester
KUS23016	Crimes of Baath Regime in Iraq	2	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17
Description			

من خلال مقاييس اسلوب المناقشة والاختبارات اليومية

Module Learning Outcomes

1- معرفة الجرائم التي ارتكبت من قبل نظام البعث .

2- معرفة انواع الظلم والاضطهاد الذي ارتكب بحق العراقيين

Module Aims

1- ان يتعرف الطالب على جرائم نظام البعث في العراق
2- ادراك الطالب لتاريخ الحقبة التيعاشها العراق خلال فترة نظام البعث
3- ادراك الطالب لكم الجرائم النفسية والاجتماعية التي ارتكبها النظام
4- ادراك الطالب للجرائم التي ارتكبت بحق البيئة من قبل النظام

Module 14

Code	Course/Module Title	ECTS	Semester
FOR23003	Biochemistry	6	3

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	72

Description

Biochemistry is a course that studies the chemical processes and substances found in living organisms. It focuses on the structure and function of biomolecules such as proteins, carbohydrates, lipids, and nucleic acids. The course also explains metabolism, enzymes, cellular reactions, and the biochemical mechanisms essential for life and human health.

Module Learning Outcomes

.. 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.

Module Aims

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:

4- Metabolism, Analytical Techniques in Biochemistry,

5- Bioinorganic Chemistry

6- Energy Metabolism.

Module 15

Code	Course/Module Title	ECTS	Semester
FOR23004	Genetics	6	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	72
Description			
Genetics is a course that studies genes, heredity, and genetic variation in living organisms. It explains how traits are inherited from one generation to another and covers topics such as DNA structure, gene expression, mutations, chromosomes, and genetic engineering. The course also focuses on the role of genetics in evolution, medicine, and biotechnology.			

Module Learning Outcomes

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

Module Aims

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 raise 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 16

Code	Course/Module Title	ECTS	Semester
FOR23005	Anatomy and physiology	8	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	72
Description			

Anatomy and Physiology is a course that studies the structure and function of the human body and its systems. It covers the anatomy of organs and tissues as well as the physiological processes that maintain normal body functions. The course also explains how body systems work together to support health, growth, and survival.

Module Learning Outcomes

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

Module Aims

1. The aim of the module is to introduce and explore the fundamental concepts of human physiology and anatomy from cellular functions through to systems that are responsible for homeostasis.
2. The module aims to begin with the broader principles of how cells communicate and how cells function.
3. To explore key anatome with physiological systems:
   - investigating the central and peripheral nervous systems,
   - how differing muscles are stimulated to contract,
   - the digestive system and key associated nutritional principles, the cardiorespiratory system,
   - the renal system and its regulatory role and the immune system and how it aims to protect the body against infection and disease.
4. This module also aims to introduce the principles of group learning, critical thinking, problem solving and communication of scientific information.

Module 17

Code	Course/Module Title	ECTS	Semester
FOR23006	Secretions and vital fluids	6	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	72

Description

Secretions and Vital Fluids is a course that studies the composition, function, and analysis of body secretions and vital fluids in the human body. It covers fluids such as blood, saliva, urine, sweat, and other biological secretions, with emphasis on their physiological importance and their role in medical and forensic investigations. The course also focuses on methods of collection, examination, and laboratory analysis of these fluids.

Module Learning Outcomes

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.

Module Aims

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.
- 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.
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Module 18

Code	Course/Module Title	ECTS	Semester
FOR23007	Statistics and forensic applications	2	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	48	2
Description			

Statistics and Forensic Applications is a course that studies the basic principles of statistics and their use in forensic science. It covers data collection, analysis, probability, and interpretation of statistical results in criminal investigations. The course also focuses on applying statistical methods to evaluate forensic evidence, support scientific conclusions, and improve accuracy in forensic analysis.

Module Learning Outcomes

1. Distinguish between different types of statistical data used in forensic contexts.
2. Explain the concept of frequency distribution and its importance in analyzing forensic data.
3. Describe the role of measures of central tendency (mean, median, mode) in summarizing criminal phenomena.
4. Interpret measures of dispersion (range, variance, standard deviation) and their relevance in comparing datasets.
5. Define correlation and evaluate its significance in examining relationships between forensic variables.
6. Construct frequency distribution tables from real forensic datasets.
7. Calculate measures of central tendency and draw meaningful conclusions from forensic data.
8. Apply measures of dispersion to assess the variability of criminal statistics.
9. Use correlation techniques to determine the strength and direction of relationships between variables (e.g., age and crime type).
10. Employ statistical software or manual tools to conduct forensic statistical analyses.
11. Compare the outcomes of central tendency and dispersion measures in interpreting forensic phenomena.
12. Analyze relationships between forensic variables using correlation and assess their accuracy.
13. Derive statistical inferences that support decision-making in criminal justice and forensic investigations.
14. Demonstrate accuracy and objectivity in handling forensic data.
15. Appreciate the role of statistics as a scientific tool in advancing justice and forensic practice...

Module Aims

1. Forensic Statistics, Definition, scope, and importance in criminal justice
2. Types of data in forensic contexts (qualitative vs. quantitative)
3. Frequency Distribution , Raw data organization and tabulation
4. Construction of frequency tables
5. Measures of Central Tendency , Mean, median, and mode: definitions and computation
6. Measures of Dispersion , Range, variance, and standard deviation
7. Coefficient of variation and its forensic relevance
8. Correlation Analysis , Concept of correlation: positive, negative, and zero correlation.
9. Pearson’s correlation coefficient.

Module 19

Code	Course/Module Title	ECTS	Semester
FOR23008	crime scene	2	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	48	2

Description

1. يهدف إلى دراسة الأساليب والإجراءات المتبعة في الكشف والتحقيق في مسرح الجريمة.
2. تركز المادة على كيفية تحديد وجمع وحفظ وتوثيق الأدلة المادية بما يضمن سلامتها ودقتها لدعم التحقيقات الجنائية.
3. كما تتناول تصوير مسرح الجريمة، رفع البصمات والآثار، إجراءات السلامة، ودور الخبراء الجنائيين في إعادة تصور الأحداث وتحليلها

Module Learning Outcomes

مخرجات هذه المادة سيكون الطالب قادراً على أن:

1. يعرّف مفهوم مسرح الجريمة وأنواعه المختلفة.
2. يشرح خطوات تأمين وحماية مسرح الجريمة.
3. يميّز بين أنواع الأدلة الجنائية الموجودة في مسرح الجريمة.
4. يطبق طرق جمع وحفظ ونقل الأدلة بصورة صحيحة.
5. يستخدم أساليب التوثيق والتصوير والرسم التخطيطي لمسرح الجريمة.
6. يحلل الأدلة والآثار الجنائية وربطها بالقضية.
7. يكتب تقارير فنية وعلمية خاصة بمسرح الجريمة.
8. يقيّم أهمية مسرح الجريمة في دعم التحقيقات الجنائية والإجراءات القضائية

Module Aims

1. تعريف الطلبة بمفهوم مسرح الجريمة وأهميته في التحقيق الجنائي.
2. توضيح أساليب حماية وتأمين مسرح الجريمة ومنع تلوث الأدلة.
3. تطوير مهارات الطلبة في جمع وحفظ وتوثيق الأدلة الجنائية.
4. بيان دور الخبراء والمحققين في فحص وتحليل مسرح الجريمة.
5. التعرف على التقنيات الحديثة المستخدمة في تصوير وتوثيق مسرح الجريمة.
6. تنمية القدرة على تحليل الوقائع وربط الأدلة بالأحداث الجنائية.

Module 20

Code	Course/Module Title	ECTS	Semester
FOR24009	Molecular Biology	7	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

Molecular Biology is a course that studies biological processes at the molecular level, focusing on the structure and function of DNA, RNA, and proteins. It covers topics such as gene expression, DNA replication, transcription, translation, and genetic regulation. The course also explains modern molecular techniques and their applications in medicine, biotechnology, and forensic science.

Module Learning Outcomes

1.Describe the main chemical components of cells, their structural properties, how these relate to their functions, and how they are altered during cellular processes

2. Explain theoretical frameworks (such a Michaelis Menten kinetics, the laws of thermodynamics and the chemiosmotic theory) that allow us to

understand function of biological molecules and cells

3. Integrate knowledge about heterotrophic metabolism of carbohydrates & lipids and phototrophic metabolism and how they relate to energy

metabolism via ATP

4. Relate knowledge of biological molecules to health and disease and to their application in biotechnology

5. Analyse and evaluate enzyme kinetics data

Module Aims

1. This module aims to provide a strong foundation in molecular biology and biochemistry that will be built upon in subsequent modules.

2. Core biological molecules will be examined with a focus on their structure and function.

3. Teaching will be delivered using a combination of lectures, workshops and practicals.

4. Problem solving and quantitative skills will be developed through complementary workshops using case studies, applications and examples based on lecture content.

5. Experience of biochemical techniques such as chromatography and enzyme kinetics will be gained through practicals.

6. The module will be assessed by an open exam at the end of the module

Module 21

Code	Course/Module Title	ECTS	Semester
KUS24020	Arabic Language 2	2	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17

Description

1- تعلم العربية السليمة كونها اللغة الرسمية للوطن.
2- اللغة جوهر الهوية ورمزها .
3- توظيف المفردات الفصيحة في صياغة الاكاديمية للبحوث العلمية مترجمة بنظرها الفصيح. التمكن من كتابة البحوث والمقالات ذات المحتوى العلمي الصرف باللغة العربية الفصحى.

Module Learning Outcomes

عند انتهاء مفردات المادة الدراسية يكون الطالب متمكنا من:

1- الكتابة السليمة خالية من الاخطاء
2- التعبير العلمي الاكاديمي الصحيح
3- استعمال المفردات الفصيحة توظيفا ونطقا
4- اضافة رصيد لغوي ومفاهيم جديدة لمعاني الكلمات
5- القدرة على المخاطبة الادارية في الطلبات الرسمية

Module 22

Code	Course/Module Title	ECTS	Semester
KUS24021	English Language 2	2	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	17
Description			

- Lectures
- Role playing
- Flipped classroom approach
- Time management
- Immediate feedback

Group work

Module Learning Outcomes

1. Introduce themselves and others, ask and answer basic personal questions, and use the verb to be in simple sentences.
2. Describe possessions and family relationships, using possessive adjectives and singular/plural nouns correctly.
3. Talk about daily routines, times, and schedules while using the present simple tense and frequency adverbs.
4. Discuss abilities, skills, and permissions using can and can't, and learn functional language for making requests.
5. Describe places and homes, use there is/there are with prepositions of place, and ask for and give directions.
6. Talk about past experiences and events using the past simple tense (regular verbs) and vocabulary for historical events.
7. Express preferences, likes, and dislikes, and practice using verbs followed by -ing or to forms.
8. Ask about prices, and use countable/uncountable nouns with some, any, and much/many.
9. Describe current actions using the present continuous tense and compare it with the present simple.
10. Talk about future plans and intentions using going to, and learn vocabulary for travel and holidays.
11. Discuss past events using the past simple tense (irregular verbs) and share personal experiences.

Module Aims

1 Build a foundational vocabulary for everyday topics such as family, work, shopping, and travel.

2. Master essential grammar structures, including the present simple, present continuous, past simple, and basic prepositions.

3. Listen for key information in simple conversations and audio texts, such as directions, introductions, and short dialogues.

4. Practice speaking in structured activities, including introductions, asking questions, and participating in short exchanges.

5. Write simple sentences and short texts, such as postcards, emails, and personal descriptions.

6. Read and understand short texts, notices, and articles on familiar topics.

7. Use practical language for daily interactions, like ordering food, asking for directions, or making plans.

8. Explore cultural differences and similarities through lessons that introduce English-speaking traditions and lifestyles

Module 23

Code	Course/Module Title	ECTS	Semester
KUS24022	Applications of Computer Science	3	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	27

Description

1. Deliver theoretical content through structured lectures.
2. Use multimedia aids (e.g., presentations, videos) to enhance understanding of abstract topics like AI and networking.
3. Hands-on practice for email setup, document collaboration, and troubleshooting.
4. Lab-based exercises to simulate network setups and resolve network issues.
5. Demonstrations of e-commerce tools, such as secure online banking and mobile payment systems.
6. Collaborative problem-solving for troubleshooting real-life IT issues.
7. Group discussions on AI's impact on society and ethical challenges.
8. Present real-world scenarios of AI applications in healthcare, finance, and transportation.
9. Analyze security breaches and propose preventive measures for network security.

Module Learning Outcomes

1-Network Security:

- Describe different types of networks and their components.
- Implement basic security measures to protect network integrity.

2-Technical Troubleshooting:

- Apply diagnostic tools to identify hardware/software problems.
- Use practical methods to resolve technical issues.

3-E-Commerce:

- Utilize electronic banking services for transactions.
- Explain the mechanisms behind online banking and security.

4-Artificial Intelligence:

- Identify applications of AI in daily life, such as smartphones and healthcare.
- Discuss the ethical and societal challenges posed by AI technologies.

Predict future trends and innovations in AI.

Module Aims

1. Security and Networking:
   - To introduce students to computer networks, their components, and basic security principles.

- To prepare students for managing and mitigating network threats.

2. Computer Troubleshooting:
   - To equip learners with the ability to diagnose and resolve common hardware and software issues.
3. E-Commerce:
   - To familiarize learners with electronic banking services, including online and mobile banking.
4. Introduction to AI:
   - To provide an overview of artificial intelligence and its applications in everyday life.
   - To introduce key ethical considerations, societal impacts, and future developments in AI.

Module 24

Code	Course/Module Title	ECTS	Semester
FOR24010	Analytical Chemistry	7	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

Analytical Chemistry is a course that studies the methods and techniques used to identify, separate, and measure chemical substances. It covers qualitative and quantitative analysis, laboratory instruments, and chemical testing procedures. The course also focuses on accuracy, precision, and the application of analytical methods in scientific, medical, industrial, and forensic fields.

Module Learning Outcomes

1. Understand and describe the fundamental principles and operation of analytical techniques, including spectroscopy, chromatography and electrochemistry.
2. Undertake calculations associated to the calibration of instruments and analytical quantification, and evaluate experimental error.
3. Operate basic analytical techniques, develop problem solving skills and be familiar with good laboratory practice.
4. Appreciate the implications of the provisions for COSHH (Control of Substances Hazardous to Health) and Health and Safety regulations in the laboratory environment.

Module Aims

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 25

Code	Course/Module Title	ECTS	Semester
FOR24011	Laboratory equipment and techniques	7	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

Laboratory Equipment and Techniques is a course that introduces the basic instruments, tools, and procedures used in scientific laboratories. It covers the proper use, maintenance, and safety of laboratory equipment, as well as common experimental techniques for handling, measuring, and analyzing samples. The course also emphasizes laboratory safety rules, accuracy in experiments, and correct documentation of results.

Module Learning Outcomes

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

Module Aims

This module aims to introduce students to Microscope and types , the spectroscopic and chromatographic techniques, Electrophoresis, Balance , Temperature control instrument , PCR & RT-PCR and provide them with hands-on experience of laboratory instrumental analysis, further developing the practical skills gained in the Laboratory Chemical & Biological module.

This module also aims to provide training to the students on the research methodology and skills, e.g. literature survey, experimental design, data acquisition, result analysis and report writing-up, which will pave the way for their final year research project.

Module 26

Code	Course/Module Title	ECTS	Semester
FOR24012	Investigation and criminal research	3	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	42

Description

تهدف إلى دراسة المبادئ والأساليب المستخدمة في التحقيق والبحث الجنائي. تركز المادة على جمع المعلومات، تحليل الأدلة، استجواب الشهود، وتطبيق الإجراءات العلمية والقانونية لكشف الجرائم. كما تتناول تقنيات التحقيق، تحليل السلوك الإجرامي، ودور العلوم الجنائية في دعم التحقيقات الجنائية

Module Learning Outcomes

تتميز مهمة الخبير بعدد من الخصائص وهي مهمة فنية ومحددة وذات طابع قضائي وإجراء اختياري للمحكمة , وعلى هذا الأساس يجب على الخبير ان يمتلك المهات الآتيه:

1-مهارة فنية

أن أهم ما تتميز به الخبرة أنها ذات طابع فني ولجوء القاضي أو المحقق إلى الاستعانة بالخبير أنما لكون المسألة المطروحة في الدعوى الجزائية ذات طابع فني لا يستطيع كل منهما أن يقدرها حسب مؤهلاته وخبراته ، وعليه فإن مهمة الخبير تفترض استعانة الخبير بمعلوماته الفنية وتبعا لذلك لا يعد خبيرا من يكلفه القاضي بمعاينة يعتمد فيها على حواسه فقط ، ولكن يعد خبيرا من كلفته المحكمة بأن يجري معاينة ويأتي بنتائج هذه الملاحظة إذا كانت تقتضي تطبيق أساليب علمية أو فنية.

2-مهاره القدره على تحديد حجم السلوك

عند انتداب الخبير بتحديد المهمة التي يقوم بها والمسائل التي يلتزم الإجابة او الكشف او التحليل عنها بما يتناسب واختصاصه الفني او المهني، فالقاضي يعين للخبير في صورة واضحة ومحددة موضوع مهمته وفي بعض الحالات يضع له أسئلة معينة يتعين على الخبير أن يجيب عنها ، ولا يجوز أن تكون مهمة الخبير عامة تشمل إبداء رأي في الدعوى ، إذ يعد ذلك تخليا من القاضي عن رسالته.

3-مهاره قضائية

المقصود بذلك أن مسألة اللجوء إلى الخبرة أمر تقرره المحكمة وحدها وهو أما بناء على طلب من الخصوم في الدعوى الجزائية أو استنادا إلى قرار تتخذه من تلقاء نفسها حسب تقديرها للمسألة المعروضة أمامها وحاجتها إلى رأي فني.

وأن مسألة اختيار الخبير تعود إلى المحكمة والتي تعتد في ذلك بمعارفه الفنية، ولها أن تستشير الخصوم في هذا الشأن ولكنها

غير ملزمة بطلبهم، فالخبير لا يمارس مهمته إلا بانتداب قضائي، إلا بانتداب قضائي، ويؤدي مهمته تحت إشراف القاضي، وخلاصة عمل الخبير التي يتضمنها تقريره تخضع في النهاية لتقدير القاضي.

4-مهاره إختيارية

الأصل في الخبرة أنها إجراء اختياري للمحكمة وهذا يعني أن المحكمة غير ملزمة بإجابة طلبات الخصوم بندب خبير في الدعوى ما دامت ترى في أدلة الدعوى المطروحة أمامها ما يمكنها من حسم الدعوى دون الاستعانة برأي الخبير.

وتطبيقاً لذلك قضت محكمة النقض المصرية بأنه " لا إخلال بحق الدفاع إذا لم تجب المحكمة طلب تعيين خبير لفحص العقد العقول بتزويره متى كان فيما ذكره حكمها عن طريق التزوير وثبوته على المتهم ما يفيد أن المحكمة اقتنعت بما شاهدته وما تبينته من وقائع الدعوى وأقوال الشهود بحصول التزوير وبأنها لم تكن في حاجة إلى الاستعانة برأي فني في ذلك " ، وقضت محكمة تمييز العراق بأن " المحكمة غير ملزمة باستدعاء خبير آخر إذا كانت الواقعة المبحوث عنها واضحة وضوحاً كافياً ، وفي هذه الحالة يتعين على المحكمة تسبيب رفضها "

Module Aims

إذا كان الهدف الأسمى للتحقيق الجنائي هي البحث والتحري عن الحقيقة ، فإن المحقق وحده لا يمكنه القيام والغموض وعدم الإلمام بكل جوانبها بذلك بمفرده خصوصاً إذا كانت الجريمة المرتكبة يشوبها اللبس أو فني يصعب على المحقق فهمها وتحليلها ، ليس بسبب لاسيما إذا تعلق التحقيق بوقائع لها طابع علمي تكوين المحقق في حد ذاته وخبرته القانونية لا تتيحان له إدراك نقص الذكاء او الخبرة او الإدراك بل أن التقنيين والمتخصصين .

Module 27

Code	Course/Module Title	ECTS	Semester
FOR35125	Molecular application	7	5
Class (hr/w)	**Lect/Lab./Prac./Tutor/Semn**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

Molecular Applications is a course that studies the practical applications of molecular biology techniques in different scientific fields. It focuses on methods such as DNA analysis, PCR, genetic engineering, and molecular diagnostics used in medicine, biotechnology, agriculture, and forensic science. The course also explains how molecular technologies contribute to research, disease detection, and scientific advancements.

Module Learning Outcomes

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 colored 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.

Module Aims

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 28

Code	Course/Module Title	ECTS	Semester
FOR35126	Instrumental Analysis	7	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

Module Learning Outcomes

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.

Module Aims

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 29

Code	Course/Module Title	ECTS	Semester
FOR35027	Forensic chemistry	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	47
Description			

Module Learning Outcomes

- 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.

Module Aims

- 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 30

Code	Course/Module Title	ECTS	Semester
FOR35130	Forensic Psychology	3	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	75

Description

علم النفس الجنائي هو علم دراسة أفكار ونوايا وردود فعل المجرمين وتحركاتهم التي تلعب دوراً في ارتكاب الجريمة. أدى الاهتمام بالجوانب النفسية للمجرم إلى نشأة هذا العلم، وكذلك عجز المؤسسات الاجتماعية في إيجاد الحلول المناسبة للحد من سلوك المجرم وثنيه عما أراد، وكذلك شكوى المجتمعات من تكاثر وتطور الجريمة في المجتمع الصغير والكبير، وفشل مؤسسات التربية والتعليم صغيرها وكبيرها في بعض الدول عن احتواء المراهقين وتعديل سلوكهم، ورؤية بعض علماء النفس والتربويين البحث والتقصي في مثل هذه القضايا التي أرهقت كاهل الشعوب والأمن في كثير من دول العالم.

Module Learning Outcomes

1- تطوير المهارات العملية الأساسية كمحقق جنائى، مثل :التحليل وحل المشكلات: لتحليل الأدلة وربط المعلومات .الانتباه للتفاصيل: للتعامل مع مسارح الجرائم وتفسير الأدلة .التواصل الفعّال: لإجراء مقابلات مع الشهود والمشتبه بهم.

2-جعل العامل في المجال ذو قدرة على الانتباة على الخصائص الفردية للشخوص المتواجدة في مسرح الجريمة سواء كانوا شهود او متهمين او بصفة أخرى بحيث يكون قادر على وضع فرضيات أولية تتناسب مع مامتوفر انيا في مسرح الحدث وما يمكن ان يتبين خلال البحث.

3-امتلاك الباحث الجنائي معلومات عن علم النفس العام بشكل عام وعلم النفس الجنائي بشكل خاص وبمستوى عالي بحيث يمكن استخدام هذه المعلومات خلال عملية التحري والتحقيق في مسرح الجريمة.

4-جعل العامل في المجال يمتاز بالذكاء والفطنة والقدرة على التحليل والاستنتاج. الصبر والتحمل والقدرة على العمل تحت الضغط وامتلاكه مهارات التواصل والاستجواب الجيدة.

Module Aims

1. اكتشاف الجريمة وتحديد المجرم على أساس علمي إنساني وبالاعتماد على شواهد لصفات المشتبة بهم وربطها مع مسرح الجريمة
2. دراسة السلوك الإجرامي من حيث أسبابه ودوافعه الشعورية واللا شعورية مما يساعد على فهم شخصية المجرم ووضع الفرضيات التي تؤكد او تزيل الشك تجاة المتهم من خلال صفات شخصية.
3. دراسة الظروف والعوامل الموضوعية التي تُهيئ للجريمة وتساعد عليها. -
4. تصنيف المجرمين طبقا لأعمارهم وجرائمهم وحالاتهم النفسية والعقلية بقصد تحديد خصوصية كل فئة مسؤلة عن الجرم لكل واحد منهم.
5. يتضمن دمج علم النفس في الحالات القانونية استخدام النظريات والمبادئ النفسية ومنهجيات البحث لفهم القضايا القانونية بشكل أفضل. ويمكن أن يتراوح ذلك من المستوى الجزئي، كفهم دوافع جريمة معينة، إلى المستوى الكلي، كتقييم فعالية برامج إعادة التأهيل داخل نظام السجون.

Module 31

Code	Course/Module Title	ECTS	Semester
FOR35028	Chemical and microscopic detection methods	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	1	78	47

Description

Module Learning Outcomes

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.

Module Aims

1.Acquire specialised understanding of how light interacts with molecules and materials.

2. Different methods of optical spectroscopy and their use to examine chemical and physical properties are addressed at an advanced level.

3. The students shall be able to explain the electronic processes that can be excited by light describe how scattered and emitted light from a sample can be determined and measured.

4.Explain the basic principles and properties of a laser and how it can be used in an optical experiment.

5. Provide an advanced account of how experimental spectroscopic data are interpreted in terms of the properties of molecules and molecular systems.

6.Describe the physical principles of an elementary photochemical reaction.

Module 32

Code	Course/Module Title	ECTS	Semester
FOR35029	Introduction to explosive materials and booby traps	3	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	42

Description

Module Learning Outcomes

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

Module Aims

People who work in areas that have experienced armed conflict may be confronted with the threat posed by landmines and explosive hazards, which include unexploded or abandoned ordnance, abandoned military vehicles and equipment, as well as IEDs. (Note that the term ERW includes unexploded ordnance (UXO) and abandoned ordnance but excludes landmines, see definition in the glossary, Annex 6). Any kind of explosive device may block access to project sites or pose a direct threat to safety, even years after a conflict has ended. When working in such areas, organizations and individuals must be aware of the physical threats posed by a huge variety of armaments left during and after armed conflict.

Module 33

Code	Course/Module Title	ECTS	Semester
FOR36131	Introduction to toxins and drugs	7	6
Class (hr/w)	**Lect/Lab./Prac./Tutor/semn**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

Module Learning Outcomes

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
6. and to characterize its impact on patient response to chiropractic care.

Module Aims

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 requires 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 34

Code	Course/Module Title	ECTS	Semester
FOR36032	Trace of forensic	4	6
Class (hr/w)	**Lect/Lab./Prac./Tutor/semn**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	1	63	37
Description			

Module Learning Outcomes

1. To provide you with a structure to enable you to critically examine rules of criminal evidence in England and Wales.
2. 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.
3. To instill 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.
4. 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.
5. 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.

Module Aims

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 i 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. Impact on the content of the law of evidence, particularly in the context

Module 35

Code	Course/Module Title	ECTS	Semester
FOR36033	Criminal insects	7	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	97

Description

Module Learning Outcomes

1- Describe the application of entomology to criminal investigations
2- Identify insect groups (especially carrion groups) and insect rearing cycles
3- Demonstrate proper handling, collection and preservation of insect evidence at crime scenes
4- Explain scientific principles behind the use of insects in homicide investigations
5- Identify where and when forensic entomology is important, and show the limitations of the technique and how they can be overcome
6- Describe the effects of habitat on insect evidence

Module Aims

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 36

Code	Course/Module Title	ECTS	Semester
FOR36034	Genetic statistical analysis and databases	4	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	67
Description			

Module Learning Outcomes

1- Describe the purpose of basic multivariate statistical methods.
2- Select an appropriate multivariate method for a given data set.
3- Apply adequate transformations for a given data set.
4- Perform multivariate statistical analysis on a computer in the R environment.
5- Visualize multivariate data by means of biplot construction.
6- Interpret biplots correctly and assess goodness-of-fit.
7- Carry out basic multivariate hypothesis tests.
8- State the peculiar nature of compositional data, and account it for in the analysis..

Module Aims

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 37

Code	Course/Module Title	ECTS	Semester
FOR36035	Inks and dyes and their warnings	4	6
Class (hr/w)	**Lect/Lab./Prac./Tutor/semn**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	33	67

Description

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.

Module Learning Outcomes

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.

Module Aims

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 38

Code	Course/Module Title	ECTS	Semester
FOR36036	Tissue , Hair and Fibers science	4	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	1	48	52
Description			

Module Learning Outcomes

1. Understanding the fundamental concepts of histology, including tissue types and their characteristics, hair types, and fiber types and their characteristics.
2. Recognizing the structure of tissues, hair, and fibers.
3. Receiving practical skills in determining the sex and location of a perpetrator through the examination of tissue, hair, or fiber samples.
4. Adhering to scientific ethics, working collaboratively as part of a team, and taking responsibility while performing scientific activities.
5. Promoting systematic scientific thinking, developing accuracy and discipline in handling data and results, and appreciating the role of this science in serving society and other applied sciences.

Module Aims

Developing skills in conducting forensic microscopic examinations for comparing tissues, hair, and fibers, which depends on several factors:

1. The degree of similarity between the sample and the original sample
2. The condition of the suspected material
3. The training and experience of the examiner of the suspected material
4. The use of scientific methodology in the field of histology, hair, and fibers

Module 39

Code	Course/Module Title	ECTS	Semester
FOR47038	Identify Definition Tools	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	47
Description			

Module Learning Outcomes

1. After completing the course, the student must be able to:
2. Relate the principles of fingerprints to personal identification and criminal investigation;
3. Identify the different personal identification techniques applied to investigation and detection of crimes and criminal justice
4. Demonstrate competence in collecting questioned and standard fingerprints as evidence in criminal investigation and solve crimes with the aid of different personal identification techniques, specifically, Fingerprint Identification..

Module Aims

The program aims to:

Provide future criminologist with strong interdisciplinary foundations to be able to respond appropriately and ethically in challenging "real-world" situations as they prepare to further education; and produce graduates equipped with leadership, skills and high sense of integrity, accountability, and responsibility.

Module 40

Code	Course/Module Title	ECTS	Semester
FOR47039	Bioinformatics	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	78	47

Description

This module is designed to provides an introduction to the principles and practical approaches of bioinformatics as a modern tool in forensic science for data understanding, investigation and research applied to genes and proteins.

Module Learning Outcomes

1. Understand how bioinformatics is related to molecular biology and utilized in forensic evidence analysis.
2. Gain more knowledge about DNA, RNA and protein sequences and structures.
3. Learn the current genome sequencing techniques.
4. Gain knowledge in search sequence databases.
5. Be able to perform sequences alignments.
6. Learn how to interpretate sequencing analysis results.
7. Be able to predict genes.
8. Be able to perform phylogenetic analysis.
9. Design primers.
10. Be able to analyze RNA and predict protein structures proteins docking.

Module Aims

1. understand how bioinformatics is related to molecular biology and utilized in forensic evidence analysis.
2. Gain more knowledge about DNA, RNA and protein sequences and structures.
3. Learn the current genome sequencing techniques.
4. Gain knowledge in search sequence databases.
5. Be able to perform sequences alignments.
6. Learn how to interpretate sequencing analysis results.
7. Be able to predict genes.
8. Be able to perform phylogenetic analysis.
9. Design primers.
10. Be able to analyze RNA and predict protein structures proteins docking.

Module 41

Code	Course/Module Title	ECTS	Semester
FOR47041	Environmental Toxins and Industrial Pollution	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	78	47

Description

The main aim of this course is to provide a sound understanding of pollution and their causes to enable a well-informed strategy to controlling them.

Module Learning Outcomes

At the end of this course, the student in forensic department should be able to:

1. define and explain the concept of pollution
2. identify different types of pollutants
3. explain varying forms of pollution
4. describe sources of pollution state the different environmental media
5. discuss the impact of pollutants on the environment and human health
6. explain the strategies for the control of pollution.

Module Aims

The aim of the course will be achieved by:

1. introducing you to pollution control practices right from the local approach to the use of modern techniques
2. Understanding the concept of pollution
3. Classifying the various forms of pollution
4. Understanding the methods of controlling pollution
5. Explaining different environmental media
6. Providing you the basic knowledge of living with pollution free environment.

Module 42

Code	Course/Module Title	ECTS	Semester
FOR47042	Weapons and machine artifacts	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	78	47

Description

Module Learning Outcomes

1. Radiation Sources and Their Effects
2. Radiation Effects on Biological Tissue
3. Protection from External Radiation and Protection from Internal Radiation.
4. Personal Protective Equipment (PPE).
5. Regulations and Laws Regarding Radiation.

Module Aims

1. Health effects of radiation on living organisms. Understand the types of radiation and their health effects.
2. Know the protective measures to minimize radiation exposure.
3. Apply protective techniques in various scientific and health-related fields.
4. Understand the safety regulations and laws related to radiation

Module 43

Code	Course/Module Title	ECTS	Semester
FOR47040	Basics of Fingerprint Analysis and Fonts	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	78	47

Description

A fingerprint-based biometric system is essentially a pattern recognition system that recognizes a person by determining the authenticity of her fingerprint. Depending on the application context, a fingerprint-based biometric system may be called either a verification system or an identification system

Module Learning Outcomes

1. After studying this module, you shall be able to know –
2. The correlation between fingerprints and ridges on the fingertips.
3. The functions of finger ridges.
4. Fundamental principles on which the science of fingerprinting and sign is based.
5. The broad patterns of fingerprints.
6. How fingerprints and sign may be used for individualization.

Module Aims

A verification system authenticates a person's identity by comparing the captured fingerprints with her own biometric template(s) pre-stored in the system. It conducts one-to-one comparison to determine whether the identity claimed by the individual is true; an identification system recognizes an individual by searching the entire template database for a match. It conducts one-to-many comparisons to establish the identity of the individual.

Module 44

Code	Course/Module Title	ECTS	Semester
KUMR41037	Methodology Research	1	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	0	18	7

Description

يُعد هذا المقرر من أهم المقررات الدراسية كونه يمكن الطالب الجامعي من المهارات التي تساعده على انجاز بحث التخرج، وهو يعمل على إكسابه مجموعة من المعلومات والمعارف حول العلم والمعرفة، والبحث العلمي ومناهجه، وينمي الاتجاهات الإيجابية لدى المتعلم تجاه البحث العلمي، ويتحقق ذلك من خلال مجموعة من الأنشطة الفاعلة)طرائق وأساليب تدريس، ووسائل (كطريقة الحوار والمناقشة، والتعلم الذاتي، والبحث، والتطبيقات، مع استخدام الباوربوينت عند العرض، وتقييم الطالب من خلال المشاركة الصفية والتكليفات المصاحبة - الصفية واللاصفية - والاختبار النصفي والنهائي.

Module Learning Outcomes

1-تعريف الطالب بأساليب ومفاهيم اخلاقيات البحث العلمي والحفاظ على الامانة العلمية.

2-التعرف على التطبيقات المنهجية التي يدرسها الباحث والعمل على اتخاذ الاجراءات الصحيحة لحل المشاكل التي تواجه الفرد والمجتمع.

3-بناء القدرات والمهارات العلمية للطالب في كتابة البحوث العلمية.

4-تهدف المادة المعرفية الى تطبيق المنهجية العلمية ذات العلاقة بأسس ومتطلبات مناهج البحث العلمي.

5-تهدف المادة المعرفية الى ألتزام الباحث وعلى وجه التحديد الطالب بنزاهة وأدراك اهمية المنهج العلمي.

6- تهدف المادة المعرفية الى معالجة مشاكل واقعية والعمل على ايجاد الحلول له.

Module Aims

1. تعليم الطالب بأساليب وأخلاقيات البحث العلمي ليستفيد من قدرته في كتابة البحوث العلمية وأيجاد الحلول المناسبة لحل المشكلات والمعضلات التي تواجه المجتمع.
2. العمل على زيادة القدرة في كتابة البحوث العلمية و أيجاد الحلول لمشكلة البحث.
3. معالجة المعضلات والمشكلات التي تواجه المجتمع.
4. جمع المعلومات بشكل دقيق وبالتالي دراستها فيما يخص المشكلة المبحوثة.

Module 45

Code	Course/Module Title	ECTS	Semester
KUMR41037	Weapons and machine artifacts	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	78	47

Description

Module Learning Outcomes

By the end of this course, students will be able to:

1- Define different types of weapons and mechanical artifacts used in criminal activities.

2- Describe the components and operating mechanisms of firearms and related machines.

3- Identify and classify forensic evidence associated with weapons and machinery.

4- Analyze tool marks, ballistic evidence, and mechanical traces using forensic methods.

5- Apply proper safety procedures during the handling and examination of weapons.

6- Use basic forensic laboratory techniques for weapon and artifact investigation.

7- Interpret forensic findings and prepare scientific reports related to weapon evidence.

8- Evaluate the role of weapons and machinery analysis in criminal investigations and court evidence.

Module Aims

1. Introduce students to the principles of weapons and mechanical artifacts used in forensic investigations.
2. Develop understanding of the classification, structure, and function of firearms and related machinery.
3. Explain methods used in identifying and examining weapon-related evidence at crime scenes.
4. Provide knowledge about tool marks, firearm marks, and mechanical traces used in forensic analysis.
5. Enhance students' practical and analytical skills in handling and documenting weapon evidence safely and accurately.
6. Familiarize students with laboratory techniques and modern technologies used in weapon and machinery examination..

Module 46

Code	Course/Module Title	ECTS	Semester
KUET007	Ethics of Scientific Research	2	8

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17

Description

Module Learning Outcomes

1. زيادة الوعي العلمي حول الاخلاقيات التي يجب التحلي بها من قبل الباحثين.
2.بيان الاخلاقيات الحميدة والسيئة من اجل تنمية الاولى ومكافحة وتجنب الاخيرة.
3 . بيان كيفية اعداد البحوث العلمية مع مراعاة الامانة العلمية.
4.بيان كيفية العمل على بحث علمي رصين خال من السرقة العلمية والاستلال العلمي

Module Aims

1.بيان المقصود باخلاقيات البحث العلمي.

2. ايضاح سبيل النهوض باخلاقيات البحث العلمي.

3. تعزيز اخلاقيات الواجب اتباعها في اعداد البحوث العلمية

Module 47

Code	Course/Module Title	ECTS	Semester
FOR47043	Cybercrime	4	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	1	48	52

Description

Module Learning Outcomes

1. Demonstrate a good knowledge of cybercrime and related behaviors, their various forms, their wider implications, and methods used to investigate them
2. Develop a high level of confidence in the use of basic investigative tools and critically assess the data gained from them
3. Demonstrate a high level of computer literacy so as to understand the ramifications of cybercriminal behaviors
4. Critically reflect on the role and impact of cybercrime within the wider context of crime more generally
5. Demonstrate an understanding of the evolutionary arms race between new methods for committing crime and crime detection and investigation methods
6. Critically evaluate the impact on theoretical criminological models of increased, and diversified, internet-crimes and subsequent changes to law enforcement approaches
7. Demonstrate ability to work as part of a group on a joint project
8. Demonstrate written analytical skills by producing an essay and technical report to a deadline
9. Demonstrate the ability to present group-based work in a professional manner

Module Aims

This module has two main aims. The first is to provide you with a broad understanding of the various forms of cybercrime; such as phishing scams, malware attacks, intellectual property theft, online sex crimes, disinformation, cyber-terrorism, and cyber-war. Developing your understanding of these different types of crime will also involve you gaining an understanding of how the internet works, the current and ever-changing legal frameworks concerning such online behaviors, and the different forms of cyber-criminals that exist and the different types of targets that their acts cause issues for, such as individuals, organizations, and nation states.

The second involves introducing you to some of the basic techniques used by both law enforcement agencies and the private sector in order to detect, investigate and prevent cyber-attacks. This will involve you learning about investigative tools pertaining to areas such as domain registration data, IP address data, and geolocation. This aspect of the module will be taught to you via practical lab-based sessions which will teach you some of the open-source tools that are used by investigators in order to demonstrate how threat actors can be identified and their webs of connected holdings can be mapped for defensive (or offensive)
purposes, and how these techniques have been used in high-profile cybercrime cases.

Module 48

Code	Course/Module Title	ECTS	Semester
FOR48043	Principles of Medical Jurisprudence	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	47

Description

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.

Module Learning Outcomes

1. On completion of this course, the student will be able to:
2. By the end of this course students will have acquired a sound knowledge and understanding of foundational areas of medical law as they operate within the United Kingdom and, where appropriate, in an international context. This will include a critical awareness of contemporary issues in medical law and an ability to analyse these issues, drawing on their knowledge of the discipline as a whole
3. Students will have acquired a deep understanding of the range of ethical principles which are brought to bear on medical law equally by health care professionals, the courts and legislatures. They will be able to apply these principles critically to existing laws and proposals for reform with respect to the management and regulation of modern medicine
4. Students will be able to apply critical evaluation to existing legal approaches to arrange of topics, including the regulation of the dr/patient relationship, the role of the modern state in the delivery of health care, the impact of human rights on care and treatment decisions, and the current provisions that apply to the regulation of medical research involving human participants.
5. Through problem-based enquiry and group discussion, students will develop a range of analytical and communication skills related to problem-deconstruction, the application of ethically-informed thinking, the construction of arguments and the coherent and convincing defense of their own positions on the range of medical dilemmas addressed in the course.
6. Through independent working, research and analysis, as evidence by appropriate assessment methods, students will be able to demonstrate initiative and the ability to work autonomously and take responsibility for their own work.
7. Interpret histo-pathological, microbiological, radiological, chemical analysis, DNA profile and other investigative reports for medico-legal purposes.

Module Aims

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 49

Code	Course/Module Title	ECTS	Semester
FOR48044	Comparing fonts and signatures	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	1	48	77
Description			

Module Learning Outcomes

After studying this module, you shall be able to know –

1. Understanding the different types of fonts across languages and their characteristics
2. Able to distinguish between people who possess right-handed or left-handed writing skills and their relationship to the direction of writing, from top to bottom or from right to left and vice versa.
3. He will be able to distinguish between fonts and their types and apply them in various documents.
4. It is able to distinguish between genuine and forged handwriting.
5. Capable of distinguishing different types of forgery

Module Aims

Studies comparing fonts and signatures aim to analyze how typographic styles and handwritten elements affect viewer perception, brand identity, legibility, and emotion. These studies often focus on identifying the most effective font for on-screen readability, understanding the "semantic signatures" or psychological impact of typeface choices, and assessing the authenticity or professional tone conveyed by various signatures and font styles.

Module 50

Code	Course/Module Title	ECTS	Semester
FOR48047	Automatic Fingerprint system	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	63	62
Description			

Module Learning Outcomes

After completing the course, the student must be able to:

1. Relate the principles of fingerprints to personal identification and criminal investigation;
2. Identify the different personal identification techniques applied to investigation and detection of crimes and criminal justice
3. Demonstrate competence in collecting questioned and standard fingerprints as evidence in criminal investigation and solve crimes with the aid of different personal identification techniques, specifically, Fingerprint Identification.

Module Aims

The program aims to:

1. Provide future criminologist with strong interdisciplinary foundations to be able to respond appropriately and ethically in challenging “real-world” situations as they prepare to further education;
2. Produce graduates equipped with leadership, skills and high sense of integrity, accountability, and responsibility.

Module 51

Code	Course/Module Title	ECTS	Semester
FOR48048	Graduation Project	8	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
4	0	63	137

Description

Module Learning Outcomes

1. On successfully completing the module students will be able to:
2. Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to Forensic Science.
3. Demonstrate skills in presenting scientific material and arguments clearly and correctly, to a range of audiences.
4. Demonstrate competence in the planning, design and execution of research investigations, from the problem-recognition stage through to the evaluation and appraisal of results and findings; this to include the ability to select appropriate techniques and procedures.

Module Aims

1. Students will be expected to demonstrate practice skills and knowledge of social work theory and methods of intervention and apply these appropriately in an ethical and research evidence based way to the context of social work practice.
2. The module aims to help students develop an awareness of the methods and techniques available for further investigation of the problem, including designing investigations, collecting appropriate results, analysing the results and evaluating the results and the process by which they have been achieved.
3. The module aims to provide students with an understanding of the legal, ethical and professional context of Computer Science, in its applied context.

Module 52

Code	Course/Module Title	ECTS	Semester
FOR48046	Forensic Chemistry Applications	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62

Description

Module Learning Outcomes

By the end of this course, students will be able to:

Define the principles and scope of forensic chemistry applications.

Identify different types of chemical evidence encountered at crime scenes.

Explain analytical methods used in forensic chemical investigations.

Analyze drugs, toxins, explosives, and trace materials using forensic techniques.

Apply laboratory safety procedures during chemical examinations.

Interpret chemical analysis results and relate them to criminal investigations.

Prepare scientific and forensic reports based on laboratory findings.
Evaluate the importance of forensic chemistry in supporting legal and criminal justice systems..

Module Aims

1. Introduce the fundamental principles and applications of forensic chemistry in criminal investigations.
2. Develop students' understanding of chemical analysis techniques used in forensic laboratories.
3. Explain the role of forensic chemistry in the detection and identification of criminal evidence.
4. Provide knowledge about toxic substances, drugs, explosives, and trace evidence analysis.
5. Enhance laboratory and analytical skills required for forensic chemical examinations.
6. Familiarize students with safety procedures and ethical standards in forensic chemical practice.

Contact

Program Manager:
Assist. Prof. Dr. Genan Adnan Abdullateef | Ph.D. Histology |
Email: galbairuty@kusiedu.iq
Mobile no.:
Program Coordinator:
Assist.Lec Aeshah Abood Ahmed | MSc. in Biotech.
| Email:
Mobile no.: