University of the West of Scotland

Module Descriptor

Session:

Title of Module: Forensic Laboratory Techniques			
Code: CHEM09009	**SCQF Level: 9 (Scottish Credit and Qualifications Framework)**	**Credit Points: 20**	**ECTS: 10 (European Credit Transfer Scheme)**
School:	School of Computing, Engineering, and Physical Sciences		
Module Co-ordinator:	Ann-Sophie Korb		

Summary of Module

The following topics shall be presented over the course of the module:

Drugs of Abuse: Drugs of abuse: UK legislation (including MDA 1971; MDAR 1985). Terms/definitions. Sampling of drug seizures – presumptive tests, microscopic examination, methodologies, colour-forming reactions.

Laboratory Techniques related to Forensic Science: Introductory principles of sample isolation and clean up. Chromatographic and spectroscopic identification of drugs. Fingerprints and development techniques.

Crime Scene Procedures: Fingerprint development, presumptive testing of biological materials DNA profiling, analysis by PCR amplification; DNA as evidence

Forensic Science Laboratory Analyses: Analysis of alcohol and drugs by Gas Chromatography and Thin Layer Chromatography. Atomic Absorption Spectroscopic analysis of metals from bullets. Presumptive tests and microscopy of drug samples.

This module will work to develop a number of the key 'I am UWS' Graduate Attributes. Those who complete this module will have developed professional competencies in report writing and the knowledge, skills and abilities related to research and laboratory work in Forensic Science.

Module Delivery Method

Face-To-Face	**Blended**	**Fully Online**	**HybridC**	**Hybrid 0**	**Work-Based Learning**
☒	☐	☐	☐	☐	☐

See Guidance Note for details.

Campus(es) for Module Delivery						
The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
☒	☐	☐	☐	☐	☐	Add name

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	☐	Term 2	☒	Term 3	☐

Learning Outcomes: (maximum of 5 statements) **These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.** At the end of this module the student will be able to:	
L1	Demonstrate a critical understanding of the theory and application of a selection of laboratory methods in forensic science
L2	Display an understanding of the processing of forensic evidence from crime scene to laboratory
L3	Acquire and develop analytical and associated data handling and processing skills in a series of laboratory analytical techniques examining materials of forensic interest
L4	Describe how colourimetric, immunoassay presumptive tests are used in forensic science
L5	Describe a variety of methods to develop Fingermarks and how they are compared

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	SCQF Level **9** Broad integrated knowledge of the principle analytical techniques employed in forensic science laboratories
Practice: Applied Knowledge and Understanding	SCQF Level **9**

	Undertake a series of experiments featuring the above techniques in both a qualitative and quantitative context in the analysis of 'real' samples	
Generic Cognitive skills	SCQF Level **9** Undertaking critical analysis of the available methodologies to devise appropriate analytical protocols for sample preparation and analysis.	
Communication, ICT and Numeracy Skills	SCQF Level **9** Bringing information together from a variety of sources, using information retrieval systems and appropriate IT skills, to produce written reports for assignments and laboratory exercises. Carrying out a literature review and delivering a presentation	
Autonomy, Accountability and Working with others	SCQF Level **9** Working effectively with others in laboratory environment and identifying and addressing individual/personal learning needs in the subject area associated with the module	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code: CHEM07013	**Module Title:**Molecules of Life
	Other:	Or other suitable background
Co-requisites	**Module Code:**	**Module Title:**

*Indicates that module descriptor is not published.

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	24
Laboratory/Practical Demonstration/Workshop	24

Independent Study	152
	Hours Total 200

****Indicative Resources: (eg. Core text, journals, internet access)**

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

Jackson, A., Jackson J. (2017) *Forensic* Science. 4th edn. Harlow : Pearson

Cole, MD. (2003) *The Analysis of Controlled Substances*, Chichester: Wiley

Khan, J., Kennedy, T.J., Donnelll, C.R. (2012) *Basic Principles of Forensic Chemistry*. New York, N.Y. ; London : Humana Press

Langford, A. (2018) *Practical Skills in Forensic Science.* 3rd edn. Harlow: Pearson Education Limited

Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.

Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.

(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the Student Attendance and Engagement Procedure: Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

Attendance of all classes (classes and laboratories), regular engagement with online materials, and submission of assessments.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code.

Please ensure any specific requirements are detailed in this section. Module Co-ordinators should consider the accessibility of their module for groups with protected characteristics..

Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module is laboratory-based and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations. More information on the University's EDI policies can be accessed at: https://www.uws.ac.uk/about-uws/uws-commitments/equality-diversity-inclusion/ UWS Equality and Diversity Policy
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	Physical Sciences
Assessment Results (Pass/Fail)	Yes ☐No ☒
School Assessment Board	Physical Sciences
Moderator	Carrie Mullen
External Examiner	I. Turner
Accreditation Details	This module is part of programmes Accredited and Recognised by the Chartered Society of Forensic Sciences
Changes/Version Number	Summary of Module: minor edits Module Delivery: From Hybrid-C to Face-to-Face. Learning Activities: Removal of 8 hours tutorial, which have been moved to the Lecture / Content Delivery. Attendance and Engagement Requirements: sentence added to clarify meaning of attendance/engagement in this module. Accreditation Details: Chartered Society of Forensic Sciences added. Assessment: Change from 'unseen open book' to 'unseen closed book Class Test'.

Assessment: (also refer to Assessment Outcomes Grids below)
Assessment 1 – Unseen, closed book Class Test (60%)
Assessment 2 – Laboratory, written assessments, oral presentation (40%)
(N.B. (i) **Assessment Outcomes Grids** for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An **indicative schedule** listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Assessment Outcome Grids (See Guidance Note)

Component 1							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Learning Outcome (5)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Unseen, face-to-face closed book Class Test	X	X	X	X	X	60	2

Component 2							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Learning Outcome (5)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Report of practical/ field/ clinical work	X		X	X	X	30	
Review/ Article/ Critique/ Paper	X	X	X		X	5	
Clinical/ Fieldwork/ Practical skills assessment/ Debate/ Interview/ Viva voce/ Oral	X	X	X	X	X	5	
Combined Total for All Components						**100%**	**2 hours**