

## University of the West of Scotland

## Module Descriptor

Session: 2024/25

Title of Module: Evaluating Forensic Evidence			
Code: CHEM08007	SCQF Level: 8 (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:	Dr Kwok Chi Chim		
Summary of Module			
<p>This module covers two aspects of forensic science, crime scene investigation and the use of statistics and probability to interpret evidence.</p> <p>We will look at the role of CSI in investigations and the techniques used to record scenes, identify, and recover potential evidence. Management of scenes, chain of evidence, contamination and risk assessment will also be covered. There are lab sessions where students will develop the practical skills of crime scene processing and applying those techniques in a mock crime scene setting.</p> <p>Application of probability and statistics to forensic science is also covered. Content includes probability laws, conditional probabilities, independence, Bayes' theorem and tree diagrams. The approach of measuring chance using odds is considered and students will see how a balanced view of the strength of evidence in support of hypotheses can be captured by the likelihood ratio.</p> <p>An overview of genetics and the use of databases will be given so that DNA evidence can be evaluated. The use of likelihood ratios to evaluate evidence and the evaluation of DNA evidence is also covered.</p> <p>The binomial and normal distributions will be introduced to assess the probability of different types of evidence occurring by chance.</p> <p>There will also be an introduction to inferential statistics looking at confidence intervals for a population mean and hypothesis testing.</p>			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	Hybrid 0	Work-Based Learning
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**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:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Add name

### Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1	<input checked="" type="checkbox"/>	Term 2	<input type="checkbox"/>	Term 3	<input type="checkbox"/>
--------	-------------------------------------	--------	--------------------------	--------	--------------------------

### 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	calculate probabilities and odds in a range of different ways required in forensic science.
L2	apply the principles of evaluating evidence in the context of forensic science.
L3	describe the procedures involved in the identification, recording and recovery of material from various types of crime scene.
L4	demonstrate a full understanding of the importance of crime scene investigation in the crime-scene to-court chain.
L5	understand the roles and responsibilities and information needs of all personnel involved in the processing of crime scenes.

### 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)	<p>SCQF Level <b>8</b></p> <p>Use a range of techniques to calculate probabilities and odds related to forensic evidence.</p> <p>Understanding the principles of an evaluative approach to forensic evidence.</p>

	Understanding of the issues related to contamination of evidence and knowledge of the roles of various personnel involved at crime scenes.	
Practice: Applied Knowledge and Understanding	<p>SCQF Level <b>8</b></p> <p>Apply the principles of assessing evidence in routine contexts in forensic science.</p> <p>Evaluate a range of evidence types using probabilities and odds.</p> <p>Carry out the standard techniques of crime scene investigation such as photography, note-taking, evidence packaging, systematically searching for evidence, and recovering various evidence types.</p>	
Generic Cognitive skills	<p>SCQF Level <b>8</b></p> <p>Critical evaluation of forensic evidence in routine contexts.</p> <p>Drawing conclusions about sets of measurements.</p> <p>Undertaking analysis of crime scenes found in real cases applying the concepts and methods discussed in class.</p>	
Communication, ICT and Numeracy Skills	<p>SCQF Level <b>8</b></p> <p>Reporting on the results of evaluating evidence.</p> <p>Performing the calculations required to calculate probabilities and odds.</p> <p>Conveying appropriate information from crime scenes in written notes, sketches, reports and photographs.</p>	
Autonomy, Accountability and Working with others	<p>SCQF Level <b>8</b></p> <p>Identify and address own learning needs, both within and outwith class time.</p> <p>Be able to work as part of a team that plans and executes the investigation of crime scene.</p>	
<b>Pre-requisites:</b>	Before undertaking this module the student should have undertaken the following:	
	<b>Module Code:</b> MATH07001	<b>Module Title:</b> Analysis of Data
	<b>Other:</b>	Or equivalent
<b>Co-requisites</b>	<b>Module Code:</b>	<b>Module Title:</b>

\*Indicates that module descriptor is not published.

<b>Learning and Teaching</b>	
<b>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.</b>	
<b>Learning Activities</b> During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	<b>Student Learning Hours</b> (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
<b>**Indicative Resources: (eg. Core text, journals, internet access)</b>	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes:</p> <p>Andrew Jackson and Julie Jackson, Forensic Science, 4th Ed., Pearson Education Ltd. (2017) ISBN 978-1-292-08818-1</p> <p>Class notes as published on the University VLE.</p> <p>Ian Evett and Bruce Weir: Interpreting DNA Evidence – Statistical Evaluation for Forensic Scientists, John Wiley and Sons 1998 087893 1554</p> <p>C.G.G. Aitken: Statistics and the Evaluation of Evidence for Forensic Scientists, John Wiley and Sons 2004</p> <p>Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.</p> <p>Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.</p>	
(**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)	
<b>Attendance and Engagement Requirements</b>	

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..

(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

<b>Divisional Programme Board</b>	Physical Sciences
<b>Assessment Results (Pass/Fail)</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>School Assessment Board</b>	Physical Sciences
<b>Moderator</b>	Dr Ciaran Ewins
<b>External Examiner</b>	I Turner
<b>Accreditation Details</b>	This is a core module in the BSc (Hons) Forensic Science which is accredited by the Chartered Society of Forensic Sciences
<b>Changes/Version Number</b>	3.0 Small change in Summary of Module. Change of Module Delivery Method to Face-to-face. Change of Term for Module Delivery to Term 1. Slight re-wording in Learning Outcomes. Change in pre-requisites.  Update in Indicative Resources. Attendance and Engagement Requirements outlined.

<b>Assessment: (also refer to Assessment Outcomes Grids below)</b>
Continuous assessment worth 100% of the final mark
The assessment components in this module will consist of a written assignment and a class test in statistics (50%) and a lab report and class test in CSI worth 50%
(N.B. (i) <b>Assessment Outcomes Grids</b> 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 <b>indicative schedule</b> 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)**

<b>Component 1</b>							
<b>Assessment Type (Footnote B.)</b>	<b>Learning Outcome (1)</b>	<b>Learning Outcome (2)</b>	<b>Learning Outcome (3)</b>	<b>Learning Outcome (4)</b>	<b>Learning Outcome (5)</b>	<b>Weighting (%) of Assessment Element</b>	<b>Timetabled Contact Hours</b>
Class Test	✓	✓				20	
Assignment	✓	✓				30	
Lab report			✓	✓	✓	40	
Class Test			✓	✓	✓	10	
<b>Combined Total for All Components</b>						<b>100%</b>	<b>0 hours</b>