

## CORPORATE AND ACADEMIC SERVICES

### MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Forensic Biology and Genetics				
Module Code	USSKCB-30-M	Level	M	Version	1
Owning Faculty	Health & Applied Sciences	Field	BBAS		
Contributes towards	MSc Advanced Forensic Analysis				
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard
Pre-requisites	None		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements	N/A	
Valid From	September 2014		Valid to	September 2020	

<b>CAP Approval Date</b>	28/03/2014
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Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> <li>critically discuss current approaches to forensic genetic profiling;</li> <li>carry out DNA analysis and interpret different types of DNA profile that can be encountered in forensic genetics;</li> <li>apply statistical analysis to datasets often encountered by forensic scientists;</li> <li>assess analysis methods currently employed in forensic biology and DNA profiling;</li> <li>critically evaluate current practices and techniques in forensic biology and DNA analysis;</li> <li>demonstrate an advanced knowledge of a range of microscopes and microscopy techniques used in forensic biology;</li> <li>demonstrate an advanced understanding of the interpretation of blood patterns;</li> <li>communicate complex scientific procedures to both experts and non-experts;</li> <li>present information in appropriate terminology and be aware of the role of an expert witness;</li> <li>critically assess, present and discuss primary reference source material.</li> </ul>
Syllabus Outline	<p>In this module students will study current techniques used in forensic biology and DNA profiling, including presumptive testing, DNA extraction, quantification, amplification, detection and interpretation of single, partial and mixed profiles. Statistical analysis of datasets often encountered by forensic scientists will also be covered e.g. using population genetics in the interpretation of DNA profiles. Students will also study blood pattern analysis at an advanced level and the theory and use of microscopes including polarising and confocal for the examination of hairs</p>

	and fibres as well as techniques such as Fluorescence In-situ Hybridisation (FISH). Students will learn what is required of an expert witness and how to present their findings both verbally and in writing to experts and non-experts.																																		
Contact Hours	<p>The contact hours (72) are distributed as follows:</p> <p>38 hours interactive lectures 30 hours practicals 4 hours workshop/seminars</p>																																		
Teaching and Learning Methods	<p>The theoretical material will be delivered mostly as lectures reinforced by directed reading, practical activities and directed tasks. The practical work will support and extend lecture material, and will include simulation casework and data interpretation. Tutorials and learning support will be offered at key times. Online resources will support the module. It will provide access to course documents, sample exam questions and other learning materials.</p> <p><b>Scheduled learning</b> includes lectorials and simulated practical classes.</p> <p><b>Independent learning</b> includes hours engaged with essential reading, assignment preparation and completion, etc. These sessions constitute an average time per level as indicated in the table below.</p>																																		
Key Information Sets Information	<p>Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are</p> <table><tr><td colspan="4">Number of credits for this module</td><td>30</td></tr><tr><td>Hours to be allocated</td><td>Scheduled learning and teaching study hours</td><td>Independent study hours</td><td>Placement study hours</td><td>Allocated Hours</td></tr><tr><td>300</td><td>72</td><td>228</td><td>0</td><td>300</td></tr></table> <p>The table below indicates as a percentage the total assessment of the module which constitutes a -</p> <p><b>Written Exam:</b> Unseen written exam, <b>Coursework:</b> Practical crime scene examination, including full documentation</p> <table><tr><td colspan="4">Total assessment of the module:</td></tr><tr><td colspan="4">Written exam assessment percentage</td><td>50%</td></tr><tr><td colspan="4">Coursework assessment percentage</td><td>50%</td></tr><tr><td colspan="4"></td><td>100%</td></tr></table>	Number of credits for this module				30	Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours	300	72	228	0	300	Total assessment of the module:				Written exam assessment percentage				50%	Coursework assessment percentage				50%					100%
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Reading Strategy	All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject																																		

	<p>relevant resources and services, and to the library catalogue. Many resources can be accessed remotely. Students will be presented with opportunities within the curriculum to develop their information retrieval and evaluation skills in order to identify such resources effectively.</p> <p>Any <b>essential reading</b> will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set text, be given or sold a print study pack or be referred to texts that are available electronically, etc. This guidance will be available either in the module handbook, via the module information on Blackboard or through any other vehicle deemed appropriate by the module/programme leaders.</p> <p>If <b>further reading</b> is expected, this will be indicated clearly. If specific texts are listed, a clear indication will be given regarding how to access them and, if appropriate, students will be given guidance on how to identify relevant sources for themselves, e.g. through use of bibliographical databases.</p>
Indicative Reading List	<p><i>The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. However, as indicated above, CURRENT advice on readings will be available via other more frequently updated mechanisms.</i></p> <p><b>Indicative Reading List:</b></p> <p>Most recent editions of:</p> <p>*Butler, J.M. <i>Fundamentals of Forensic DNA typing</i>. Burlington, MA: Elsevier Academic Press.</p> <p>Goodwin, W., Linacre, A. &amp; Hadi, S. <i>An Introduction to Forensic Genetics</i>. Hoboken, NJ: John Wiley &amp; Sons.</p> <p>Jackson, A.R.W. &amp; Jackson, J.M. <i>Forensic Science</i>. Harlow: Prentice Hall.</p> <p>Rapley, R. &amp; Whitehouse, D. <i>Molecular Forensics</i>. Hoboken, NJ: John Wiley &amp; Sons.</p> <p>Roberts, P. &amp; Willmore, C. <i>The role of Forensic Science Evidence in Criminal Proceedings</i>. London: HMSO.</p> <p>Robertson, B. &amp; Vignaux, G. A. <i>Interpreting Evidence - Evaluating Forensic Science in the Courtroom</i>. Hoboken, NJ John Wiley &amp; Sons.</p> <p>Wheeler, B.P. &amp; Wilson, L.J. <i>Practical Forensic Microscopy</i>. Hoboken, NJ: John Wiley &amp; Sons.</p> <p>* Recommended text</p> <p>appropriate journals</p>

Part 3: Assessment	
Assessment Strategy	<p>The Assessment Strategy has been designed to support and enhance the development of both subject-based and employability skills, whilst ensuring that the modules Learning Outcomes are attained, as described below.</p> <p>The controlled component is a written exam. The exams will be 3 hours duration which is consistent with the Department's assessment strategy for Level M modules. This assessment will provide students with an opportunity to demonstrate their knowledge on a broad range of topics through a selection of essay questions. This assessment will test a range of the learning outcomes and will provide a valuable learning experience through critical evaluation and demonstrating knowledge.</p>

	<p>The coursework comprises two elements: the first element is a report of laboratory examination of evidence, prepared for court.</p> <p>The second element comprises the oral presentation and questioning on scientific results</p> <p>Opportunities for formative assessment and feedback are built into the workshop and practical series, through discussion of current research, the evaluation of current professional practise, and review of past exam papers.</p> <p>All work is marked in line with the Department's Generic Assessment Criteria and conforms to university policies for the setting, collection, marking and return of student work. Assessments are described in the Module handbook that is supplied at the start of module</p> <p>Formative feedback is available to students throughout the module through group discussions, practical classes and in lectorials. Students are provided with formative feed-forward for their exam through a revision and exam preparation session prior to the exam and through the extensive support materials supplied through Blackboard.</p>
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Identify final assessment component and element		
<b>% weighting between components A and B</b> (Standard modules only)	<b>A:</b> <b>50%</b>	<b>B:</b> <b>50%</b>
<b>First Sit</b>		
<b>Component A</b> (controlled conditions) <b>Description of each element</b>	<b>Element weighting</b> (as % of component)	
1. Written Exam (3 hours)	100%	
<b>Component B</b> <b>Description of each element</b>	<b>Element weighting</b> (as % of component)	
1. Practical crime scene examination, including full documentation	100%	

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) Description of each element	Element weighting (as % of component)
1. Written exam (3 hours)	100%
Component B Description of each element	Element weighting (as % of component)
1. Report of laboratory examination of evidence, prepared for court	65%
2. Oral presentation and questioning on scientific results	35%
If a student is permitted an <b>EXCEPTIONAL RETAKE</b> of the module the assessment will be that indicated by the Module Description at the time that retake commences.	