

**MODULE SPECIFICATION**

| Part 1: Information | | | |
|---------------------------|--|--------------------|------------------|
| Module Title | Forensic Analysis | | |
| Module Code | USSKAU-30-2 | Level | 2 |
| For implementation from | September 2017 | | |
| UWE Credit Rating | 30 | ECTS Credit Rating | 15 |
| Faculty | Health and Applied Sciences | Field | Applied Sciences |
| Department | Department of Applied Sciences | | |
| Contributes towards | MSci Forensic Science MSci Forensic Science (with Foundation Year) BSc Forensic Science BSc Forensic Science (with Foundation Year) | | |
| Module type: | Standard | | |
| Pre-requisites | USSJRV-30-1 Scientific Investigation of Crime USSJRW-30-1 Scientific Skills | | |
| Excluded Combinations | None | | |
| Co- requisites | None | | |
| Module Entry requirements | N/A | | |

| Part 2: Description |
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| <p>The purpose of this module is to enable students to understand what forensic evidence is, in the widest sense, how it can be analysed and examined in the laboratory and how results from analyses can be interpreted and evaluated. An integration of laboratory analysis and data evaluation is essential and reflected in the module structure.</p> <p>Students will learn about the chemical and physical nature of materials of forensic interest e.g. fibres, glass, soil, paint, paper and ink, cartridges, accelerants and their environmental distribution. The potential and realised evidential value of a range of these materials will be explored through reference to and critical evaluation of real forensic casework.</p> <p>Students will use a broad range of forensic technology e.g. specialist microscopic techniques, spectroscopy and chromatography for the analysis/examination of e.g. fibres, glass, paper, ink, cartridges, bullets, paint and pollen. They will develop analytical strategies related to hypotheses, cost of analysis and the potential value of results. Forensic practical work will be undertaken in line with standard forensic laboratory protocols e.g. contamination avoidance and contemporaneous note taking.</p> <p>The interpretation of experimental results: hypothesis testing, normality, analysis of variance, management of uncertainty will be taught using appropriate software for data analysis and with regard to the limitations of forensic databases.</p> |

The role of various forensic specialists e.g. Forensic Accident Investigators, Ballistics Experts and Forensic Ecologists in the forensic examination of materials from serious scenes of crime will be discussed and students will undertake practical examinations, including scene examinations relating to these specialisms.

Part 3: Assessment

Coursework 1:

Students will submit a Laboratory Comparison Record- that is a full record of the complete analysis of an item of evidence, that they have examined in the laboratory using multiple specialist forensic instruments. Students must evidence all of their examinations with appropriate documentation and also that they have adhered to anti-contamination protocols. All standard conventions for forensic laboratory documentation must also be followed.

Students will be supported in this task by supportive taught sessions and should also utilise the feedback they received at level 1 on their laboratory record keeping. Students may have as many laboratory comparison records as they wish formatively reviewed in any practical classes preceding the coursework hand-in.

Coursework 2:

Students will work in their laboratory groups to produce a poster based on the analysis and interpretation of data produced in the complete examination of an evidential item in the laboratory. This task is designed to deepen understanding of results obtained in the laboratory and to emphasise that data evaluation is not a 'stand-alone' topic but an integral part of forensic reporting. The wider skills of research are developed and students are prepared for the specific skills required for the final year project. This specific assessment is designed to improve team working and communication skills and students will have the opportunity to amend marks based on agreed peer evaluations of contributions to the production of the poster. Students will be supported in this task by computer workshops which introduce the analytical techniques required for the processing of data and also by a 3 hour coursework support session the week before hand-in, in which students can receive formative feedback on their poster drafts.


Controlled Conditions: Viva Voce: 10 minutes.

A viva voce based on the poster submitted for coursework 2. Students will be assessed by two members of staff and questioned to establish their depth of understanding on the techniques they have employed in their laboratory examinations and subsequent data analysis. Understanding of forensic evidential value will also be explored. This task is designed to follow on from the oral presentation assessment that students undertake at level 1 in Scientific Investigation of Crime and to underpin the reporting of evidence in court assessment that students undertake in the Forensic Project module.

Controlled Conditions: Examination: 2 hours.

An examination based on the entirety of the taught, but with some flexibility regarding choice of questions answered. A mixture of essay and problem solving question formats will be used to assess depth of knowledge across the taught course. Feedback on this examination will support the examination for the Forensic Project at level 3, which is a 3 hour exam with the same format.

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|---|---|-----------|
| Identify final timetabled piece of assessment (component and element) | A2 | |
| % weighting between components A and B (Standard modules only) | A: | B: |
| | 50 | 50 |
| First Sit | | |
| Component A (controlled conditions) Description of each element | Element weighting (as % of component) | |
| 1.Viva voce examination – 10 minutes, in-class. | 20 | |
| 2.Examination – 2 hours, assessment period 2 (May). | 80 | |
| Component B Description of each element | Element weighting (as % of component) | |
| 1.Laboratory Comparison Record | 60 | |
| 2.Poster | 40 | |
| Resit (further attendance at taught classes is not required) | | |
| Component A (controlled conditions) Description of each element | Element weighting (as % of component) | |
| 1.Viva voce examination – 10 minutes, in-class. Module Leader will timetable close to examination. Poster from assessment period 2 may be used if component B was passed at that opportunity. | 20 | |
| 2.Examination- 2 hours, assessment period 3 (July). | 80 | |
| Component B Description of each element | Element weighting (as % of component) | |
| 1.Laboratory Comparison Record based on provided data. | 60 | |
| 2.Poster- based on provided data. | 40 | |
| Part 4: Teaching and Learning Methods | | |
| Learning Outcomes | <p>The theoretical underpinning of the module is delivered through online lectures (16 hours); face to face lectures (2 hours); interactive tutorials (18 hours); laboratory based practical classes (24 hours); Computer Workshops (6 hours) and practical crime scene investigation (6 hours).</p> <p>Laboratory practical sessions cover many aspects of the syllabus through practice based learning. Students will have the opportunity to examine a wide variety of materials of potential forensic interest in small groups, using specialist forensic instrumentation. Assessment of the laboratory sessions will encourage the students to make links to the lecture course and to critically evaluate their experimental results. As students are in the role of a laboratory forensic scientist in these practical classes students will be required to complete laboratory comparison records and contemporaneous notebooks in all sessions.</p> <p>Computer workshops integrate practical software skills with an understanding of the management of experimental uncertainty and will enable students to fully interpret data sets obtained in the laboratory practical classes.</p> <p>Interactive tutorials explore concepts from the online lectures and make use of the Digital Technologies Suite and interactive activities to allow students to examining 'evidence'</p> | |

| | <p>discussed in the lectures. These sessions also provide opportunity to explore and support assessments and to answer any queries students have relating to the lecture content.</p> <p>Students also learn about and practically investigate vehicle and outdoor crime scenes using the specialist crime scene house and garage facilities</p> <p>Independent Learning</p> <p>Students are expected to further their understanding through engagement with printed resources and web-based material including worked answers to statistical problems, tutorials using Excel and MiniTab and innovative video tutorials. The students will also be able to monitor their own skill development through self-assessment tests and other learning material available on Blackboard.</p> <p>It is expected that completion of laboratory comparison records, reading and engagement with printed and online resources will take students to the notional 300 hours of study associated with this module.</p> <p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> • understand the chemical and physical nature of materials of forensic interest, their general distribution and potential evidential value (Elements A1 and 2; Elements B1 and 2) • design and undertake comprehensive laboratory examination/analysis of a wide variety of materials of forensic interest, with due consideration given to anti-contamination procedures (Element B1) • understand the relationship between experiment design, forensic context and the methods available for analysing results (Elements B2, A1 and A2) • evaluate experimental data and associated uncertainties using computational techniques and appropriate software packages (Element B2). • understand the special considerations, range and potential usefulness of evidence available from outdoor and vehicle crime scenes (Element A2) • explain the results of forensic analysis and be able to justify the interpretation of these results in a clear and comprehensive manner (Element A1) | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------------------------|-----------------------|-----------------|--|--|--|--|--|--|--|--|--|--|--|----|-----------------------|---|-------------------------|-----------------------|-----------------|-----|----|-----|---|-----|
| Key Information Sets Information (KIS) | <table border="1"> <thead> <tr> <th colspan="5">Key Information Set - Module data</th> </tr> </thead> <tbody> <tr> <td colspan="5"><i>Number of credits for this module</i></td> </tr> <tr> <td colspan="4"></td> <td style="text-align: right;">30</td> </tr> <tr> <th>Hours to be allocated</th> <th>Scheduled learning and teaching study hours</th> <th>Independent study hours</th> <th>Placement study hours</th> <th>Allocated Hours</th> </tr> <tr> <td style="text-align: center;">300</td> <td style="text-align: center;">72</td> <td style="text-align: center;">228</td> <td style="text-align: center;">0</td> <td style="text-align: center;">300</td> </tr> </tbody> </table> <p style="text-align: right;"></p> | Key Information Set - Module data | | | | | <i>Number of credits for this module</i> | | | | | | | | | 30 | Hours to be allocated | Scheduled learning and teaching study hours | Independent study hours | Placement study hours | Allocated Hours | 300 | 72 | 228 | 0 | 300 |
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| 300 | 72 | 228 | 0 | 300 | | | | | | | | | | | | | | | | | | | | | | |
| Contact Hours | <p>The table below indicates as a percentage the total assessment of the module which constitutes a;</p> <p>Written Exam: Unseen or open book written exam Coursework: Written assignment or essay, report, dissertation, portfolio, project or in class test Practical Exam: Oral Assessment and/or presentation, practical skills assessment, practical exam (i.e. an exam determining mastery of a technique)</p> | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Total Assessment | Total assessment of the module: | | | |
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| | Written exam assessment percentage | | | 40% |
| | Coursework assessment percentage | | | 50% |
| | Practical exam assessment percentage | | | 10% |
| | | | 100% | |
| Reading List | https://uwe.rl.talis.com/lists/F9384FAB-9C63-B5BA-4F65-50B7F4298727.html | | | |

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|----------------------------|-----------------|---------|---|---------------------------|
| First CAP Approval Date | 28/03/2014 | | | |
| Revision CAP Approval Date | 1 February 2017 | Version | 2 | RIA 12193 |