



## MODULE SPECIFICATION

**Code:** USSJRV-30-1                      **Title:** Scientific Investigation of Crime                      **Version:** 1

**Level:** 1                      **UWE credit rating:** 30                      **ECTS credit rating:** 15

**Module type:** Standard

**Owning Faculty:** Health and Life Sciences

**Field:** Applied Sciences

**Faculty Committee approval:** Quality and Standards Committee

**Date:** April 2011

**Approved for Delivery by:** N/A

**Valid from:** September 2011

**Discontinued from:**

**Pre-requisites:**

None

**Co-requisites:**

None

**Entry Requirements:**

N/A

**Excluded Combinations:**

None

**Learning Outcomes:**

The student will be able to:

- recognise and describe the various types of physical evidence, and understand their potential importance in a forensic investigation;
- distinguish clearly between volume crime and serious crime, describe the personnel involved and the procedures used for the processing of both classes of scene;
- examine and document simple crime scenes;
- select and apply appropriate techniques for the recovery and preservation of evidence and the maintenance of the chain of custody;
- describe techniques used in the laboratory examination of physical evidence;
- interpret case-related data in the form of a scientific report;
- undertake and document simple forensic tests and analyses;
- understand the relevance of biological and chemical principles to forensic investigations;
- communicate scientific material clearly to peers.

**Syllabus Outline:**

- Introduction of Locard's principle and history of Forensic Science.
- Types of evidence and evidential value.
- Volume crime and serious crime scene processing.
- Crime scene photography and sketching
- Packaging and preservation of evidence.
- Marks and impressions.
- The nature of forensic evidence, sampling issues and analytical approaches.
- Presumptive and screening tests including immunoassays and thin layer chromatography.
- Components of biological fluids including the biochemistry of presumptive testing.
- Bloodstain pattern analysis.
- Location and recovery of biological material for laboratory testing.
- The persistence of DNA, either as stain or in terms of body, tissue etc.
- Introduction to the processes involved in DNA analysis and the NDNAD.

- Light and comparison microscopy as employed in examination of items and evidence.
- Document examination using physical and chemical techniques including Electrostatic Detection Apparatus and the Video Spectral Comparator.
- The chemical processes involved in fires and explosions, specific issues concerned with these potential crime scenes and the chemical analysis of evidence.
- Legislation pertaining to the misuse of drugs, and analytical methods for identifying suspect materials.
- Legal and analytical aspects of alcohol analysis in body fluids.
- Forensic examination of materials such as paint, plastics, fibres and hair; including issues of transfer, persistence and significance of findings.

### Teaching and Learning Methods:

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 workshops and data interpretation. Practical work will take place in laboratories and the crime scene house. 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 learning materials.

### 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 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.

Any **essential reading** 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.

If **further reading** 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.

### Indicative Reading List:

- Jackson, R.W. & Jackson, J.M., *Forensic Science*, Prentice Hall, 2008, ISBN 978-0131998803 (British-based)
- James, S.H. & Nordby, J.J., *Forensic Science*, CRC Press, 2009, ISBN 978-1-4200-6493-3 (US-based)
- Fisher, B.A.J, Svensson, A., Wendel, O. (2000) 'Techniques of Crime Scene Investigation', CRC Press, ISBN 0849381193, (U.S. based, available online via forensicnetbase).
- Horswell, J. (ed.) (2004) 'The Practice of Crime Scene Investigation', CRC Press, ISBN 0-748-40609-3, (U.S. based, available online via Forensic Netbase).
- Saferstein, R. (2003), 'Criminalistics – An Introduction to Forensic Science', Prentice Hall, ISBN 0131228897, U.S. based
- Siegel, J.A. (Ed in chief) (2000) *Encyclopedia of Forensic Sciences*, Academic Press– available online via Science Direct.
- Sutton, R.S. & Trueman, K., *Crime Scene Management*, Wiley & Sons, 2009, ISBN 978-0-470-01679-4 9PBK0
- White, P.C. (ed.) (2010) 'Crime scene to court : the essentials of forensic science', The Royal Society of Chemistry, ISBN 0854046569, British based - Third edition
- Croft A and Davison R, *Foundation Maths*, 4th Ed, Prentice Hall, 2008 ISBN 978-0273721901

Specialist textbooks on individual evidence types (such as those published by Taylor and Francis) are also available through this resource and as e-books from the library e.g.

Caddy, B. 2001. *Forensic Examination of Glass and Paint Analysis and Interpretation*. Taylor and Francis.

**Assessment:**

**Weighting between components A and B (standard modules only) A: 40% B: 60%**

**FIRST ATTEMPT**

**First Assessment Opportunity**

<b>Component A</b> ( <i>controlled</i> )		<b>Element Wt (Ratio)</b>
Description of each element		( <i>within Component</i> )
EX1	Examination (1.5 hour - assessment period 1)	1
EX2	Examination (1.5 hour - assessment period 2)	1
		<b>Final Assessment</b>

<b>Component B</b>		<b>Element Wt (Ratio)</b>
Description of each element		( <i>within Component</i> )
CW1	Assessed crime scene examination (includes proficiency test from practicals in semester 1)	1
CW2	Oral Presentation	1
CW3	Practical portfolio	1

**Second Assessment Opportunity (Resit) further attendance at taught classes is not required**

<b>Component A</b> ( <i>controlled</i> )		<b>Element Wt (Ratio)</b>
Description of each element		( <i>within Component</i> )
EX3	Examination (3 hours - assessment period 3)	1
		<b>Final Assessment</b>

<b>Component B</b>		<b>Element Wt (Ratio)</b>
Description of each element		( <i>within Component</i> )
CW4	Assessed crime scene examination ((including examination of fingerprint development, packaging and footwear mark lifting)	1
CW5	Data analysis and practical write up (data supplied)	1
CW6	Report on the techniques used to examine a specified evidence type	1

**EXCEPTIONAL SECOND ATTEMPT Attendance at taught classes is not required.**

**Specification confirmed by** .....**Date** .....  
(Associate Dean/Programme Director)