

Analysis of Controlled Substances

Module Code:	ARC6027-B
Academic Year:	2018-19
Credit Rating:	20
School:	School of Archaeological and Forensic Sciences
Subject Area:	Forensic Science
FHEQ Level:	FHEQ Level 6
Module Leader:	Dr Benjamin Stern

Additional Tutors:
Dr Philip Drake

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	12
Laboratory	36
Directed Study	152

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Academic Year (Sept - May)

Module Aims

To introduce classification systems for controlled and dangerous substances (drugs of abuse and explosives) and the process for development and review of law in the UK.

To develop skills in the screening and chemical analysis of controlled substances. To provide opportunities for development of group working and presentation skills through a challenging forensic case requiring analysis and interpretation.

Outline Syllabus

Development and review of UK Law. Acts and Statutory Instruments of Parliament for controlled substances, dangerous goods and explosives.

Drugs of abuse: classification of Classes and Schedules. Anabolic steroids, depressants, hypnotics, hallucinogens, narcotic analgesics, non-narcotic analgesics, psychedelics, relaxants, sedatives, stimulants, tranquillisers. Chemical composition of drugs of abuse.

Explosives. Classification systems. Primary and secondary explosives, detonators. Types and effects of explosions. Composition of chemical explosives, propellants and discharge residues.

Presumptive colorimetric tests for drugs of abuse, explosives and firearms discharge residues.

Immunoassays for drugs of abuse: EMIT, ELISA, RIA, CEDIA, FPIA

Detection of drugs in body fluids, hair, sweaty secretions, derivatisation: solvents: chromatographic analysis.

Application of black-box analytical techniques: Chromatographic - GC. HPLC: Spectroscopic - MS, MS-MS. FTIR. Raman. NAA. SEM_EDX.

Forensic Case Study.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 Define classification systems for controlled and dangerous substances and describe the process for development and review of the law in the UK.
- 2 Choose and explain the chemical or biochemical basis for presumptive and spot tests, and propose protocols for avoidance of contamination in forensic recovery and analysis of trace deposits in crime scene and laboratory environments.
- 3 Recover trace substances from various substrates whilst avoiding contamination, select and carry out appropriate presumptive and spectroscopic/chromatographic tests, and interpret the analytical results both scientifically and forensically in the context of case circumstances.
- 4 Employ personal, time management, study and team-working skills and analytical and problem-solving skills, and communicate through a casework report and orally.

Learning, Teaching and Assessment Strategy

Teaching will take place through lectures, in staff-led seminars with reading material provided in advance of sessions and in supervised, practical casework with students working collectively.

The module will be assessed by a two hour examination and a piece of coursework around a forensic case.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - closed book	Two hour closed book examination	2 hours	50%	Yes
Summative	Coursework	Coursework: Case report	0-2000 words	50%	No

Legacy Code (if applicable)

Reading List

To view Reading List, please go to [rebus:list](#).