Module specification

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Module Code	SCI642
Module Title	Drugs & Toxicology
Level	6
Credit value	20
Faculty	FAST
HECoS Code	100423
Cost Code	GAFS

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BSc (Hons) Forensic Science	optional
BSc (Hons) Forensic Science with Placement Year	optional
BSc (Hons) Biochemistry	core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	24 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	**24 hrs**
Placement / work based learning	0 hrs
Guided independent study	176 hrs
Module duration (total hours)	200 hrs

Module aims

This module is intended to introduce the chemistry of drugs and poisons and their major routes of administration and uptake by the human body. Students will also be taught the main classification systems as well as the key methods utilised in drug analysis in the fields of forensic and biosciences. The role of pharmacokinetics will be considered, and students will explore drug related case studies to broaden their scientific and technical knowledge.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Describe the chemistry of drugs and poisons and methods of classification.
2	Demonstrate the key routes of drug administration and uptake by the human body.
3	Apply key knowledge of pharmacokinetic principles to solve numerical problems.
4	Critically appraise sampling and analytical techniques applicable in the field of forensic and biosciences.
5	Critically evaluate evidence and demonstrate the role played by toxicologists in forensic investigations or the bioscience sector.

Assessment

Indicative Assessment Tasks:
This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Assessment 1: In-class test (2 hours)
This will be an open book assessment where students will be asked to solve four problem-based questions.

Assessment 2: Presentation (20 min)
Presentation based on a case study where students will be asked to explore the role of toxicologists and appraise the key sampling and testing techniques utilised in the chosen case study.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1-3	In-class test	50
2	4-5	Presentation	50

Derogations

None

Learning and Teaching Strategies

Methods of delivery:
- Lectures
- Directed study via Moodle VLE
- Independent student directed study

The module will be delivered using a variety of methods including lectures and group-based activities. Problem solving exercises and case studies will help reinforce fundamental principles. Students will research case studies and present information to peers. Guidance will

be provided for directed learning. Students will be able to further develop their knowledge and understanding by reading additional course materials on the Moodle VLE. Independent student-directed learning will enable them to delve more deeply into the subject material, enhancing their learning, while developing their academic transferrable and IT skills. Moodle will act as a repository for session materials.

Indicative Syllabus Outline

- Drug definition and classification
    - Legal classification of drugs of abuse within the UK system, including examples.
    - Drugs as evidence, physical evidence, biological evidence and importance of drug profiling.
- Drug administration and route of uptake
- Pharmacokinetics:
    - Absorption, Distribution, Biotransformation, Elimination
- Drug analysis:
    - Types of samples that are analysed (bulk and trace).
    - Presumptive testing
    - Confirmatory testing
- Current research and suitable case studies for the specific programme of study

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads
Bell, S. (2022), *Forensic Chemistry*, 3rd Edition, CRC Press, Oxon.

Rosenbaum, S. (2017), *Basic Pharmacokinetics and Pharmacodynamics: An Integrated Textbook and Computer Simulations,* 2nd Edition, United States: John Wiley and Sons Ltd.

Other indicative reading
Suitable research papers, case studies and court papers.

Gaskell, E. & Rostron, C. (2013), *Therapeutics and Human Physiology: How drugs work (Integrated Foundations of Pharmacy),* 1st Edition, Oxford: OU.

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes
Engaged
Enterprising
Creative
Ethical
Key Attitudes
Commitment
Curiosity

Resilience
Confidence
Practical Skillsets
Digital Fluency
Organisation
Critical Thinking
Emotional Intelligence
Communication