

Module specification

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|--------------|---------------------------|
| Module Code | SCI433 |
| Module Title | Introduction to Chemistry |
| Level | 4 |
| Credit value | 20 |
| Faculty | FAST |
| HECoS Code | 100417 |
| 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 | Core |
| BSc (Hons) Forensic Science with Placement Year | Core |
| BSc (Hons) Biochemistry | Core |

Pre-requisites

None

Breakdown of module hours

| | |
|--|----------------|
| Learning and teaching hours | 36 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 | 36 hrs |
| Placement / work based learning | 0 hrs |
| Guided independent study | 164 hrs |
| Module duration (total hours) | 200 hrs |

| For office use only | |
|------------------------------|--|
| Initial approval date | 05/08/2020 |
| With effect from date | September 2023 |
| Date and details of revision | 10/05/2023 Revalidation of BSc (Forensic Science programme |
| Version number | 3 |

Module aims

The aim of this module is to provide students with sufficient background knowledge and insight in chemistry, which is required to cope with the subsequent modules in the programme they study. The module will also illustrate the relevance of chemistry to the fields of forensic science or biochemical science.

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

| | |
|---|--|
| 1 | Demonstrate a familiarisation of the essential concepts of chemistry. |
| 2 | Gain knowledge in other aspects in chemistry such as history, organisation and safety issues <i>etc.</i> |
| 3 | Manipulate the fundamental calculations involved in chemistry. |
| 4 | Appreciate the impact of chemistry on practice in forensic investigation arena or biochemical industry. |

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: Coursework

It contains approximately 15 short-answered and problem-solving questions and occurs near the end of semester.

Assessment 2: Written Assignment (~1200 words).

Students will write a research essay to cover one chosen topic and demonstrate the impact of chemistry on forensic investigation or biochemical practice using case studies.

| Assessment number | Learning Outcomes to be met | Type of assessment | Weighting (%) |
|-------------------|-----------------------------|--------------------|---------------|
| 1 | 1-3 | Coursework | 50 |
| 2 | 4 | Written Assignment | 50 |

Derogations

None

Learning and Teaching Strategies

The module will be delivered in line with the University's Active Learning Framework and will involve:

Lectures: To provide students with a comprehensive overview of the key concepts and principles.

Discussions and Seminars: To allow students to engage with the materials and explore different perspectives on the applications of chemistry in the fields related to their programme of study while also providing an opportunity for students to ask questions and clarify concepts.

Problem solving workshops: To test students' knowledge and understanding of the concepts covered and train their calculation skills in chemistry.

Online resources and videos: To supplement classroom learning by providing students with additional information and visual aids to further their understanding of the materials.

Self-directed study: To empower students to take responsibility for their own learning and to explore topics of interest in more depth.

Indicative Syllabus Outline

- Atoms and chemical elements
- Molecules and ions
- Solutions, acids and bases
- Reduction-oxidation chemistry
- Thermodynamics and chemical kinetics
- Organic compounds
- Polymers
- Nuclear chemistry
- Quantitative chemistry
- Applications of chemistry in forensic science or biochemical science

Indicative Bibliography:

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

Essential Reads

Ebbing, D.D. & Gammon, S.D. (2016), *General Chemistry*, 11th Edition, United States: Cengage Learning.

Other indicative reading

Bell, S. (2022), *Forensic Chemistry*, 3rd Edition. Abingdon: CRC Press.

Crowe, J. & Bradshaw, T. (2021), *Chemistry for the Biosciences: The Essential Concepts*, United Kingdom: Oxford University Press.

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

Key Attitudes

Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets

Digital Fluency
Organisation
Critical Thinking
Communication