

Module specification

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Refer to the module guidance notes for completion of each section of the specification.

Module code	SCI443
Module title	Introduction to Chemistry
Level	4
Credit value	20
Faculty	FAST
Module Leader	Dr Jixin Yang
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) 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	164 hrs
Guided independent study	0 hrs
Module duration (total hours)	200 hrs

For office use only	
Initial approval date	05/08/20

For office use only	
With effect from date	01/09/2020
Date and details of revision	14/10/20 Addition of BSc Biochemistry programme
Version number	2

Module aims

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

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

1	Demonstrate an understanding and knowledge of the basic concepts of chemistry.
2	Demonstrate knowledge in other aspects in chemistry such as history, organisation and safety issues etc.
3	Demonstrate problem-solving skills including calculations involved in chemistry.
4	Demonstrate a basic understanding of the impact of chemistry on the world in which we live.

Assessment

Indicative Assessment Tasks:

Assessment 1: Online test containing 25 multiple choice questions only. It occurs near the end of semester.

Assessment 2: Coursework (~1000 words). It contains approximately 15 problem-solving questions and will be issued near the end of semester.

Assessment 3: Research essay (~1000 words). The students will write a short essay in the middle of semester to cover one chosen topic such as history of chemistry, application of chemical knowledge in real life or frontline research in chemistry following literature research.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1 & 2	Multiple Choice Questions	25%
2	3	Coursework	50%
3	4	Essay	25%

Derogations

N/A

Learning and Teaching Strategies

Methods of delivery:

- Lectures
- Problem solving workshops
- Directed study *via* Moodle VLE
- Student directed study

The basic factual material will be delivered by means of lectures. Lectures will be supported by workshops in which the students will be able to test their knowledge and understanding of the concepts covered. Students will further be able to develop their knowledge and understanding by reading additional course material and attempting problem sets and quizzes on Moodle VLE via the virtual learning software. Independent student-directed learning will enable students to delve more deeply into the subject material, enhancing their learning, while developing their IT skills.

Indicative Syllabus Outline

- Atoms and chemical elements
- Molecules and ions
- Solutions, acid and base
- Reduction-oxidation chemistry
- Thermodynamics and chemical kinetics
- Organic compounds
- Polymers and biochemically important materials
- Nuclear chemistry
- Quantitative chemistry

Indicative Bibliography:

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

Essential Reads

Ebbing, D.D. and Gammon, S.D. (2015) *General Chemistry*. 11th ed. Australia: Brooks Cole/Cengage Learning.

Other indicative reading

Whitten, K.W., Davis, R.E., Peck, M.L. and Stanley, G.G. (2014), *Chemistry*. 10th ed. Pacific Grove, Calif: Brooks/Cole.

McMurry, J. and Fay, R. (2016), *Chemistry*. 7th ed. Harlow: Pearson Education.

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. [Click here to read more about the Glyndwr Graduate attributes](#)

Core Attributes

Engaged
Creative

Key Attitudes

Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets

Digital Fluency
Organisation
Leadership and Team working
Critical Thinking
Emotional Intelligence
Communication