Swansea University
Prifysgol Abertawe

FACULTY OF SCIENCE AND ENGINEERING

UNDERGRADUATE STUDENT HANDBOOK

YEAR 2 (FHEQ LEVEL 5)

CHEMISTRY

DEGREE PROGRAMMES

SUBJECT SPECIFIC
PART TWO OF TWO
MODULE AND COURSE STRUCTURE
2023-24

DISCLAIMER

The Faculty of Science and Engineering has made all reasonable efforts to ensure that the information contained within this publication is accurate and up-to-date when published but can accept no responsibility for any errors or omissions.

The Faculty of Science and Engineering reserves the right to revise, alter or discontinue degree programmes or modules and to amend regulations and procedures at any time, but every effort will be made to notify interested parties.

It should be noted that not every module listed in this handbook may be available every year, and changes may be made to the details of the modules. You are advised to contact the Faculty of Science and Engineering directly if you require further information.

The 23-24 academic year begins on 25 September 2023

Full term dates can be found here

DATES OF 23-24 TERMS

25 September 2023 – 15 December 2023

8 January 2024 – 22 March 2024

15 April 2024 – 07 June 2024

SEMESTER 1

25 September 2023 – 29 January 2024

SEMESTER 2

29 January 2024 – 07 June 2024

SUMMER

10 June 2024 – 20 September 2024

IMPORTANT

Swansea University and the Faculty of Science of Engineering takes any form of **academic misconduct** very seriously. In order to maintain academic integrity and ensure that the quality of an Award from Swansea University is not diminished, it is important to ensure that all students are judged on their ability. No student should have an unfair advantage over another as a result of academic misconduct - whether this is in the form of **Plagiarism**, **Collusion** or **Commissioning**.

It is important that you are aware of the **guidelines** governing Academic Misconduct within the University/Faculty of Science and Engineering and the possible implications. The Faculty of Science and Engineering will not take intent into consideration and in relation to an allegation of academic misconduct - there can be no defence that the offence was committed unintentionally or accidentally.

Please ensure that you read the University webpages covering the topic – procedural guidance here and further information here. You should also read the Faculty Part One handbook fully, in particular the pages that concern Academic Misconduct/Academic Integrity.

Welcome to the Faculty of Science and Engineering!

Whether you are a new or a returning student, we could not be happier to be on this journey with you.

At Swansea University and in the Faculty of Science and Engineering, we believe in working in partnership with students. We work hard to break down barriers and value the contribution of everyone.

Our goal is an inclusive community where everyone is respected, and everyone's contributions are valued. Always feel free to talk to academic, technical and administrative staff, administrators - I'm sure you will find many friendly helping hands ready to assist you. And make the most of living and working alongside your fellow students.

During your time with us, please learn, create, collaborate, and most of all – enjoy yourself!

Professor David Smith
Pro-Vice-Chancellor and Executive Dean
Faculty of Science and Engineering

Faculty of Science and Engineering	
Pro-Vice-Chancellor and Executive Dean	Professor David Smith
Director of Faculty Operations	Mrs Ruth Bunting
Associate Dean – Student Learning and Experience (SLE)	Professor Laura Roberts
School of Engineering and Applied Sciences	
Head of School	Professor Serena Margadonna
School Education Lead	Professor Simon Bott
Head of Chemistry	Professor Owen Guy
Chemistry Programme Director	Dr Joel Loveridge
Year Coordinators	Year 0 – Professor Simon Bott Year 1 – Dr Joel Loveridge Year 2 – Dr Francisco Martin-Martinez Year 3 – Dr Mariolino Carta Year 4 – Dr Sumati Bhatia

STUDENT SUPPORT

The Faculty of Science and Engineering has two **Reception** areas - Engineering Central (Bay Campus) and Wallace 223c (Singleton Park Campus).

Standard Reception opening hours are Monday-Friday 8.30am-4pm.

The **Student Support Team** provides dedicated and professional support to all students in the Faculty of Science and Engineering. Should you require assistance, have any questions, be unsure what to do or are experiencing difficulties with your studies or in your personal life, our team can offer direct help and advice, plus signpost you to further sources of support within the University. There are lots of ways to get information and contact the team:

Email: studentsupport-scienceengineering@swansea.ac.uk (Monday–Friday, 9am–5pm)

Call: +44 (0) 1792 295514 (Monday-Friday, 10am–12pm, 2–4pm).

Zoom: By appointment. Students can email, and if appropriate we will share a link to our Zoom calendar for students to select a date/time to meet.

The current student **webpages** also contain useful information and links to other resources:

https://myuni.swansea.ac.uk/fse/

READING LISTS

Reading lists for each module are available on the course Canvas page and are also accessible via http://ifindreading.swan.ac.uk/. We've removed reading lists from the 23-24 handbooks to ensure that you have access to the most up-to-date versions.
We do not expect you to purchase textbooks, unless it is a specified key text for the course.

THE DIFFERENCE BETWEEN COMPULSORY AND CORE MODULES

Compulsory modules must be **pursued** by a student.

Core modules must not only be **pursued**, but also **passed** before a student can proceed to the next level of study or qualify for an award. Failures in core modules must be redeemed.

Further information can be found under "Modular Terminology" on the following link - https://myuni.swansea.ac.uk/academic-life/academic-regulations/taught-guidance/essential-info-taught-students/your-programme-explained/

Year 2 (FHEQ Level 5) 2023/24
Chemistry

BSc Chemistry[F100,F10F]
BSc Chemistry with a Year Abroad[F106]
BSc Chemistry with a Year in Industry[F101]
MCHEM Chemistry[F123]

Coordinator: Dr FJ Martin-Martinez

Semester 1 Modules	Semester 2 Modules
CH-237 **Further Physical Chemistry** **20 Credits** **Dr JW Ryan/Prof GN Alexandrowicz/Dr E Evans**	**CH-239** **Biological and Medicinal Chemistry** **20 Credits** **Dr EJ Loveridge/Dr MR Gill**
CH-238 **Further Organic Chemistry** **20 Credits** **Dr M Carta/Dr EJ Loveridge**	**CH-240** **Computational and Theoretical Chemistry** **20 Credits** **Dr FJ Martin-Martinez**
CH-250 **Professional Development and Career Planning** **0 Credits** **Miss VV Wislocka**	
CH-232 **Further Inorganic Chemistry** **20 Credits** **Dr MR Gill/Prof J Mareque-Rivas**	
CH-241 **Analytical Chemistry** **20 Credits** **Dr D Roy/Prof GN Alexandrowicz/Prof SG Bott/Dr EJ Loveridge**	
Total 120 Credits	

CH-232 Further Inorganic Chemistry

Credits: 20 Session: 2023/24 September-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr MR Gill, Prof J Mareque-Rivas

Format:
30 hours practical,
33 hours online classes lectures,
11 hours F2F workshops,
86 hours independent study,
40 hours preparation for assessment

Delivery Method: Flipped content, online and F2F active classrooms and workshops, peer-led learning, practicals

Module Aims: This module will continue discussion of concepts traditionally considered to be inorganic chemistry studying the structure and bonding of main group and transition metal compounds and major classes of reactions. Symmetry and group theory will also be introduced in this module.

Note: it is expected that material, techniques and skills covered in the course of this module will require understanding of any prior module.

The module will have a variety of formative assessment opportunities and summative assessments that include writing of technical reports, a presentation, homework, workshops, and an exam.

Module Content: Group Theory

Symmetry operators/elements
Point groups
Character Tables
Vibrational spectra

Molecular Orbital Theory

Coordination Chemistry

Ligand Field Theory
More complex electronic spectra

Organometallic Chemistry

Metal carbonyls
Organic ligands
Metal-carbon bonding
Organometallic reactions
Catalysis

Reactions

Addition and elimination
Substitution
Redox

Intended Learning Outcomes: By the end of this modules, students will be able to

Assign point groups to molecules and understand the rudiments of character tables
Apply Molecular Orbital Theory to describe bonding in simple molecules
Apply the concepts of Ligand Field Theory to coordination compounds
Predict the structure and bonding in organometallic compounds
Distinguish between multiple possible reaction mechanisms
Analyse spectral data to determine structure and bonding
Appreciate and describe the role of metal compounds in multiple catalytic processes

Assessment:	Examination (55%) Coursework 1 (10%) Presentation (15%) Laboratory work (20%)

Assessment Description: The assessment for this module consists of assessment by examination and a coursework portfolio encompassing laboratory reports, continuous online assessment, group work and presentations.

The Laboratory component must be passed (40%) in order to pass the module

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Students will receive regular targeted feedback on their work through verbal, written and online media. Students will also be trained in self-reflection and peer support to enhance the student-generated feedback. Students will also be supported in making best use of feedback available.

Failure Redemption: A suitable supplementary attempt will be permitted on relevant assessment in line with University policy.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Available to visiting exchange students provided they are present in the January assessment period.

CH-237 Further Physical Chemistry

Credits: 20 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr JW Ryan, Prof GN Alexandrowicz, Dr E Evans

Format: 30 hours practical,
33 hours classes,
11 hours workshops,
76 hours independent study,
50 hours preparation for assessment

Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions.

Delivery Method: Flipped classes, seminars, workshops, peer support, laboratory experiments and online content.

Module Aims: This module will advance students' studies in Physical Chemistry. The module provides a more in-depth look at thermodynamics from both the classical and molecular viewpoints, the thermodynamics of mixing and chemical equilibrium. Electrochemistry is covered from a fundamental and applied view and serves is used to further discuss thermodynamics, non-ideal behaviour and equilibrium. A deeper look at kinetics is then included that builds on prior knowledge and highlights the importance of kinetics in chemical reactions and processes. The module will build on existing understanding, further developing mathematical skills to explore the material covered in this module. In the laboratory students will undertake more advanced investigative experiments to explore the physical concepts.

Material, techniques and skills covered in the course of this module will build on and therefore require understanding of all prior modules.

The module will be assessed by coursework (laboratory experiments, laboratory report and assignments) and by examination.

Module Content: Thermodynamics:

• In-depth look at the Laws of Thermodynamics
• Work, heat, first law
• Adiabatic changes
• Fundamental equation of state
• Entropy: classical and statistical approaches
• Applying the Gibbs Free Energy to ideal and non-ideal chemical systems
• Thermodynamics of reaction mixtures

Electrochemistry

• Solvent effects and solution activity
• Ionic strength
• Debye-Hückel theory
• Foundations of electrochemistry; terminology
• Cell potentials and electrode processes
• Galvanic and electrolytic cells
• Application of thermodynamics and the Nernst equation

Kinetics

• Complex reactions and mechanisms
• Chain reactions
• Temperature dependence of reaction rates
• Kinetics and thermodynamic control of reactions

Surface Chemistry

• Thermodynamics of surface processes
• Adsorption and desorption; application of kinetics

Intended Learning Outcomes: By the end of this modules, students will be able to

• Summarise the core concepts of thermodynamics
• Integrate understanding of chemical thermodynamics with existing chemical knowledge
• Apply thermodynamic principles to mixtures
• Describe core concepts in electrochemistry
• Identify different types of electrochemical cells and describe the components of each
• Run simple electrochemical experiments and interpret the results
• Demonstrate an understanding of ionic processes in electrochemistry and their effects
• Be able to predict the composition of a reaction mixture as it approaches equilibrium
• Make and implement assumptions about relative rates of steps in a reaction mechanism
• Integrate understanding of knowledge to solve more synoptic chemistry problems at a wider level.
• Design experimental protocols using understanding of models.
• Summarise the core concepts of thermodynamics and kinetics applied to surfaces

Assessment:
Examination (55%)
Coursework 1 (10%)
Coursework 2 (15%)
Laboratory work (20%)

Assessment Description: Examination
Laboratory work
Laboratory report
Workshop assessments

The Laboratory component must be passed (40%) in order to pass the module

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Students will receive regular targeted feedback on their work through verbal, written and online media. Students will also be trained in self-reflection and peer support to enhance the student-generated feedback. Students will also be supported in making best use of feedback available.
Failure Redemption: A suitable supplementary attempt will be permitted on relevant assessment in line with University policy.
Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus. Available to visiting exchange students provided they are present in the January assessment period.

CH-238 Further Organic Chemistry

Credits: 20 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr M Carta, Dr EJ Loveridge

Format: 30 hours practical,
33 hours online classes lectures,
11 hours F2F workshops,
86 hours independent study,
40 hours preparation for assessment

Delivery Method: Flipped content, online and F2F active classrooms and workshops, peer-led learning, practicals

Module Aims: This module will build on material taught across the entire first year, and develops knowledge and understanding in the area of organic chemistry. Students will gain deeper knowledge of stereochemistry and conformation in organic chemistry, and of reactivity and reaction mechanisms in areas such as carbonyl, carbanion, carbocation, radical, aromatic and heterocyclic chemistry. They will also be introduced to key concepts and strategies in synthetic organic chemistry and physical organic chemistry. By the end of the module students will be equipped with the core tools to design synthetic routes, and to predict and/or determine reaction mechanisms.

The module will have a variety of formative assessment opportunities and summative assessments that include writing of technical reports, a presentation, homework, workshops, and an exam.

Module Content: Chemistry of mono- and di-carbonyl compounds

Carbanion, carbocation and radical chemistry

Aromatic chemistry

Heterocyclic chemistry

Strategies in synthetic organic chemistry

Stereochemistry and conformation

Physical organic chemistry

Intended Learning Outcomes: By the end of this modules, students will be able to

Apply knowledge of molecular structure, bonding and reactivity to a wide range of organic molecules

Describe the characteristic reactivity of different classes of organic molecule

Predict likely mechanisms of unfamiliar organic reactions

Design strategies for synthesising organic molecules

Describe methods for determining the mechanisms of organic reactions

Analyse data to determine or distinguish reaction mechanisms

Perform a range of standard laboratory procedures

Assessment: Examination (55%)
Coursework 1 (10%)
Laboratory work (20%)
Presentation (15%)

Assessment Description: The assessment for this module consists of assessment by examination and a coursework portfolio encompassing laboratory reports, continuous online assessment, group work and presentations. The Laboratory component must be passed (40%) in order to pass the module
Moderation approach to main assessment: Moderation by sampling of the cohort
Assessment Feedback: Students will receive regular targeted feedback on their work through verbal, written and online media. Students will also be trained in self-reflection and peer support to enhance the student-generated feedback. Students will also be supported in making best use of feedback available.
Failure Redemption: A suitable supplementary attempt will be permitted on relevant assessment in line with University policy.
Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus. Available to visiting exchange students provided they are present in the January assessment period.

CH-239 Biological and Medicinal Chemistry

Credits: 20 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr EJ Loveridge, Dr MR Gill

Format: 30 hours practical,
33 hours classes,
11 hours workshops,
76 hours independent study,
50 hours preparation for assessment

Delivery Method: Flipped classes, seminars, workshops, peer support, laboratory experiments and online content.

Module Aims: This module will introduce students to the sub-disciplines of biological and medicinal chemistry. It will build on core material taught in the first year and semester 1 of the second year. An introduction to primary and specialised metabolism will be given, demonstrating that biological reactions obey the same laws as synthetic organic chemistry. Enzymes will be introduced as the key catalysts within biological chemistry. Students will also be given an overview of key concepts and strategies in medicinal chemistry, including pharmacological considerations. By the end of the module students will be equipped with the core tools to understand and study bio-organic reactions, and will have an appreciation of medicinal chemistry.

Material, techniques and skills covered in the course of this module will build on and therefore require understanding of all prior modules.

The module will be assessed by coursework (a presentation, laboratory experiments, laboratory report and assignments) and by examination.

Module Content: Biological Chemistry:

Biological macromolecules – proteins, nucleic acids and polysaccharides

Lipids, phospholipids, sugars, amino acids and nucleotides

Primary and specialised metabolism

Key bio-organic reactions and their mechanisms

Introduction to metabolic pathways

Enzymology – enzyme structure, function, kinetics and inhibition

Medicinal Chemistry:

Synthetic, computational and biological aspects of drug discovery and development

Introduction to pharmacokinetics and pharmacodynamics

Intended Learning Outcomes: By the end of this modules, students will be able to

Apply knowledge of molecular structure, bonding and reactivity to a wide range of biological molecules

Draw curly arrow mechanisms for biochemical transformations

Describe the structures of and biosynthetic pathways to the major classes of specialised metabolites

Describe the primary, secondary, tertiary and quaternary structure of proteins, and the structures of nucleic acids, polysaccharides, and phospholipid bilayers

Relate the structures of these compounds to their functions

Discuss how covalent and non-covalent interactions contribute to the overall folding of a protein, and how small molecules interact with proteins

Describe the Michaelis-Menten model of enzyme kinetics, and interpret information obtained from fitting rate data to this equation

Discuss the major steps in drug discovery

Analyse and explain pharmacological data

Perform a range of standard laboratory procedures

Assessment:	Examination (55%) Laboratory work (20%) Coursework 1 (10%) Presentation (15%)

Assessment Description: Examination
Presentation
Laboratory work
Laboratory report
Workshop assessments

The Laboratory component must be passed (40%) in order to pass the module

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Students will receive regular targeted feedback on their work through verbal, written and online media. Students will also be trained in self-reflection and peer support to enhance the student-generated feedback. Students will also be supported in making best use of feedback available.

Failure Redemption: A suitable supplementary attempt will be permitted on relevant assessment in line with University policy.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Available to visiting exchange students.

CH-240 Computational and Theoretical Chemistry

Credits: 20 Session: 2023/24 January-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr FJ Martin-Martinez

Format: 30 hours practical,
33 hours lectures,
11 hours workshops,
86 hours independent study,
40 hours preparation for assessment

Delivery Method: Lectures, seminars, workshops, flipped classes, peer support, laboratory exercises and online content.

Module Aims: The area of computational chemistry is of ever increasing importance in industry; from designer materials to prediction of likely drug targets, the falling cost of computational power is allowing the simulation of ever more complex molecular systems, lowering the cost of real-world research. This module will take the foundations of theoretical chemistry covered in Year One and further develop these in order to apply to in silico chemistry.

Note: it is expected that material, techniques and skills covered in the course of this module will require understanding of any prior core module.

Module Content: • Review of the concepts of quantum mechanics
- o Schrödinger equation
- o Wave function
- o Operators
- o Particle in a box

• Hydrogen atom
• Helium atom
• Periodic table
- o Effective nuclear charge
- o Electron-electron interaction
- o Spin-orbit coupling
- o Relativistic effects

• Vibrations
• Rotations
• Multi-electron atom
• Born-Oppenheimer approximation
• Linear combination of atom orbitals
• Hückel theory
• Molecular mechanics
• Semi-empirical methods
• Density-functional theory
• Basis sets and functionals
• Potential energy surfaces

Intended Learning Outcomes: Describe core concepts and modelling methods in computational chemistry

Derive results from simple quantum mechanical models

Compare core concepts and evaluate the most appropriate concepts for modelling chemical sytstems

Develop theoretical models to explain experimental observations and evaluate those models in the context of existing understanding

Design experimental protocols using understanding of theoretical models

Assessment:	Examination (55%) Coursework 1 (10%) Laboratory work (20%) Presentation (15%)

Assessment Description: The assessment for this module consists of assessment by examination and a coursework portfolio encompassing technical reports, continuous online assessment, group work and presentations.

The Laboratory component must be passed (40%) in order to pass the module

Moderation approach to main assessment: Moderation by sampling of the cohort

Assessment Feedback: Students will receive regular targeted feedback on their work through verbal, written and online media. Students will also be trained in self-reflection and peer support to enhance the student-generated feedback. Students will also be supported in making best use of feedback available.

Failure Redemption: A suitable supplementary attempt will be permitted on relevant assessment in line with University policy.

Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus.

Available to visiting exchange students .

CH-241 Analytical Chemistry

Credits: 20 Session: 2023/24 September-June

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Dr D Roy, Prof GN Alexandrowicz, Prof SG Bott, Dr EJ Loveridge

Format: 30 hours practical,
36 hours lectures,
6 hours F2F (hopefully)
88 hours independent study,
40 hours preparation for assessment
Contact Hours will be delivered through a blend of live activities online and on-campus, and may include, for example, lectures, seminars, practical sessions and Academic Mentoring sessions.

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed on-campus activities each week. Students may also have the opportunity to engage with online versions of sessions delivered on-campus

Flipped classes, seminars, workshops, peer support, laboratory experiments and online content.

Module Aims: This course will cover theory and applications of qualitative and quantitative analytical chemistry, with particular emphasis on quantitative chemical analysis. The students will learn about various processes and measurements involved in a chemical analysis, and about statistical analyses of the data acquired during such experiments. The topics related to both classic (e.g., titrations) and modern analytical techniques (e.g., spectroscopy, surface analysis) will be covered.

Material, techniques and skills covered in the course of this module will build on and therefore require understanding of all prior modules.

The module will be assessed by coursework (a presentation, laboratory experiments, laboratory report and assignments) and by examination.

Module Content: • Fundamentals

Measurements
Error
Sampling
Statistical Analysis

• Chemical Equilibria

Systematic Treatment of Equilibria
Acids and Bases
Complexation
Gravimetric Titrations

• Electroanalytical Chemistry

Fundamentals of Electrochemistry
Potentiometry
Redox Titrations

• Spectrochemical Analysis

Fundamentals of Spectroscopy
Applications of Spectroscopy
NMR Spectroscopy

• Surface Chemistry

Thermodynamics of surface processes
Adsorption and desorption; application of kinetics
Surface structure and catalysis

• Chromatography
Factors affecting separation
Stationary and mobile phases
Resolution, retention, selectivity and efficiency

• Mass spectrometry
Fragmentation pathways
Hyphenated techniques
Tandem mass spectrometry

Intended Learning Outcomes: By the end of this modules, students will be able to

Apply earlier learning to new situations

Identify, formulate, analyse and solve problems in the analysis of chemical compounds

Outline fundamental and applied aspects of chemical analysis

Design and carry out a method of pharmaceutical and chemical analysis, including instrumental analysis

Assessment:	Examination (30%) In class test (Invigilated on campus) (25%) Coursework 1 (10%) Laboratory work (20%) Presentation (15%)

Assessment Description: The assessment for this module consists of assessment by examination and a coursework portfolio encompassing laboratory reports, continuous online assessment, group work and presentations. The Laboratory component must be passed (40%) in order to pass the module
Moderation approach to main assessment: Moderation by sampling of the cohort
Assessment Feedback: Students will receive regular targeted feedback on their work through verbal, written and online media. Students will also be trained in self-reflection and peer support to enhance the student-generated feedback. Students will also be supported in making best use of feedback available.
Failure Redemption: A suitable supplementary attempt will be permitted on relevant assessment in line with University policy.
Additional Notes: Delivery of both teaching and assessment will be blended including live and self-directed activities online and on-campus. Available to visiting exchange students.

CH-250 Professional Development and Career Planning

Credits: 0 Session: 2023/24 September-January

Pre-requisite Modules:

Co-requisite Modules:

Lecturer(s): Miss VV Wislocka

Format: 6 hours consisting of live lectures which will include guest lectures with employers, previous students. Face to face delivery.

Delivery Method: All Programmes will employ a blended approach to delivery using the Canvas Digital Learning Platform for live and self-directed online activity, with live and self-directed activities each week. Students may also have the opportunity to engage with online versions of sessions
These modules are delivered through online resources, scheduled Zoom sessions and 1-2-1 meetings. There is self-directed learning required using online resources provided.

Module Aims: This module is a mandatory module for all students who have enrolled (or transferred) onto the Science Industrial Placement Year but is also available to all other Chemistry students. The module focuses on the underpinning and fundamental requisites required to gain, enter and progress through a successful career. Learners will be introduced to (a) sourcing placements, CV writing, and application techniques; (b) Interview techniques, how to pitch yourself and be successful; (c) workplace fundamentals and IP awareness, behaviors and expectations; and, (d) Key employability skills; getting the most from your job or Industrial Placement.

Module Content: How to find placements and the main sites to use,
CV writing, CV do's and dont's
Writing a cover letter
Assessments centres, interview techniques and mock interviews
How to utilise LinkedIn for your placement search

Intended Learning Outcomes: By the end of this module, students will be able to:

1) Be aware of and possess the essential skills needed to secure placement opportunities; alongside having the skills to apply for relevant jobs and placements.

2) Have a general understanding of an interview process and what tools and attributes make a good interview.

3) Discuss and share what is expected within the workplace including behavioral and professional conduct.

4) Identify personal employability skills and how these will be used in a workplace setting.

5) Understand the need to reflect and maximise the placement experience in future career decisions.

Assessment: Participation Exercise (100%)

Assessment Description: Students are required to attend all taught sessions and the one to one meeting (if required). The module has no credit attached. However to ensure engagement with the content a compulsory quiz will be added in session 5. Students who do not attend and have no valid reason will not be permitted to continue on a Science Industrial Placement Year programme of study.

Moderation approach to main assessment: Not applicable

Assessment Feedback: Feedback will be given once assessments are marked.

For the H&S quiz, there is an automatic pass/fail.

Failure Redemption: Successful completion of this module depends upon satisfactory attendance at, and engagement with, all sessions. Therefore there will normally be no opportunity to redeem failure. However, special provision will be made for students with extenuating or special circumstances.

Additional Notes: Delivery of teaching will be live, whilst assessments will be self-directed activities online.