

| Module Details | |
|----------------|-------------------------------------|
| Module Title | Introduction to Life Sciences |
| Module Code | CHE3002-B |
| Academic Year | 2021/2 |
| Credits | 20 |
| School | School of Chemistry and Biosciences |
| FHEQ Level | RQF Level 3 |

| Contact Hours | |
|--------------------------------|-------|
| Type | Hours |
| Lectures | 12 |
| Interactive Learning Objects | 12 |
| Seminars | 6 |
| Practical Classes or Workshops | 16 |
| Tutorials | 6 |
| Directed Study | 154 |

| Availability | |
|--------------|-------------------------------------|
| Occurrence | Location / Period |
| BDA | University of Bradford / Semester 1 |

| Module Aims |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To develop the student's knowledge and understanding of the core principles of biology and chemistry, and the underlying mathematical and practical skillsets, required for a successful transition to degree-level study in disciplines which require an academic background in science. |

Outline Syllabus

Biology: Introduction to cell biology, molecular biology, microbiology, biochemistry and genetics. Cell structure, cell communication, diffusion and osmosis, control and co-ordination. Chemistry: Elements, compounds, molecules and mixtures, density, separation techniques; atoms and their structure, the periodic table; bonding: intermolecular, intramolecular, ionic, covalent, metallic; pH, acids and bases, chemical equations. Stoichiometry, Mole Concept, relative atomic/molar masses, molar volume, reacting masses, molar conc. Introduction to organic functional groups and principles of nomenclature. Maths: Measures; significant figures; units & prefixes; ratios; diagrams and line graphs; plotting equations; averages; percentages; algebra; rearranging equations; logarithms; indices; standard form; statistics (Chi-square, Spearman's rank & T-test); understanding significance. Practical Techniques: Health and safety, serial dilutions, pipetting, spectrometry, titrations, preparation of molar solutions, microscopy, pH measurement, use and selection of laboratory glassware, percentage yields.

Learning Outcomes

| Outcome Number | Description |
|----------------|------------------------------------------------------------------------------------------------------------------------------------|
| 01 | Describe, explain and interpret phenomena based on underlying chemical principles. |
| 02 | Describe, explain and interpret introductory concepts in cell biology, molecular biology, biochemistry, microbiology and genetics. |
| 03 | Apply biological, chemical and mathematical concepts to solve problems in familiar and unfamiliar situations. |
| 04 | Apply scientific knowledge to safely conduct practical tasks. |
| 05 | Analyse and interpret experimental data and make reasoned judgements based on this analysis. |

Learning, Teaching and Assessment Strategy

Students will develop understanding and application of knowledge through the use of lectures, tutorials, seminars and practical application. This can include both face to face and online learning. These will facilitate the achievement of learning outcomes 1, 2, 3, 4 and 5.

Assessment 01 a reflective journal will encourage students to reflect on their learning and plan how to develop themselves across the learning outcomes of the module. Assessment 02 examination will assess students ability across LO 1-5 through short answer questions.

Mode of Assessment

| Type | Method | Description | Weighting |
|-----------|---------------------------|----------------------------------|-----------|
| Summative | Coursework - Written | Reflective Journal (1000 words) | 40% |
| Summative | Examination - Closed Book | Short answer questions (1.5 Hrs) | 60% |
| Formative | Coursework - Written | Draft of reflective journal | N/A |

Reading List

To access the reading list for this module, please visit <https://bradford.rl.talis.com/index.html>

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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