BIC3017-B module descriptor	
Module Title	Applied Life Sciences
Credit Level	20 credits (RQF Level 3)
Session	2026/7 academic year
BDA occurrence	Semester 3 available at University of Bradford
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Transparency notice

This specification for module code BIC3017-B has been generated automatically in advance of the academic year 2026/7. Every effort has been made to ensure that the information is accurate at the time of publication, but changes permitted by our Student Contract Terms and Conditions could be made in the interval between publishing and commencement of teaching; where changes impact the terms and conditions of an applicant's or student's offer, these are communicated to them as soon as possible.

BIC3017-B module aims

This module adds to your knowledge and understanding of key topics in Biology and Chemistry, building on learning from the introductory module focused on these two subject areas (Introduction to Chemistry and Biology). It provides you with further opportunities to develop your practical skills and an additional focus is on applied areas, considering the role and responsibilities of science to and within society.

BIC3017-B module learning outcomes	
No.	**Students completing the module will be able to:**
01	Describe the functional properties of the cardiovascular and circulatory systems and explain their influence on other major physiological systems.
02	Describe the digestive processing of the major nutrients and outline nutrient metabolism in mammals.
03	Explain how chemical reactions work and describe the main factors which affect them, with particular reference to equilibria including acid-base equilibria.
04	Describe important organic molecules.
05	Apply basic techniques in laboratory work in Biology and Chemistry with emphasis on good laboratory practice and safety.
06	Explain the practical applications of life sciences in real-life situations.

BIC3017-B module outline syllabus

Biology; Physiology - Students consider the muscular/skeletal system, the cardiovascular system, organisation of the human circulatory system, cardiac structure and blood flow and distribution; the respiratory system, including lung structure, central and peripheral nervous and chemical regulation of respiration, oxygen transport and carbon dioxide elimination; the digestive system, urine formation and the elimination of nitrogenous waste; the endocrine system and production and function of hormones; the reproductive system, menstrual cycle, birth and lactation and the nervous system, including its structure, function, and key components.

Ecology - With particular reference to human ecology and eco-systems; energy and the eco-system; human actions and the eco-system; pollution and conservation

Genetics - Development of the concept of the gene; heredity and genetics; genetic change and variation; evolution; gene action and gene technology; genetic profiling and genes affecting health and longevity.

Chemistry - Equilibria - Dynamism of equilibria. Application of Le Chatelier. Kc and Kp. Acid-based - Bronsted Lowry theory, weak and strong acids and bases. pH, Ka, Kw. Principles of acid-based titrations. Indicators, buffers.

Organic Chemistry - Homologous series, nomenclature, structural, geometrical and optical isomerism. Classification of organic reactions. Simple reactions, of alkanes, alkenes, arenes, halogenoalkenes, alkanois, phenois, carbonyls, carboxyls and derivatives, ethanol chloride, amines, nitriles, amino acids. Organic mechanisms. Organic analysis. Synthetic pathways. Some applied organic chemistry. Fragmentary patterns in organic mass spectroscopy. Interpretation of simple, infra-red spectra.

Impact of Chemistry on Society - Social, economic, technological and environmental impact. Pharmaceutics and Pharmacology - Chemistry of the drug industry.

For more information, visit the VLE (**Canvas**) page, go to our **Reading Lists webpage for this module** or search **https://bradford.rl.talis.com** for this module.

BIC3017-B module notional learning hours

- 140 hours Directed Study
- 45 hours Lectures
- 15 hours Laboratories

The overall expected hours may include contact time, scheduled learning activity, directed and independent study and any minimum expectations for placement learning. Most learning at the University of Bradford has some online content and sessions which are delivered fully by virtual means are labelled as "online".

BIC3017-B module learning, teaching and assessment

Groups are small and classes are student-centred, task-based and interactive.

The classroom approach is explicitly designed to help international students acquire new knowledge and skills, to build their confidence and enable them to become more independent learners. By doing this consistently and across all modules, the programme provides them with a strong foundation for further study in their chosen subject area.

The approach is inclusive and recognises that students come from different backgrounds with a range of previous learning experiences and associated expectations, beliefs and behaviours. Teaching and learning methods are clearly explained so students understand why (where appropriate) they need to engage in new ways of learning and why those they have used or relied on up to this point may be less suited to supporting their ongoing development and their chances of success in UK Higher Education.

Formative work is an integral part of the approach. In class, students are set tasks that require them to apply their knowledge and skills, to think critically and to solve problems. The level of challenge is gradually increased as the students grow in confidence and Tutors help them to see that experimentation, trial and error are central to the learning process, providing constructive feedback on both what has been achieved and how.

Students are also expected to engage in independent study, to reflect on their own performance and to discuss this with their module tutor or personal academic tutor, who will provide support and advice and, when necessary, draw the attention of the Academic Management Team to a struggling student using the 'Students of concern' process.

Assessment combines theoretical and practical evaluation to support progression into undergraduate life sciences.

Laboratory reports (40%) assess Learning Outcomes 2, 3 and 5 and require students to undertake practical investigations and communicate findings effectively.

The examination (60%) assesses Learning Outcomes 1, 2, 4 and 6 through multiple-choice and short-answer questions.

Formative assessment includes practical laboratory sessions, quizzes, specimen interpretation exercises and directed feedback activities.
Success is demonstrated through competent practical work, application of scientific concepts and clear communication of scientific evidence.

To pass the module, students must achieve the University pass mark overall.Students who do not pass the first time will be given an opportunity to complete equivalent assessments that address the failed learning outcomes.

BIC3017-B mode of assessment			
Type	**Mode**	**Assessment description**	**Weight**
Summative	Coursework - Written	Laboratory reports: one in Biology, one in Chemistry (LO2, LO3, LO5) 1000 words.	40%
Summative	Examination - Closed Book	Multiple choice and short answer questions (LO1, LO2, LO4, LO6)	60%

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