

Module Details	
Module Title	Cell Biology
Module Code	BIC3008-A
Academic Year	2022/3
Credits	10
School	UoB International College
FHEQ Level	RQF Level 3

Contact Hours	
Type	Hours
Directed Study	50
Lectures	40
Laboratories	10

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2
BDA	University of Bradford / Semester 3

Module Aims
This module aims to provide students with an introduction to post-High School Biology and provide the basic knowledge for further study in the areas of biology and the life sciences. The module will provide students with an understanding of cell structure and function, how information flows through a cell and the basic principles of metabolism. The module will also introduce students to laboratory practice and procedures with an emphasis on the need to work safely.

Outline Syllabus

Biological molecules:
Molecule properties
Formula and functions of water
Carbohydrates
Lipids
Proteins
Nucleic acids
Storage compounds: starch, glycogen and triglycerides
Cellular functions:
Prokaryotic, structure and function
Eukaryotic include organelles - nucleus, mitochondria, cell wall, lysosomes, endoplasmic reticulum, Golgi apparatus, ribosome, vacuole, flagella
Membrane structure and function
Viruses outline structure - its exception to the cell theory
Chromosomes structure:
Concept of a gene
Protein synthesis
DNA replication
Cell division:
Mitosis and its significance
Meiosis and its significance
Significance of crossing over
Enzymes:
Structure and properties
Effects of temperature, pH and inhibitors
Metabolic pathways:
Catabolism and anabolism
Interrelationship of metabolic pathways
Inspirational pathway
Aerobic and anaerobic respiration

Learning Outcomes

Outcome Number	Description
1	Explain cell structure and describe the significance of cell division.
2	Describe the outlines of DNA replication, RNA transcription and translation.
3	Describe the properties, formula, structure and roles of important molecules.
4	Describe the main metabolic pathways and those of carbohydrate metabolism.
5	Describe the basic characteristics of enzymes.
6	Carry out simple laboratory operations with an awareness of the importance of rules governing safety.

Learning, Teaching and Assessment Strategy

Students will learn in small interactive groups (max 18 students) on learner-centred tasks and with a highly interactive approach to learning and teaching. There will be both classroom-based lessons and sessions in a science laboratory to focus on the practical aspect of the module. During the module, formative assignments will be set to provide students with detailed and helpful feedback. The students will be encouraged throughout to reflect on their own performance and the feedback they receive informs sessions with their personal tutor. The personal tutor monitors student performance and supports suggestions for improvement. The personal tutor can draw the senior team's attention to a struggling student through the 'at risk' process.

The summative assessment consists of two parts. Part 1 requires the students to carry out two laboratory operations and write reports that describe the basic characteristics of enzymes and describe the properties, formula, structure and roles of important molecules. The report should also evidence how the student has an awareness of the importance of rules governing safety in the laboratory. Part 2 of the summative assessment requires the student to participate in an unseen examination which covers the theoretical aspects of the module.

Mode of Assessment

Type	Method	Description	Weighting
Summative	Coursework - Written	Lab reports on 2 practical sessions (1000 words)	30%
Summative	Examination - Closed Book	Unseen Examination (2 Hrs)	70%

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.