

| Module Details | |
|----------------|-------------------------------------|
| Module Title | Pathology |
| Module Code | BIS5015-B |
| Academic Year | 2024/5 |
| Credits | 20 |
| School | School of Chemistry and Biosciences |
| FHEQ Level | FHEQ Level 5 |

| Contact Hours | |
|--------------------------------|-------|
| Type | Hours |
| Lectures | 22 |
| Practical Classes or Workshops | 9 |
| Directed Study | 169 |

| Availability | |
|--------------|-------------------------------------|
| Occurrence | Location / Period |
| BDA | University of Bradford / Semester 2 |
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| Module Aims |
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| <p>Pathology is a Biomedical Science specialist laboratory discipline that involves the study and diagnosis of disease through the examination of tissue specimens. Human diseases have a wide impact at the cellular level and tissue level. Understanding the mechanisms by which diseases occur is essential in the development of novel therapeutic interventions.</p> <p>This module supports the Biomedical Science programme by developing learners' knowledge and critical understanding of the well-established principles of Biomedical Science (PLO6). It also enables learners to evaluate and discuss the laboratory specialities of cellular pathology (PLO7). This will be done by promoting learners' appreciation of: the pathogenic mechanisms (endogenous and exogenous) associated with the development, progress, manifestation and complications of disease in human beings; the range of diseases which affect particular organs/tissues and the accompanying changes in morphology both locally and systemically. Learners will also understand the importance of digital pathology in diagnostic medicine in order to achieve even better, faster and cheaper diagnosis, prognosis and prediction of cancer and other important diseases.</p> <p>This module will support those students seeking knowledge to support their employment in medicine and medical research. It emphasises the control and integration of cells and systems in the healthy body and the mechanisms involved in the development of specific diseases</p> |

Outline Syllabus

Academic Content:

Introduction to pathology

Agents causing injury: a) endogenous injury: genetic injuries, ageing, immunological b) exogenous injury: physical agents including radiation, chemicals, nutrition and microbial agents

Effects of injury on cells and tissues: ultrastructural deterioration; alterations in cells detectable by light microscopy

Effects of cell and tissue response to injury (hypertrophy, hyperplasia and atrophy)

Host response to injury: acute and chronic inflammation; tissue repair and wound healing

Inflammation (causes, detection, resolution) - autoimmune disease, respiratory disease (asthma)

Diseases of ageing - nervous system disease (Alzheimer's, Parkinsons), cardiovascular system disease (atherosclerosis, stroke, heart attack)

Metabolic diseases and lifestyle / exercise physiology and disease (diabetes, obesity, renal failure)

Endocrine deficiencies and exocrine systems (e.g. thyroid, pituitary)

Histology, cytology and digital pathology

Regenerative medicine, including cell-based therapies

Employability and Enterprise Skills

Biomedical knowledge and critical understanding

Laboratory skills

Communication skills

Data analysis

Critical thinking

Learning Outcomes

| Outcome Number | Description |
|----------------|--|
| 01 | Interpret clinical and laboratory data (including cytological and histological evidence) relating to pathological changes arising from a variety of disease states (HCPC standards 1, 3, 14, 10, 15) |
| 02 | Describe and discuss the changes that occur following endogenous and exogenous cell and tissue injury and understand how these can change the pathology of the tissue (HCPC Standard 13). |

Learning, Teaching and Assessment Strategy

The LTA strategy encompasses education for employability and equal opportunities for learners. Concepts, principles and knowledge will be explored in lectures that are characterised by active learning concepts. This theoretical knowledge will be supported by hands-on learning in laboratory practical classes, workshops and digital learning platforms. This mix of methodologies will be accessible to different learning styles and will develop critical thinking and interpretative skills through case studies. Private study will be facilitated and supported via the use of the virtual learning environment (VLE), which will provide coursework advice and feedback, and revision support.

Assessment Strategy:

Students will be provided with a hypothetical clinical case and will have to choose a series of questions to ask to reach a prognosis - for example, which laboratory tests could be ordered, what might any histological samples show etc.

The theoretical knowledge will be assessed by a closed book exam.

Formative MCQ tests will be made available via the VLE at the completion of each teaching block as well as at the end of each semester, providing immediate feedback for learners to self-assess their understanding and progress.

Formative case study material will be provided via the VLE and feedback provided by a group discussion.

Reassessment of failed elements will be as per the initial method of assessment.

It is a requirement of the IBMS that ALL assessments in this module MUST be passed with a minimum mark of 40%.

The following statement applies to learners that are completing this module as part of an Apprenticeship.

The apprentice must meet all the required standards when measured against each individual learning outcome for the module (as mapped below):

Healthcare Science Practitioner: 5.1, 5.5

Mode of Assessment

| Type | Method | Description | Weighting |
|-----------|---------------------------|--|-----------|
| Summative | Coursework - Written | From a hypothetical clinical case learners to choose a series of questions to ask to reach a prognosis MUST PASS 40% | 50% |
| Summative | Examination - Closed Book | Closed book exam. MUST PASS 40% | 50% |

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.