Module Specification

Cellular Pathology and Oncology

Version: 2025-26, v5.0, Approved

Contents

Part 1: Information

Module title: Cellular Pathology and Oncology

Module code: USSKBM-30-3

Level: Level 6

For implementation from: 2025-26

UWE credit rating: 30

ECTS credit rating: 15

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Studies in the Biology of Disease 2025-26

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Cellular pathology is a core discipline of Biomedical Science involving the diagnosis and prognosis of disease from samples of tissue or cells. This includes the clinical identification and management of the vast majority of cancers.
In this module we will examine the principles of studying tissues and cells for diagnostic purposes, recognising the unique structure and organisation of normal and the structural changes which may occur during disease, especially cancers.

We will also explore the key features of tumour cells and the molecular mechanisms of malignant transformation. Further we will examine cancer epidemiology, risk, prevention and treatment.

Pre-requisites: Students must have passed USSKAT-30-2 Studies in the Biology of Disease before starting this module.

Features: This module is available as CPD.

Educational aims: This module is designed to give students an understanding of the diagnostic and prognostic processes carried out in the Cellular Pathology department of hospital laboratories. Students will also learn the underlying pathophysiology of diseases affecting a range of organs and systems with a focus on neoplastic disease. The overarching principles of cancer cell biology will be explored in order to understand cancer diagnosis and treatment.

Outline syllabus: The indicative syllabus of the module is as follows:

Technical aspects of Cellular Pathology
Preparative processes in Cellular Pathology; microscopy; the theory of stain action; immunocytochemistry; cytopathology; molecular techniques used and their application.

Principles of Cancer Biology
The hallmarks of cancer; its genetic basis; oncogenes and tumour suppressor genes; cell signalling in tumours; tumour progression; invasion and metastasis; the role of cancer stem cells.

Cancer screening; diagnosis; grading and staging; existing therapeutic strategies; potential future therapies.

Tissues and Organs: Pathology and Investigation
A systematic overview of the structure and function of the major organs, their pathology, and associated neoplastic disease. (To include: liver; lung; skin; prostate; reproductive system; gastrointestinal tract; the urinary/renal system; breast; bone; skin; pancreas; neuroendocrine system).

Non-neoplastic disease of the major organs requiring cellular pathological investigation; systemic disease such as amyloidosis and renal disease.

The role of cellular pathology in research; quantitation; quality control.

Part 3: Teaching and learning methods

Teaching and learning methods: Scheduled learning
The majority of the taught material will be delivered as lectures, complemented by tutorials and practical classes.

Independent learning
In addition to lectures, and practicals, students are expected to prepare for tutorial sessions by carrying out designated reading tasks. Furthermore, they are expected to undertake further independent reading – with guidance given during lectures.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Apply the principle and practice of tissue preparation for histology including staining methods and imaging techniques.

MO2 Recognise the gross structure and ultrastructure of normal cells and tissues and the structural changes which may occur during disease.

MO3 Understand the key features of tumour cells and the role of Cellular Pathology in diagnosis, prognosis and treatment.

MO4 Critically discuss the epidemiology and aetiology of cancer, and current methods for cancer screening.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/usskbm-30-3.html

Part 4: Assessment

Assessment strategy: Assessment 1: Portfolio (Maximum 2000 words in total)
Students will carry out interpretation of data (some obtained during practical classes), including diagnostic and prognostic interpretation. They will also be required to engage with research literature around cancer therapy and clinical trials. These tasks will be spread across the length of the module and supported with tutorials and feedback sessions to allow ongoing improvement.

Assessment 2: Examination
Three hour on-campus invigilated examination to align with the Institute of Biomedical Science requirements.
The exam will comprise a mixture of question styles and is an effective method of assessing a student's ability to utilise and apply knowledge gained at this level. Support tutorials will cover how to approach exam questions together with specific exam revision and preparation sessions prior to the exam.
The students are further supported to succeed by being permitted to bring a single A4 box file of information with them to the assessment for use as a reference point. The content of the box is controlled to prevent students bringing pre-written essays in to copy.
Summative feedback for assessment 1 is formative for assessment 2.

Assessment tasks:

Portfolio (First Sit)
Description: Portfolio consisting of a number of small tasks (2000 words)
Weighting: 50 %
Final assessment: No
Group work: No

Learning outcomes tested: MO1, MO2, MO3

Examination (First Sit)
Description: Examination (3 Hours)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO2, MO3, MO4

Portfolio (Resit)
Description: Portfolio consisting of a number of small tasks (2000 Words)
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Examination (Resit)
Description: Examination (3 Hours)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Biomedical Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2021-22

Biomedical Science [Frenchay] BSc (Hons) 2023-24

Biomedical Science [Frenchay] MSci 2023-24

Biomedical Science [Sep][PT][Frenchay][6yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][PT][Frenchay][6yrs] BSc (Hons) 2021-22

Biomedical Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2021-22

Biomedical Science [Sep][PT][Frenchay][8yrs] MSci 2020-21

Biomedical Science [Sep][PT][Frenchay][8yrs] MSci 2021-22

Biomedical Science [Frenchay] BSc (Hons) 2022-23

Biomedical Science {Foundation} [Frenchay] BSc (Hons) 2022-23

Biomedical Science [Frenchay] MSci 2022-23

Biomedical Science {Foundation} [Frenchay] MSci 2022-23