



Module Specification

Cellular Pathology and Oncology

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Part 1: Information

Module title: Cellular Pathology and Oncology

Module code: USSKBM-30-3

Level: Level 6

For implementation from: 2022-23

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Applied Sciences

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Applied Sciences

Module type: Standard

Pre-requisites: Studies in the Biology of Disease 2022-23

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See Learning Outcomes

Outline syllabus: 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, but divided into discrete sections:

The early part of the module will focus on the technical aspects of cellular pathology, this will include a practical class where technique will be put into practice and followed by a tutorial session to both review and reinforce learning, and provide guidance for a written assessment based on the laboratory work.

The next section will focus on the cellular and molecular biology of cancer. This will be largely lecture-based and include a tutorial exercise on the grading and staging of

cancer.

The remainder of the module will focus on different organ systems each week, their pathology and cellular pathology approaches to disease investigation. This section will include two practical classes – one focussing on prostate pathology and amyloidosis, the second on the grading and staging of solid tumours.

The final section will also include tutorials on current research frontiers, the use of immunocytochemistry in research, the use of molecular techniques in cellular pathology, and cancer screening programmes - where students may be given reading materials or case studies in advance and will be expected to actively participate in the session.

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. This reading is designed to support student learning both for the completion of coursework, but also in preparation for the final exam to ensure both breadth and depth to their knowledge.

The expected time dedicated to independent learning is 228 hours.

Contact Hours:

The contact hours (72) are distributed as follows:

51 hours of lectures

9 hours of practical classes

12 hours of tutorials/seminars (including 3 hours of revision sessions)

In addition to the described contact time, this material will be supported through online learning material, including online quizzes and technology-enhanced lecture material.

Independent learning: Using defined TEL strategies includes hours engaged with essential reading, assignment preparation and completion etc.

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

MO1 Employ good laboratory practice related to Cellular Pathology techniques.

MO2 Understand the principles of tissue preparation for histology and the mechanism by which common staining methods work.

MO3 Show an appreciation of the epidemiology and aetiology of cancer.

MO4 Understand the key features of tumour cells, progression towards malignancy and the cellular and molecular biology underpinning malignant disease.

MO5 Discuss the role of Cell Pathology in the diagnosis and prognosis of both neoplastic and non-neoplastic disease in the major organs and tissues.

MO6 Critically discuss current methods for cancer screening, and the potential for development of existing and potential future screening programmes.

MO7 Understand current therapeutic approaches and be able to discuss potential future avenues for therapy.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

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

Part 4: Assessment

Assessment strategy: Coursework:

CW1 will be a 1500 word essay based on a cancer of the student's choice. They will be given certain criteria to cover, and invited to search the scientific literature for the latest developments in their chosen area. This will allow the students the freedom to explore an area of personal interest and using this as an exemplar of certain core

aspects of the module curriculum. Students will be given this opportunity, and appropriate feedback, to develop their scientific writing skills.

CW2 will consist of a 1500 word report based on a case study with data obtained in part through the third practical class. Students will interpret their own data, alongside that provided to decide the diagnosis, prognosis and treatment strategy for a patient. This will allow the student to critically evaluate scientific literature and current clinical practice.

Exam:

The final element is a three hour examination, comprising of essay type questions. Allowing students to demonstrate both the breadth and depth of knowledge of the topics.

In addition to these assessments, students will be given formative feedback in lectures and tutorials.

Assessment components:

Examination - Component A (First Sit)

Description: Three Hour Examination

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7

Written Assignment - Component B (First Sit)

Description: 1500 word essay

Weighting: 25 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7

Written Assignment - Component B (First Sit)

Description: 1500 word laboratory-based case study

Weighting: 25 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7

Written Assignment - Component B (Resit)

Description: Extended essay (3000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested:

Examination - Component A (Resit)

Description: Three Hour Examination

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Healthcare Science (Tissue Science) [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Healthcare Science (Tissue Science) {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20

Biomedical Science [Sep][SW][Frenchay][5yrs] MSci 2019-20

Biomedical Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2019-20

Biomedical Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2018-19

Applied Biomedical Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][FT][Frenchay][4yrs] MSci 2020-21

Biomedical Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20

Biomedical Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20

Biomedical Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19