



MODULE SPECIFICATION

Part 1: Information			
Module Title	Cellular Pathology and Oncology		
Module Code	USSJYQ-30-M	Level	Level 7
For implementation from	2020-21		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Health & Applied Sciences	Field	Applied Sciences
Department	HAS Dept of Applied Sciences		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Features: Module entry requirements: Students must have studied cellular pathology at undergraduate degree level.</p> <p>Educational Aims: See Learning Outcomes</p> <p>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.</p> <p>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.</p> <p>Cancer screening; diagnosis; grading and staging; existing therapeutic strategies; potential future therapies.</p> <p>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;</p>

STUDENT AND ACADEMIC SERVICES

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.

Teaching and Learning Methods: Formal lectures – 2 hours per week during teaching weeks (two semesters).

M level tutorials – 1 hour per week for 20 weeks.

Practical classes – 3 x 3 hour laboratory-based practicals.

Teaching will comprise a mix of formal lecture, group discussion, tutorials and data interpretation exercises. For each hour of scheduled study students are advised to undertake 9 hours of independent study - as this is an M level module the amount of guidance on activities will be reduced as the year progresses so that students develop independent learning skills, and gain the chance to study topics from within the module in alignment with their areas of interest. The interactive nature of the M level tutorials will mean that students will need to spend time each week preparing for the next session. The students will be advised to allow at least 50 hours of the independent study time working on the coursework for the module (which contributes 50% of the module mark).

Students on the module will also be required to attend a conference week at an appropriate time in the year (dependent on changes to the academic calendar). During this week a range of visiting lecturers will be brought in to give keynote lectures (for example based on their clinical practice) or research focused lectures that map to the syllabus content. The conference week will also give students an experience of what it is like to attend a scientific conference, with an intensive schedule of talks across the week to be attended. Engagement with the conference week will be assessed as part of USSJYR-15-M (Advanced Topics in Biomedical Science) but the lecture content of conference week will augment this module as well.

The taught component will be 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.

In addition to lectures, and practicals, students are expected to prepare for tutorial sessions by carrying out designated reading tasks. Furthermore, they are expected 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.

STUDENT AND ACADEMIC SERVICES

Part 3: Assessment

The MSc BMS Programme has a programme level assessment strategy (see Programme Specification appendix 1), and all modules have their assessments designed to relate to that document. For parity across all routes the specialist subject modules on the MSc BMS programme have a 50:50 weighting of course work to final exam – this module is one of the specialist modules. Therefore the coursework has been designed in line with the programme assessment strategy.

Coursework:

The coursework here comprises two elements:

Essay: This is an extended essay (3000 words) that is similar in style to a review article in a journal. This is therefore a highly relevant assessment for higher level science graduates to have undertaken, preparing them for future academic style writing in their professional lives. Students will be allowed to choose a topic based on an area of active research in either cancer biology or histopathology

Case Study: Based on the practical class where cellular pathology is used in the diagnosis, grading, staging, and therefore prognosis of a common solid tumour. Students will be required to describe the technical application of techniques learned in the classroom to clinical diagnosis and the work up of prognostic information. This will take the form of a 1500 written report.

The assessments are marked to the BBAS standard PG marking criteria, and students are fully briefed on the assessment both in writing and through a tutorial session. Students also develop several transferable skills during this assessment including negotiation (they are allowed to pick their own title and refine it), critiquing of published literature, scientific writing etiquette, and editing documents to a high editorial standard.

The exam enables students to demonstrate a breadth of knowledge that it would be reasonable for future employers to see in a Masters graduate in relation to their chosen specialism. This will be an online exam with a 24 hour submission window.

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		25 %	Extended essay (3000 words)
Examination (Online) - Component A	✓	50 %	Online examination (24 hours)
Case Study - Component B		25 %	Case study (1500 words)
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		50 %	Extended essay (5000 words)
Examination (Online) - Component A	✓	50 %	Online examination (24 hours)

STUDENT AND ACADEMIC SERVICES

Part 4: Teaching and Learning Methods																	
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;">Module Learning Outcomes</th> <th style="text-align: left;">Reference</th> </tr> </thead> <tbody> <tr> <td>Understand good laboratory practice related to Cellular Pathology techniques</td> <td>MO1</td> </tr> <tr> <td>Understand the principles of tissue preparation for histology and the mechanism by which common staining methods work</td> <td>MO2</td> </tr> <tr> <td>Show an appreciation of the epidemiology and aetiology of cancer</td> <td>MO3</td> </tr> <tr> <td>Understand the key features of tumour cells, progression towards malignancy and the cellular and molecular biology underpinning malignant disease</td> <td>MO4</td> </tr> <tr> <td>Discuss the role of Cell Pathology in the diagnosis and prognosis of both neoplastic and non-neoplastic disease in the major organs and tissues</td> <td>MO5</td> </tr> <tr> <td>Critically discuss current methods for cancer screening, and the potential for development of existing and potential future screening programmes</td> <td>MO6</td> </tr> <tr> <td>Understand current therapeutic approaches and be able to discuss potential future avenues for therapy</td> <td>MO7</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Understand good laboratory practice related to Cellular Pathology techniques	MO1	Understand the principles of tissue preparation for histology and the mechanism by which common staining methods work	MO2	Show an appreciation of the epidemiology and aetiology of cancer	MO3	Understand the key features of tumour cells, progression towards malignancy and the cellular and molecular biology underpinning malignant disease	MO4	Discuss the role of Cell Pathology in the diagnosis and prognosis of both neoplastic and non-neoplastic disease in the major organs and tissues	MO5	Critically discuss current methods for cancer screening, and the potential for development of existing and potential future screening programmes	MO6	Understand current therapeutic approaches and be able to discuss potential future avenues for therapy	MO7
Module Learning Outcomes	Reference																
Understand good laboratory practice related to Cellular Pathology techniques	MO1																
Understand the principles of tissue preparation for histology and the mechanism by which common staining methods work	MO2																
Show an appreciation of the epidemiology and aetiology of cancer	MO3																
Understand the key features of tumour cells, progression towards malignancy and the cellular and molecular biology underpinning malignant disease	MO4																
Discuss the role of Cell Pathology in the diagnosis and prognosis of both neoplastic and non-neoplastic disease in the major organs and tissues	MO5																
Critically discuss current methods for cancer screening, and the potential for development of existing and potential future screening programmes	MO6																
Understand current therapeutic approaches and be able to discuss potential future avenues for therapy	MO7																
Contact Hours	<table border="1"> <thead> <tr> <th colspan="2">Independent Study Hours:</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Independent study/self-guided study</td> <td style="text-align: center;">234</td> </tr> <tr> <td style="text-align: center;">Total Independent Study Hours:</td> <td style="text-align: center;">234</td> </tr> <tr> <th colspan="2">Scheduled Learning and Teaching Hours:</th> </tr> <tr> <td style="text-align: center;">Face-to-face learning</td> <td style="text-align: center;">66</td> </tr> <tr> <td style="text-align: center;">Total Scheduled Learning and Teaching Hours:</td> <td style="text-align: center;">66</td> </tr> <tr> <td>Hours to be allocated</td> <td style="text-align: center;">300</td> </tr> <tr> <td>Allocated Hours</td> <td style="text-align: center;">300</td> </tr> </tbody> </table>	Independent Study Hours:		Independent study/self-guided study	234	Total Independent Study Hours:	234	Scheduled Learning and Teaching Hours:		Face-to-face learning	66	Total Scheduled Learning and Teaching Hours:	66	Hours to be allocated	300	Allocated Hours	300
Independent Study Hours:																	
Independent study/self-guided study	234																
Total Independent Study Hours:	234																
Scheduled Learning and Teaching Hours:																	
Face-to-face learning	66																
Total Scheduled Learning and Teaching Hours:	66																
Hours to be allocated	300																
Allocated Hours	300																
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ussjyq-30-m.html</p>																

Part 5: Contributes Towards	
<p>This module contributes towards the following programmes of study:</p> <p>Biomedical Science (Cellular Pathology) [Sep][FT][Frenchay][1yr] MSc 2020-21</p> <p>Biomedical Science [Sep][FT][Frenchay][1yr] MSc 2020-21</p>	