



**ACADEMIC SERVICES**

**MODULE SPECIFICATION**

Part 1: Basic Data					
Module Title	Cellular Pathology & Oncology				
Module Code	USSKBM-30-3	Level	3	Version	2
Owning Faculty	Health and Applied Sciences	Field	Department of Biological, Biomedical and Analytical Sciences		
Contributes towards	BSc Biomedical Science BSc Healthcare Science (Life Sciences)				
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard
Pre-requisites	Studies in the Biology of Disease (USSKAT-30-2); USSKB7-15-2 Molecular Genetics		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements	N/A	
Valid From	September 2014 September 2017 (v2)		Valid to	September 2020	

<b>CAP Approval Date</b>	28/03/2014 01/02/2017 (v2)
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Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> <li>• Employ good laboratory practice related to Cellular Pathology techniques.</li> <li>• Understand the principles of tissue preparation for histology and the mechanism by which common staining methods work.</li> <li>• Show an appreciation of the epidemiology and aetiology of cancer.</li> <li>• Understand the key features of tumour cells, progression towards malignancy and the cellular and molecular biology underpinning malignant disease.</li> <li>• Discuss the role of Cell Pathology in the diagnosis and prognosis of both neoplastic and non-neoplastic disease in the major organs and tissues.</li> <li>• Critically discuss current methods for cancer screening, and the potential for development of existing and potential future screening programmes.</li> <li>• Understand current therapeutic approaches and be able to discuss potential future avenues for therapy.</li> <li>•</li> </ul>
Syllabus Outline	<p><u>Technical aspects of Cellular Pathology</u></p> <ul style="list-style-type: none"> <li>• Preparative processes in Cellular Pathology; microscopy; the theory of stain action; immunocytochemistry; cytopathology; molecular techniques used and</li> </ul>

	<p>their application.</p> <p><u>Principles of Cancer Biology</u></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Cancer screening; diagnosis; grading and staging; existing therapeutic strategies; potential future therapies.</li> </ul> <p><u>Tissues &amp; Organs: Pathology &amp; Investigation</u></p> <ul style="list-style-type: none"> <li>• 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).</li> <li>• Non-neoplastic disease of the major organs requiring cellular pathological investigation; systemic disease such as amyloidosis and renal disease.</li> <li>• The role of cellular pathology in research; quantitation; quality control.</li> </ul>
<p>Contact Hours</p>	<p>The contact hours (72) are distributed as follows:</p> <p>51 hours of lectures  9 hours of practical classes  12 hours of tutorials/seminars (including 3 hours of revision sessions)</p> <p>In addition to the described contact time, this material will be supported through online learning material, including online quizzes and technology-enhanced lecture material.</p> <p><b>Independent learning:</b> Using defined TEL strategies includes hours engaged with essential reading, assignment preparation and completion etc.</p>
<p>Teaching and Learning Methods</p>	<p><b>Scheduled learning</b></p> <p>The majority of the taught material will be delivered as lectures, complemented by tutorials and practical classes, but divided into discrete sections:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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</li> <li>• 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.</li> <li>• 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.</li> </ul> <p><b>Independent learning</b></p> <p>In addition to lectures, and practicals, students are expected to prepare for tutorial sessions by carrying out designated reading tasks. Furthermore, they are expected</p>

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.

**Key Information Sets Information**

Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for.

<b>Key Information Set - Module data</b>				
<i>Number of credits for this module</i>				20
Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours
300	72	228		300

The table below indicates as a percentage the total assessment of the module which constitutes a -

**Written Exam:** One unseen written exam.

**Coursework:** One written assignment based on the first practical class and one poster presentation based on research in a current area of interest in pathology/oncology.

Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description:

Total assessment of the module:		
Written exam assessment percentage		60%
Coursework assessment percentage		40%
		100%

**Reading Strategy**

All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, the library catalogue and access to generic resources such as referencing tutorials. Many resources can be accessed remotely. Students will be presented with opportunities within the curriculum to develop their information retrieval and evaluation skills in order to identify such resources effectively.

Any essential reading will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set text, be given or sold a print study pack or be referred to texts that are available electronically, etc. This guidance will be available either in the module handbook, via the module information on Blackboard or through any other vehicle deemed appropriate by the module/programme leaders.

If further reading is expected, this will be indicated clearly. If specific texts are listed, a

	<p>clear indication will be given regarding how to access them and, if appropriate, students will be given guidance on how to identify relevant sources for themselves, e.g. through use of bibliographical databases.</p> <p>A detailed reading list will be made available through relevant channels, e.g. module handbooks, Blackboard, etc.</p>
Indicative Reading List	<p><i>The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. However, as indicated above, CURRENT advice on readings will be available via other more frequently updated mechanisms.</i></p> <p><b>The recommended module textbooks are:</b></p> <p>Lakhani, S.R., Dilly, S.A., Finlayson, C.J. (2009) <i>Basic Pathology: An Introduction to the Mechanisms of Disease</i>. London: Arnold.</p> <p>Stevens, A. Lowe, J. (2009) <i>Core Pathology</i>. London: Mosby.</p> <p>Weinberg, R.A. (2013) <i>The Biology of Cancer</i>. Abingdon: Garland.</p> <p><b>Other relevant texts for the module:</b></p> <p>Cook, S.J. (2006) <i>Cellular Pathology</i>. :Bloxham: Scion.</p> <p>Kiernan, J.A. (2008) <i>Histological and Histochemical Methods</i>. :Bloxham: Scion.</p> <p>Pecorino, L. (2008) <i>Molecular Biology of Cancer</i>. Oxford: Oxford.</p> <p>Suvarna, S.K., Layton, C., Bancroft, J.D. (2013) <i>Bancroft's Theory and Practice of Histological Techniques</i>. London:Elsevier.</p> <p><b>Journals:</b></p> <p>Applied Immunohistochemistry and Molecular Morphology (e-journal)  American Journal of Clinical Pathology (not currently available in UWE libraries)  American Journal of Surgical Pathology  British Journal of Cancer  Cancer Research  Current Diagnostic Pathology  European Journal of Cancer  Histopathology  Histochemical Journal  Human Pathology  International Journal of Cancer  Journal of Clinical Pathology  Journal of Histochemistry and Cytochemistry  Journal of Pathology  Modern Pathology  Molecular Pathology  Nature Reviews Cancer  Pathology International  The Lancet</p>

### Part 3: Assessment

Assessment Strategy	<p><b>Coursework:</b></p> <p>CW1 will be a 2000 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</p>
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	<p>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.</p> <p>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.</p> <p><b>Exam:</b> The final element is a 3 hour examination comprising of essay type questions. Allowing students to demonstrate both the breadth and depth of knowledge of the topics.</p> <p>In addition to these assessments, students will be given formative feedback in lectures and tutorials.</p>
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Identify final assessment component and element		
% weighting between components A and B (Standard modules only)	<b>A:</b>	<b>B:</b>
	<b>60</b>	<b>40</b>
<b>First Sit</b>		
<b>Component A</b> (controlled conditions) <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1. EX1 - Written Exam (3 hours)	100%	
<b>Component B</b> <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1. CW1 – 2000 word essay	50	
2. CW2 – 1500 word Laboratory-Based Case Study	50	

<b>Resit (further attendance at taught classes is not required)</b>		
<b>Component A</b> (controlled conditions) <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1. EX2 - Written Exam (3 hours)	100	
<b>Component B</b> <b>Description of each element</b>	<b>Element weighting</b> <i>(as % of component)</i>	
1. CW3 – Extended essay assessment	100	
If a student is permitted an <b>EXCEPTIONAL RETAKE</b> of the module the assessment will be that indicated by the Module Description at the time that retake commences.		

**FOR OFFICE USE ONLY**

First CAP Approval Date	28/03/2014		
Revision CAP Approval Date	01/02/2017	Version	2 <a href="#">Link to RIA 12148</a>

