



ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Current Issues in Biomedical Science				
Module Code	USSKL3-30-M	Level	M	Version	2
UWE Credit Rating	30	ECTS Credit Rating	15	WBL module?	No
Owning Faculty	Health and Applied Sciences	Field	Applied Sciences		
Department	Biological Biomedical and Analytical Sciences	Module Type	Standard		
Contributes towards	MSc Biomedical Science and all associated named routes				
Pre-requisites	None		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements	None	
First CAP Approval Date	30 th May 2012		Valid from	September 2012	
Revision CAP Approval Date	2 nd February 2016		Revised with effect from	September 2016	

Review Date	~ 5 years post approval for PSRB requirements
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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"> critically appraise current literature on the nature of disease processes in terms of molecular, biochemical, immunological, microbiological and pharmacological interactions discuss critically the role of research in furthering knowledge and understanding of physiology pathophysiology, and treatment of a variety of conditions discuss the principles of a variety of analytical techniques used in hospital laboratories compare the relative advantages and disadvantages of different techniques interpret critically research results based on these techniques in the published literature develop further skills in written and oral communication relevant to biology of disease show an awareness of the political and social factors that impact on the biomedical science research and diagnostics show an awareness of management issues that affect biomedical science research and diagnostic laboratories <p>All learning outcomes assessable in both Components A and B</p>

Syllabus Outline	<p>The module covers both the scientific topics that are of current concern (70% of content), and also introduces policy and management topics that are relevant to the biomedical sector at this time (approximately 30% of content). This recognises that biomedical science diagnostics and research happens within the broader setting of the political and social structures of the United Kingdom.</p> <p>The scientific topics will be related to current priority areas of government departments and agencies and funding bodies such as the Medical Research Council, The Wellcome Trust, BBSRC, DiabetesUK, Alzheimer's Society or the British Heart Foundation. The following is an indicative, but not exhaustive list of the type of topics available for selection as appropriate to the award.</p> <p>1. Technology development for bioscience – Biosensors. 2. Recent development in Type 1&2 Diabetes mellitus research. 3. Recent development in Obesity research. 4. Recent advances in cancer research. 5. The impact of tissue micro array (TMA) technology on biomedical research. 6. Early diagnosis of cancer (cancer imaging, biomarkers, discovery and development of anticancer drugs, genetic testing) 7. Neurodegeneration, 8. Stem cell plasticity; 9. Haematological cancers; 10. The replacement, refinement and reduction (3Rs) in research using animals; 11. Data driven biology – analysis of next generation sequencing, capturing variation and linking biological processes through to phenotypic traits; 12. Healthy and safe food; 13. Clinical translational research – breath gas analysis; 14. Asthma (Genetics, early life events and development of asthma, environment and lifestyle influences on asthma, infection, immunity and their effects on asthma); 15. Vaccine research. 16. Antimicrobial resistance; 17. Dementia – Alzheimer disease (cause – genetics, cellular mechanism, vascular disease, cure- drug development, stem cells, vaccines, prevention – long term epidemiological studies, treatment for high blood pressure).</p> <p>The management topics to be covered will be those related to legislation pertaining to the sector, professional body requirements, laboratory facility standards, training and development, leadership styles and their impact in the workplace, and other topics identified as the course develops. The following is an indicative, but not exhaustive list of the type of topics available for selection as appropriate to the award.</p> <p>1. Legislation applicable to biomedical science diagnostics and research. 2. Laboratory standards in relation to diagnostics, training, professional registration; quality management. 3. Uncertainty of measurement in clinical diagnostics – and its potential impact on research. 4. Management and leadership styles; communication skills and teamwork. 5. Introductory theory of workplace learning, training and assessment; good training culture, 6. The growing importance of point of care testing and its management; the “modelling of pathology for the future. 7. Research governance in the UK.</p>
Contact Hours	<p>Formal lectures – 4 hours per week for one semester - lectures on the scientific and management areas</p> <p>Tutorials to support the assessment – 8 hours over the course of the semester</p> <p>Attendance of the assessed presentations of all students at the end of the module – hours will depend on number of students on the module.</p>
Teaching and Learning Methods	<p>This module adopts a student-centred approach which encourages and facilitates the adoption of an independent, self-directed learning style. It will be delivered as a series of key note lectures and tutorials.</p> <p>Each lecture or tutorial will include explicit Aims and Learning Outcomes, explanation of Key Concepts, a guide to sources of both paper-based and electronic information. Lectures/tutorials will be delivered by experts in each particular topic.</p> <p>Communication between students and academics staff will be fostered using online facilities and a bulletin board.</p>

	<p>Scheduled learning includes lectures, and tutorials.</p> <p>Independent learning includes hours engaged with essential reading, assignment preparation and completion.</p>
Key Information Sets Information	Not applicable for level M programmes/modules
Reading Strategy	<p>At Masters level students are expected to demonstrate the ability to find information, assess its relevance and utilise it in their studies in an independent manner; however the programme team recognise that students entering the programme may be at different levels of the development of the skills required to undertake this successfully. Therefore module leaders will provide you with a starting point in terms of core readings and the lecture material will also give you a strong starting point. However it is in the area of further reading that you need to show the independence of skills and of knowledge development, so you will need to find the Further Readings yourself. However, the skills required to do this are covered during the early stages of the course, during induction week you will have a library induction session, in the Research Methods and Practical Skills module that you take during the first semester we will cover how to undertake a literature search and how to assess and use the material you find appropriately. The programme tutorials will provide opportunities for you to further develop these skills and to ask any questions that you have. Further support and guidance is available through the library which runs workshops that you can sign up to, and also has advice in its website.</p> <p>Module leaders will give you a clear indication of any essential reading, and point you towards the appropriate textbooks and journals for their discipline. This will usually be in the form of a reading list in the module guide; the indicative list on this module specification is as it states indicative as the relevant available books and journals can change regularly – and the module specification is a document written only once when a module is modified and can last for many years. So it is important that you refer to the reading list for your specific year group as the definitive document.</p> <p>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, and to the library catalogue. Many resources can be accessed remotely.</p>
Indicative Reading List	<p>Selected Texts – Current Editions of:</p> <ul style="list-style-type: none"> • Glencross, H., Ahmed, N. and Wang, Q. (eds) (2011) <i>Biomedical Science Practice: Experimental and Professional Skills</i>. Oxford: Oxford University Press • Ahmed, N. (2011) <i>Clinical Biochemistry</i>. Oxford: Oxford University Press • Moore, G., Knight G. and Blann, A. (2011) <i>Haematology</i> Oxford: Oxford University Press • Ford, M.(ed) (2011) <i>Medical Microbiology</i> Oxford: Oxford University Press • Hall, A. and Yates, A. (eds) (2011) <i>Immunology</i> Oxford: Oxford University Press • Orchard, G and Nation, B. (eds) (2011) <i>Histopathology</i> Oxford: Oxford University Press

- Shambayati, B. (ed) (2011) *Cytopathology* Oxford: Oxford University Press
- Knight, R. (ed) (2011) *Transfusion and Transplantation Science* Oxford: Oxford University Press
- Gibbs, R. and Heugh, S. (eds) (2011) *Biology of Disease* Oxford: Oxford University Press
- Christian, D.R. and Drilling, S. (2009) *Implementing Quality in Laboratory Policies and Processes Using Templates, Project Management, and Six Sigma*.Online: CRC Press

Web sites: (including but not limited to)

The National Center for Biotechnology Information (NCBI) advances science and health by providing access to biomedical and genomic information - <http://www.ncbi.nlm.nih.gov/pubmed>

The Institute of Biomedical Science (IBMS) - <http://www.ibms.org/>

<http://www.bized.co.uk/reference/studyskills/index.htm>

Health Professions Council - <http://www.hpc-uk.org/>

Human tissue authority - <http://www.hta.gov.uk/>

Medicines and Healthcare products Regulatory Agency - <http://www.mhra.gov.uk>

The Royal College of Pathologists' website - <http://www.rcpath.org/>

Part 3: Assessment

Assessment Strategy

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.

The coursework here is research critique on a current topic, related to those covered in the lecture series – this could be scientific, management or a combination of both. It is similar in style to a review article in a journal. The second part is an oral presentation with a strict set of criteria designed to give students the practice of preparing a presentation under restriction to mimic the skills needed for professional scientific presentations. These are highly relevant assessments for higher level science graduates to have undertaken, preparing them for future academic style writing in the professional lives.

The assessments are marked to the BBAS standard PG marking criteria, and students are full briefed on the assessment both in writing and through a tutorial session.

Identify final assessment component and element	Component A1	
% weighting between components A and B (Standard modules only)	A:	B:
	50	50
First Sit		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. Oral Presentation (15 minutes including defence)	100	
Component B Description of each element	Element weighting (as % of component)	
1. Research Critique (2500 words)	100	

Resit (further attendance at taught classes is not required)		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. Written version of oral presentation (1000 words plus the slides)	100	
Component B Description of each element	Element weighting (as % of component)	
1. Research critique (2500 words)	100	
<p>If a student is permitted a retake of the module under the University Regulations and Procedures, the assessment will be that indicated by the Module Description at the time that retake commences.</p>		