



MODULE SPECIFICATION

Part 1: Information			
Module Title	Current Issues in Biomedical Science		
Module Code	USSKL3-30-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>Educational Aims: See Learning Outcomes</p> <p>Outline Syllabus: 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. The scientific topics will be related to current priority areas of government departments and agencies and funding bodies such 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> <ol style="list-style-type: none"> 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

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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).

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.

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.

Teaching and Learning Methods: 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.

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. Communication between students and academics staff will be fostered using online facilities and a bulletin board.

Scheduled learning includes lectures, and tutorials.

Independent learning includes hours engaged with essential reading, assignment preparation and completion.

Part 3: Assessment

The MSc BMS Programme has a programme level assessment strategy (see Programme Specification appendix 1). 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.

First Sit Components	Final Assessment	Element weighting	Description
Presentation - Component A	✓	50 %	Oral presentation (15 minutes including defence)
Written Assignment - Component B		50 %	Research critique (2500 words)

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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>Module Learning Outcomes</th> <th>Reference</th> </tr> </thead> <tbody> <tr> <td>Critically appraise current literature on the nature of disease processes in terms of molecular, biochemical, immunological, microbiological and pharmacological interactions</td> <td>MO1</td> </tr> <tr> <td>Discuss critically the role of research in furthering knowledge and understanding of physiology pathophysiology, and treatment of a variety of conditions</td> <td>MO2</td> </tr> <tr> <td>Discuss the principles of a variety of analytical techniques used in hospital laboratories</td> <td>MO3</td> </tr> <tr> <td>Compare the relative advantages and disadvantages of different techniques</td> <td>MO4</td> </tr> <tr> <td>Interpret critically research results based on these techniques in the published literature</td> <td>MO5</td> </tr> <tr> <td>Develop further skills in written and oral communication relevant to biology of disease</td> <td>MO6</td> </tr> <tr> <td>Show an awareness of the political and social factors that impact on the biomedical science research and diagnostics</td> <td>MO7</td> </tr> <tr> <td>Show an awareness of management issues that affect biomedical science research and diagnostic laboratories</td> <td>MO8</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Critically appraise current literature on the nature of disease processes in terms of molecular, biochemical, immunological, microbiological and pharmacological interactions	MO1	Discuss critically the role of research in furthering knowledge and understanding of physiology pathophysiology, and treatment of a variety of conditions	MO2	Discuss the principles of a variety of analytical techniques used in hospital laboratories	MO3	Compare the relative advantages and disadvantages of different techniques	MO4	Interpret critically research results based on these techniques in the published literature	MO5	Develop further skills in written and oral communication relevant to biology of disease	MO6	Show an awareness of the political and social factors that impact on the biomedical science research and diagnostics	MO7	Show an awareness of management issues that affect biomedical science research and diagnostic laboratories	MO8
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Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p>https://uwe.rl.talis.com/modules/usskl3-30-m.html</p>																		

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Biomedical Science [Sep][FT][Frenchay][1yr] MSc 2020-21

Biomedical Science (Medical Microbiology) [Sep][FT][Frenchay][1yr] MSc 2020-21

Biomedical Science (Medical Genetics) [Sep][FT][Frenchay][1yr] MSc 2020-21

Biomedical Science (Immunology) [Sep][FT][Frenchay][1yr] MSc 2020-21

Biomedical Science (Haematology) [Sep][FT][Frenchay][1yr] MSc 2020-21

Biomedical Science (Clinical Biochemistry) [Sep][FT][Frenchay][1yr] MSc 2020-21

Biomedical Science (Cellular Pathology) [Sep][FT][Frenchay][1yr] MSc 2020-21