



MODULE SPECIFICATION

Part 1: Information			
Module Title	Clinical Biochemistry		
Module Code	USSJ6E-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: Study of biochemistry at undergraduate level</p> <p>Educational Aims: See Learning Outcomes</p> <p>Outline Syllabus: Philosophy of clinical biochemistry/clinical utility (3 hours):</p> <p>An area which under pins all of current diagnostic clinical biochemistry, discussing the value of biochemical and molecular biological tests in the investigation of disease. Introducing concepts such as sensitivity, specificity, predictive values and population selection.</p> <p>Enzymes (3 hours):</p> <p>Examples of specific clinically relevant enzymes. Tissue damage and relationship to diagnostic use of enzymes and isoenzymes.</p> <p>Liver function/disease (6 hours):</p> <p>Review of fundamental liver biochemistry. Causes of acute and chronic liver disease. Liver function tests. Differential diagnosis of jaundice and other disorders.</p>

STUDENT AND ACADEMIC SERVICES

Disorders of detoxification and excretory mechanisms – renal (6 hours):

Review of normal kidney functions. Tests of the glomerular function – renal clearance, GFR, serum creatinine and urea determinations. Outline of tests of tubular function. Renal calculi and their investigations.

Acid-base disorders(6 hours):

Review of fundamental acid-base concepts. Metabolic and respiratory causes and clinical effects of acidosis and alkalosis. Disturbances to oxygen transport. Assessment of acid-base status; diagnosis and management of acid-base disorders.

Endocrinology disorders (12 hours):

This will discuss the disorders of the hypothalamic-pituitary-target organ axis, with particular reference to the thyroid and adrenal glands. Other disorders of endocrine control will be studied which involve other systems of the body, for example: abnormalities in calcium metabolism; abnormalities in control of electrolyte and fluid balance. Furthermore, case studies will be used to discuss disorders of gonad function.

Toxicology and drug therapy (6 hours):

Treatment of cancer using cytotoxic drugs highlighting factors which affect treatment with chemical agents.

Plasma proteins in disease (6 hours):

The role of the plasma proteins in the investigation of disease. Typical topics studied include: clinical enzymology and applications in the diagnosis of coronary heart disease; paraproteins as an example of the use of proteins as tumour markers.

Molecular genetics in disease (3 hours):

This topic introduces the role of molecular genetics in the investigation and understanding of disease processes such as in-born-errors of metabolism and cancer.

Teaching and Learning Methods: This module will be delivered in discrete sections, following the subject areas outlined in the syllabus. Each topic area will be introduced with underpinning lectures followed by a series of tutorials where extensive use of case studies will be made. The students will have to prepare pre-set questions on each case-study in order to discuss the case in the tutorial session. Further questions will be given to aid student centred learning. Particular areas of the syllabus will be further developed in additional tutorials allowing the students to further explore these areas and to critically review current research in these areas. 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.

Lectures: This module will be delivered in discrete sections, following the subject areas outlined in the syllabus. Each topic area will be introduced with underpinning lectures followed by a series of tutorials where extensive use of case studies will be made.

Tutorials: Students will be supplied with a case study prior to the tutorial session. Tutorials will use indicative lists of questions to guide student learning. It is expected that the case study will be completed before the tutorial. Therefore, the tutorial will engage active discussion on individual and group findings. Case studies will be part of the final assessment and therefore attendance at tutorials is strongly encouraged. (1 x 1.5 hour sessions with smaller groups).

STUDENT AND ACADEMIC SERVICES

Additional Tutorials for MSc students. A further 1 hour tutorial session will be given to address extended reading and assessment (every week), in support of each subject area.

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.

This module has coursework is designed to test the ability of students to express their chosen specialist discipline in both written form and in oral form.

The coursework essay is similar in style to a review article in a journal, and the presentation is designed to replicate those given at conferences. Both are highly relevant assessments for higher level science graduates to have undertaken, preparing them for future academic style writing and presentation in their professional lives.

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. The exam will be an online exam with a 24 hour submission window.

First Sit Components	Final Assessment	Element weighting	Description
Set Exercise - Component B		25 %	Data Interpretation Exercise (2000 words)
Presentation - Component B		25 %	Scientific poster presentation (20 minutes including oral defence)
Online Assignment - Component A	✓	50 %	Online examination (24 hours)
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>Demonstrate an in-depth understanding of the pathophysiology of selected biochemical diseases</td> <td>MO1</td> </tr> <tr> <td>Demonstrate an understanding of the role of research and technology in the advancement of the understanding of disease and diagnosis of disease</td> <td>MO2</td> </tr> <tr> <td>Show an appreciation of the nature and significance of clinical biochemistry in its role in the diagnostic process</td> <td>MO3</td> </tr> <tr> <td>Critically review research in the field of clinical biochemistry</td> <td>MO4</td> </tr> </tbody> </table>	Module Learning Outcomes	Reference	Demonstrate an in-depth understanding of the pathophysiology of selected biochemical diseases	MO1	Demonstrate an understanding of the role of research and technology in the advancement of the understanding of disease and diagnosis of disease	MO2	Show an appreciation of the nature and significance of clinical biochemistry in its role in the diagnostic process	MO3	Critically review research in the field of clinical biochemistry	MO4						
Module Learning Outcomes	Reference																
Demonstrate an in-depth understanding of the pathophysiology of selected biochemical diseases	MO1																
Demonstrate an understanding of the role of research and technology in the advancement of the understanding of disease and diagnosis of disease	MO2																
Show an appreciation of the nature and significance of clinical biochemistry in its role in the diagnostic process	MO3																
Critically review research in the field of clinical biochemistry	MO4																
Contact Hours	<table border="1"> <thead> <tr> <th colspan="2" style="text-align: left;">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: right;">Total Independent Study Hours:</td> <td style="text-align: center;">234</td> </tr> <tr> <th colspan="2" style="text-align: left;">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: right;">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/ussj6e-30-m.html</p>																

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

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

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