MODULE SPECIFICATION

Part 1: Information			
Module Title	Studies in the Biology of Disease		
Module Code	USSKAT-30-2	Level	Level 5
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	Infection and Disease 2020-21		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
Overview: Studies in the Biology of Disease is a pre-requisite for and underpins every IBMS core module at Level 3. Successful completion of this module is mandatory for IBMS accreditation. **Educational Aims:** See Learning Outcomes. **Outline Syllabus:** Indicative content includes: Homeostasis and malignant disease: Central importance of homeostasis, mechanisms of control and the consequences of failure. Concepts of disease and normality, reference ranges Mechanisms of cancer development at a cellular level, haematological disorders and diagnosis and treatment Cellular Pathology: Microscopic analysis of cells and tissues. Preparative processes for microscopical analysis of tissues and cells. Cell and tissue stabilisation. Histological and cytological features of the disease state. Clinical laboratory applications of cellular pathology; its role in diagnosis, prognosis and prediction. Clinical Biochemistry: diagnosis, screening and monitoring of disease through qualitative and quantitative evaluation. Diagnosis of Liver, Cardiac diseases and endocrine disorders. Drug toxicity and drug monitoring.

Haematology and Transfusion Science: haematology of normal and disease states, haemoglobinopathies and thalassaemias, anaemias, leukaemias and thrombosis. Laboratory investigation of disease states. The role of the laboratory in monitoring of therapy. Immunohaematology; including identification of blood group antigens, methods for antibody detection and compatibility testing and safety aspects of blood transfusion.

Medical Microbiology: relationship between host and microorganisms, mechanisms of pathogenicity, transmission and response to infection, factors influencing susceptibility, epidemiology, laboratory investigation of infectious diseases and vaccination.

Immunology: structure and function of the immune system, innate and acquired immunity, inflammation, tolerance. Structure and function of antibodies, immunoassay and radioimmunoassay, ELISA, SDS-PAGE and Western blotting. Autoimmunity and disease states. Immunodeficiency and AIDS. Transplantation immunology, cancer immunology and related immunotherapy.

Professional/Generic Aspects: Requirements for registration, the HPC and IBMS. Standards that govern pathology laboratory practice, health & safety, ethics. Quality assurance and quality control, sources of error.

Medical Genetics: introduction to key technologies used in the clinical assessment of disease, and underlying genetic causes of selected disorders.

Teaching and Learning Methods: Students will carry out case studies selected to illustrate the multifactorial and integrated nature of disease and its laboratory investigation.

Part 3: Assessment

The aim of the case studies is to introduce students to the investigative nature of biomedical science and to show how the individual disciplines integrate and aid the differential diagnosis. The task is to interpret the data utilizing information learned during the module backed up by information gleaned from reading around the topic to make a diagnosis and answer specific questions set.

The three elements of Component B are assessments of laboratory session write-ups, one per Semester (1000-words), and engagement activities (online quizzes associated with the practical sessions). Students will need to think about the importance of the presenting symptoms, the initial results obtained by the GP and any further investigations. Students will need to think carefully on the differential diagnosis, how certain results rule out potential diagnosis or narrow the potential possibilities. Having made a diagnosis, they should think about potential treatment options. These will be articulated in written format within Component B (elements 1 & 2). Two of the six case study-based practical sessions will be assessed but the exact sessions will not be disclosed to the students beforehand.

This will enable the students to demonstrate data interpretation and good laboratory practice, whilst providing an opportunity to practice case study-based learning and technical skills. Students are prepared for these assessments with a lectorial where they are presented with examples of previous answers to reflect on the best approach. Patient and end-user involvement has enhanced learning experience and be facilitated through integration into the case study-based laboratory sessions.

Component A is an online exam with a 24 hour submission window. The exam will contain questions relating to the course material, providing students with an opportunity to demonstrate both their knowledge on a broad range of topics, and more in-depth knowledge.

Formative feedback is available to students throughout the module through group discussion at the end of practical classes and lectures. Students are provided with formative feed-forward for their exam through a revision and exam preparation session prior to the exam and through the extensive support materials supplied through Blackboard.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Examination (Online) - Component A	✓	50 %	Online Examination (24 hours)
Online Assignment - Component B		10 %	Practical preparation quizzes
Case Study - Component B		20 %	Data analysis case-study write-up 1 - (1000 words)
Case Study - Component B		20 %	Data analysis and case-study write-up 2 - 1000 words
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Examination (Online) - Component A	✓	50 %	Online Examination (24 hours)
Online Assignment - Component B		10 %	Practical preparation quizzes
Case Study - Component B		20 %	Data analysis and case-study write-up 1 - (1000 words)
Case Study - Component B		20 %	Data analysis and case-study write-up 2 - 1000 words

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	**Reference**
Review the mechanisms responsible for disease and disorders in the human body	MO1
Demonstrate knowledge of the pathophysiology, investigation and diagnosis of selected diseases	MO2
Develop the ability to integrate the specialist areas of biomedical science into the context of a coherent case study approach	MO3
Gain experience of clinical practice and data analysis through engagement with practical sessions within the context of a clinical case study	MO4

Contact Hours

Independent Study Hours:	
Independent study/self-guided study	255
Total Independent Study Hours:	255
Scheduled Learning and Teaching Hours:	
Face-to-face learning	45

	Total Scheduled Learning and Teaching Hours:	45
	Hours to be allocated	300
	Allocated Hours	300
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/modules/usskat-30-2.html	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: Biomedical Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19 Biomedical Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19 Healthcare Science (Genetic Science) {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19 Healthcare Science (Tissue Science) {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19 Healthcare Science (Infection Science) {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19 Healthcare Science (Blood Science) {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19 Biomedical Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2018-19 Biomedical Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2018-19