University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Studies in the Biology of Disease					
Module Code	USSKAT-30-2		Level	2	Version	6
Owning Faculty	Health & Applied Sciences		Field	BBAS		
Contributes towards	BSc (Hons) Biomedical Science BSc (Hons) Healthcare Science suite of awards					
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type		
Pre-requisites			Co- requisites			
Excluded Combinations	None		Module Entry requirements			
Valid From	September 2014		Valid to	September 2020		

CAP Approval Date	28/03/2014

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module students will be able to: • Review the mechanisms responsible for disease and disorders in the human body • (A & B) • Demonstrate knowledge of the pathophysiology, investigation and diagnosis of selected diseases (A & B) • Develop the ability to integrate the specialist areas of biomedical science into the context of a coherent case study approach (Component A and Component B, element 1) • Perform appropriate experiments and analyse data in practical sessions within the context of a clinical case study (Component B, element 2).
Syllabus Outline	Students will carry out case studies selected to illustrate the multifactorial and integrated nature of disease and its laboratory investigation. 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.
Contact Hours	Lectures Laboratory sessions The contact hours (72) are distributed as follows: 19 lectures @ 3 hours/lecture = 57 hours 5 laboratory sessions @ 3 hours/practical = 15 hours
Teaching and Learning Methods	**Scheduled learning** will be a mixture of key-note lectures, case study-led laboratory sessions, and student-centred learning. The lectures will focus on organs/systems of the body, for example the kidney, liver, GI tract and cardiovascular system and the biology of associated disorders from the viewpoint of the various biomedical disciplines. Students will be supported through a core textbook and following guided reading and self-directed tutorials. These will be delivered online through Blackboard. Part-time students will therefore be fully supported whilst off-site and will have direct contact with staff through email access. In addition, laboratory sessions will focus on highlighting important issues and the integrated nature of the topics. The assessments will support the investigative nature of the subject and further integrate the subjects in a case study format. **Independent learning:** In addition to the taught material it is essential that students read around the topic to further their understanding and to prepare for the case study assignments. This includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below. **Placement learning**: may include a practice placement, other placement or year abroad.
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

Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours
300	72	228	0	300

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

Written Exam: Unseen written exam, open book written exam, In-class test
Coursework: Written assignment or essay, report, dissertation, portfolio, project
Practical Exam: Oral Assessment and/or presentation, practical skills assessment, practical exam

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	50%
Coursework assessment percentage	25%
Practical exam assessment percentage	25%
	100%

Reading Strategy

All students are encouraged to read widely using the library catalogue, a variety of bibliographic and full text databases and Internet resources. Many resources can be accessed remotely. Guidance to some key authors and journal titles available through the Library will be given in the Module Guide and updated annually. Assignment reference lists are expected to reflect the range of reading carried out.

Access and Skills
Students are expected to be able to identify and retrieve appropriate reading. This module offers an opportunity to further develop information skills introduced at Level 1. Students will be given the opportunity to attend the GDP sessions on selection of appropriate databases and search skills. Additional support is available through the Library Services web pages, including interactive tutorials on finding books and journals, evaluating information and referencing. Sign up workshops are also offered by the Library.

Indicative Reading List

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. CURRENT advice on additional reading will be available via the module guide or Blackboard pages.

The most appropriate text is the current edition of
• Ahmed,N. Dawson, Smith & Wood. *Biology of Disease*. New York: Taylor & Francis.

The following text is highly recommended for professional aspects.
• Pitt, S.J. and Cunningham, J.M.. *An Introduction to Biomedical Science in Professional and Clinical Practice*. Oxford: Wiley-Blackwell.

	Other good general texts are the current editions of: • Lakhani,S.R. Dilly,S.A., Finlayson, C.J. & Dogan. *Basic Pathology*. London: Hodder Arnold. • Phillips,P., Murray, P., & Kirk, P. *The Biology of Disease*. Oxford: Blackwell Science. • Azer, S.A. *Core Clinical Cases in Basic Biomedical Science*. London: Hodder Arnold. Other suggested reading: • Goldsby, R.A. et al. *Kuby Immunology*. New York: WH Freeman and Co. • Roitt,I. and Rabson,A. *Really Essential Medical Immunology*. Oxford: Blackwell • Hannigan, B.M., Moore C.B.T. & Quinn D.G. *Immunology.* Bloxham: Scion Publishing Ltd • Pallister, C.J & Watson M. *Haematology.* Bloxham: Scion Publishing Ltd • Luxton, R,W. *Clinical Chemistry*. Bloxham: Scion Publishing Ltd • Cook, J. *Cellular Pathology*. Bloxham:Scion Publishing Ltd • Overfield, J., Dowson, M. & Hamer, D. *Transfusion Science*. Bloxham: Scion Publishing

Part 3: Assessment	
Assessment Strategy	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. 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 of 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. The first element of Component B is a Case Study supplied with questions. Students are prepared for this assignment with a lectorial where they are presented with examples of previous answers to reflect on the best approach. The second element of Component B is assessment of laboratory session write-ups in the provided notebook. Two of the five 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. The controlled component is a written exam. The exam will be 2 hours duration which is consistent with the Department's assessment strategy for Level 2 modules. For this assessment the case study will be provided in advance of the exam to allow students to prepare. The questions relating to the case study will provide students with an opportunity to demonstrate both their knowledge on a broad range of topics, and more in-depth knowledge though a selection of short and medium length questions. This assessment will test a range of the learning outcomes and will provide a valuable learning experience through recalling and demonstrating knowledge which will be of benefit when progressing to final year modules. 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.

Identify final assessment component and element		
	A:	**B**:

	50	**50**
First Sit		
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**	
1. Examined Case Study (3 hours)	100	
Component B **Description of each element**	**Element weighting** **(as % of component)**	
1. Case Study	50	
2. Laboratory session write-up	50	

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Examined Case Study (3 hours)	100
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Case Study	50
2. Data analysis write-up	50
If a student is permitted an **EXCEPTIONAL RETAKE** of the module the assessment will be that indicated by the Module Description at the time that retake commences.	