

CORPORATE AND ACADEMIC SERVICES




MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Human Biological Systems				
Module Code	USSJRU-30-1	Level	1	Version	1
Owning Faculty	Health & Applied Sciences	Field	BBAS		
Contributes towards	BSc Forensic Science, BSc Forensic Science (Biology) BSc Forensic Science (Chemistry)				
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard
Pre-requisites	None		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements	N/A	
Valid From	September 2014		Valid to	September 2020	

CAP Approval Date	28/03/2014
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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"> describe the structure and function of the main systems of the human body (assessed in Component A); describe the coordinated biological processes which support human life; and at a basic level, the effects of hormones/drugs on human biological processes (assessed in Component A); demonstrate an understanding of the relationship between tissue structure and function in the human body (assessed in Component A); describe the structure of biological membranes and explain key concepts in membrane transport (assessed in Component A); describe the ultrastructure and function of eukaryotic cells, and their organelles, in contrast to prokaryotic cells (assessed in Component A); describe the key properties and functions of the principal cellular macromolecules and understand how they are synthesised and metabolised (assessed in Component A and B1); understand the organisation, structure, regulation and expression of the genetic material of the cell (assessed in Component A and B1); explain how genetic material can be altered by natural and manipulated means (assessed in Component A);

	<ul style="list-style-type: none"> • describe the modes of inheritance of characteristics and explain the mechanisms of evolutionary change (assessed in Component A and B1); • - demonstrate practical skills in data observation, collection, handling and report writing (assessed in Component B2).
Syllabus Outline	<p>This module examines the fundamentals of human biology particularly the molecular events that occur at the cellular level and how these affect the function of tissues and organs.</p> <ul style="list-style-type: none"> • An examination of the organisation of the human body, including appreciation of the location, structure and function of the major organs and systems and the contribution of cells and tissues to the whole. • Homeostasis and biological processes which support life. • Communication between cells/tissues/organs: including an introduction to signalling and receptors, endocrine control, nervous control and synapses. • Structure and function of cell membranes. • Structure and function of generalised prokaryotic and eukaryotic cells. • Amino acids and proteins: properties of amino acids; primary, secondary, tertiary and quaternary structure of proteins. • Carbohydrates. Monosaccharides. Glycosidic bonds. Structures of some storage and structural polysaccharides. • Lipids. Fatty acids, glycerol, sterols as components of lipid structure. Phospholipids and their role in membrane structure. • General metabolic overview and an introduction to the biochemical processes of the cell, with illustrative examples of catabolic and anabolic pathways. • The genetic material and genomes. DNA photocopying - the replication of DNA. Decoding the messages within the genes - gene expression: transcription, RNA processing and translation. Altering the genetic material - mutation, recombination and gene cloning. • Mutations, genetic variation and the idea of selection pressure, introduction to Hardy-Weinberg equilibrium. • Gene inheritance patterns in humans and introduction to population genetics.
Contact Hours	<p>The contact hours (72) are distributed as follows:</p> <p>31 hours interactive lectures 20 hours practicals 21 hours workshops/seminars</p>
Teaching and Learning Methods	<p>The theoretical material will be delivered mostly as lectures reinforced by directed reading, practical activities and directed tasks. The practical work will support and extend lecture material, and will include simulation workshops and data interpretation. Tutorials and learning support will be offered at key times. Online resources will support the module. It will provide access to course documents, sample exam questions and other learning materials.</p> <p>Scheduled learning includes lectorials and laboratory practical classes.</p> <p>Independent learning includes hours engaged with essential reading, assignment preparation and completion, etc. These sessions constitute an average time per level as indicated in the table below.</p>

Key Information Sets Information	<p>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</p> <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="3">Number of credits for this module</td><td></td><td>30</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Hours to be allocated</td><td>Scheduled learning and teaching study hours</td><td>Independent study hours</td><td>Placement study hours</td><td>Allocated Hours</td><td></td></tr><tr><td>300</td><td>72</td><td>228</td><td>0</td><td>300</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <p>The table below indicates as a percentage the total assessment of the module which constitutes a -</p> <p>Written Exam: Unseen written exam, Coursework: Practical report and data interpretation</p> <table><tr><td colspan="2">Total assessment of the module:</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td colspan="2">Written exam assessment percentage</td><td></td><td>40%</td></tr><tr><td colspan="2">Coursework assessment percentage</td><td></td><td>60%</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td colspan="2"></td><td></td><td>100%</td></tr></table>							Number of credits for this module				30								Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours		300	72	228	0	300														Total assessment of the module:								Written exam assessment percentage			40%	Coursework assessment percentage			60%								100%
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Reading Strategy	<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. Students will be presented with opportunities within the curriculum to develop their information retrieval and evaluation skills in order to identify such resources effectively.</p> <p>Any essential reading will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set text, be given or sold a print study pack or be referred to texts that are available electronically, etc. This guidance will be available either in the module handbook, via the module information on Blackboard or through any other vehicle deemed appropriate by the module/programme leaders.</p> <p>If further reading is expected, this will be indicated clearly. If specific texts are listed, a clear indication will be given regarding how to access them and, if appropriate, students will be given guidance on how to identify relevant sources for themselves, e.g. through use of bibliographical databases.</p> <p>A detailed reading list will be made available through relevant channels, e.g. module handbooks, Blackboard, etc.</p>																																																																		
Indicative Reading List	<p><i>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.</i></p>																																																																		

	<p>However, as indicated above, CURRENT advice on readings will be available via other more frequently updated mechanisms.</p> <p><u>Indicative Reading List:</u></p> <p>Most recent edition of:</p> <p>Alberts, B. <i>et al.</i>, <i>Essential Cell Biology</i>, New York; London: Garland Science</p> <p>Godfrey, H. <i>Understanding The Human Body</i>. Edinburgh; New York: Churchill Livingstone.</p> <p>Nelson, D. and Cox, M. <i>Lehinger Principles of Biochemistry</i>. New York: W.H. Freeman.</p> <p>Russell, P.J. <i>iGenetics A Molecular Approach</i>. New York: Pearson.</p> <p>Stanfield, C.L. <i>Principles of Human Physiology</i>. London: Pearson Education Ltd.</p> <p>Silverthorn, D. <i>Human Physiology an Integrated Approach</i>. London: Pearson Education Ltd.</p> <p>Tortora, G.J. and Derrickson, B. <i>Essentials of Anatomy and Physiology...</i> Hoboken, NJ: Wiley</p>
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Part 3: Assessment	
Assessment Strategy	<p>The Assessment Strategy has been designed to support and enhance the development of both subject-based and employability skills, whilst ensuring that the modules Learning Outcomes are attained, as described below.</p> <p>The controlled component is a written exam. The exams will be 1.5 hours duration which is consistent with the Department's assessment strategy for Level 1 modules. This assessment will provide students with an opportunity to demonstrate both their knowledge on a broad range of topics through a series of multiple choice questions, and more in-depth knowledge through a selection of 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 second year modules.</p> <p>The coursework comprises 2 elements. The first is a Practical Portfolio which is based on the laboratory practical series. This portfolio requires the detailed recording of data followed by analysis, interpretation and discussion of these data. The recording and analysis of laboratory data a vital skill for forensic science students; consequently this assessment can be described as an assessment to enhance employability and learning.</p> <p>The second element, data interpretation, provides the opportunity for the student to complete an in-depth analysis of the use biological data.</p> <p>Opportunities for formative assessment and feedback are built into the workshop and seminar series, through discussion of current research, the evaluation of research methods, and review of past exam papers.</p> <p>All work is marked in line with the Department's Generic Assessment Criteria and conforms to university policies for the setting, collection, marking and return of student work. Assessments are described in the Module handbook that is supplied at the start of module</p> <p>Formative feedback is available to students throughout the module through group discussions, practical classes and in tutorials. Students are provided</p>

	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.
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Identify final assessment component and element		
% weighting between components A and B (Standard modules only)	A:	B:
	40%	60%
First Sit		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. Written Exam (1.5 hours)	50%	
2. Written Exam (1.5 hours)	50%	
Component B Description of each element	Element weighting (as % of component)	
1. Practical Portfolio and clicker tests	60%	
2. Data interpretation	40%	

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) Description of each element	Element weighting (as % of component)
1. Written exam (3 hours)	100%
Component B Description of each element	Element weighting (as % of component)
1. Portfolio - practical report, data interpretation and written task	100%
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.	