University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Biology in Practice					
Module Code	USSKCJ-30-0		Level	0	Version	1
Owning Faculty	Health and Applied Sciences		Field	Biological, Biomedical and Analytical Sciences		
Contributes towards	Science Foundation					
UWE Credit Rating	30	ECTS Credit Rating		Module Type	Standard	
Pre-requisites	None		Co- requisites	None		
Excluded Combinations			Module Entry requirements	None		
Valid From	September 2014		Valid to	September 2020		

CAP Approval Date	29/05/2014

Part 2: Learning and Teaching	
Learning Outcomes (and corresponding Assessment component)	On successful completion of this module students will be able to: • describe the principles of organism taxonomy and classification of organisms into Kingdoms, Phyla, genera, species and sub-species groups (A1, B1)); • demonstrate a knowledge of the criteria of life and the cell as the unit of life, together with its component organelles (A1); • describe outlines of important metabolic pathways (A1, A2, B1); • describe aspects of comparative organism physiology by examination of form and function (A1); • show an understanding of the principles and mechanisms of genetics and evolution and biological energetics (A1, A2, B1); • describe ecosystem structure and function and human impact on natural ecosystems (A2); • understand how knowledge of biology can be utilised in application areas including biomedical, forensic and environmental science (B1, B2).

	• conduct practical laboratory methods used in biological study and interpret and report their observations (B2); • use library systems and information retrieval for biological study (B1).
Syllabus Outline	Introduction to: Central themes in biology. The criteria of life, the cell as the unit of life and the establishment and use of the genetic blueprint. Biomolecules as building blocks of life. Metabolic biochemistry with an emphasis on catabolism and energy capture. Membrane structure and function. Comparative animal physiology. Comparative aspects of whole organism physiology. Evolution. Principles of taxonomy and classification. Plants. Ecology. Ecosystems and the stresses upon the environment. Microbiology and biotechnology.
Contact Hours	• This module will run over 2 semesters, with lecture (2 h lecture)- and tutorial (2 x 1h tutorial)-weeks alternating with practical (3 h) weeks. • Total contact hours is therefore 72 for this 30-credit module
Teaching and Learning Methods	**Scheduled Learning** • Scheduled learning will include formal lectures, laboratory classes and associated group tutorial exercises, clicker tests and discussions. Practical classes in the laboratory will cover the principles of microbiological study including growth, staining and identification of various microorganisms, areas of applied biology including microbial-derived enzyme isolation and testing, and DNA isolation and staining. Practical investigations will be facilitated with assistance from post-graduate demonstrators, and will be assessed by marking of completed laboratory handbooks. • Student learning will be supported by electronic teaching materials posted on the University's E-Learning Environment, Blackboard and the use of hand-out material in lectures and tutorials. **Independent Learning** Students will be expected to spend a significant amount of time in private study and in preparing assignments, consulting relevant text books, journal articles and recommended web sites. Independent study will make up the total number of hours of study for this module to the notional 300 hours.

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 interested in applying for. **Key Information Set - Module data** *Number of credits for this module*: 30 Hours to be allocated: 300 — Scheduled learning and teaching study hours: 72 — Independent study hours: 228 — Placement study hours: 0 — Allocated Hours: 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 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: 40% Coursework assessment percentage: 60% Practical exam assessment percentage: 0% 100%
Reading Strategy	All students will be encouraged to make full use of the print and electronic resources available to them through membership of the library. 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. 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. 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 bibliographic databases.
Indicative Reading List	Either of the following books is recommended for purchase by students embarking on the module. These both cover the major aspects of the course: Reece, J.B., Urry, L.A., Cain, M.L., Wasserman, S.A., Minorsky, P.V. and Jackson,

	R.B. (2001) *Campbell BIOLOGY*. 9th ed. San Fransisco: Pearson Education Inc. (Pearson Benjamin Cummings), Morris, J., Hartl, D., Knoll, A. and Lue, R. (2013) *Biology How Life Works* New York: W.H. Freeman and Company. Students are also advised to consult related texts on Biology and more specific aspects of Biology. These include: Pollard, T.D. (2008) *Cell Biology.* Philadelphia, PA, USA: Saunders/Elsevier. Reece, J.B. (2012) *Campbell Biology: concepts & connections*. Boston, MA, USA: Benjamin Cummings, Smith, J.E. (2009) *Biotechnology*. Cambridge: Cambridge University Press. Sutton, J. (1998) *Biology* Basingstoke: Macmillan. Tortora, G.J. (2004) *Microbiology: an introduction*. San Francisco, CA, USA/London: Benjamin Cummings, Additional useful texts can be accessed in the UWE library.

Part 3: Assessment	
Assessment Strategy	Students will undertake laboratory experiments designed to learn basic biological and microbiological laboratory investigations, and will be assessed on the quality of their laboratory reports which will reflect their ability to perform the techniques involves, and to record and interpret their results and observations. Students will be required to write an essay towards the end of the first semester, which is on a set topic that is related to their lecture material, and which is supplemented by tutorial slides and discussion. The essay is designed to assess the students' knowledge acquired during lectures and tutorials, but also from their own independent learning. The two examinations (one for each semester) under controlled conditions will assess the students' knowledge acquired during lectures, tutorials and practical sessions, in addition to their own independent learning.

Identify final assessment component and element		
% weighting between components A and B (Standard modules only)	**A:** **40**	**B**: **60**
First Sit		
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**	
1. EX1 Examination (1.5 Hours, Semester 1)	1	
2. EX2 Examination (1.5 Hours, Semester 2)	1	
Component B **Description of each element**	**Element weighting** **(as % of component)**	
1. CW1 Essay	1	
2. CW2 Practical Portfolio	1	

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. EX3 Examination (3 Hours)	1
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. CW3 Extended Case Study Essay	1
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.	