University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Wildlife Ecology					
Module Code	USSK5H-30-2		Level	1	Version	1
Owning Faculty	Health & Life Sciences		Field	Department of Biological, Biomedical and Analytical Sciences		
Contributes towards	BSc Wildlife Ecology and Conservation Science BSc Biological Sciences					
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	standard	
Pre-requisites	USSK5C-30-1 Life on Earth		Co- requisites	none		
Excluded Combinations	none		Module Entry requirements	If offered as CPD or stand alone		
Valid From	September 2013		Valid to	September 2019		

CAP Approval Date	19th June 2013

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module students will be able to: • comprehend the requirements for efficient photosynthesis and the mechanisms of nutrient acquisition by plants (assessed in Component B1 & A); • discuss how plants respond to selected external stimuli (assessed in Component A); • compare the energetic and metabolic requirements of animals in different environments (assessed in Component B1 & A); • discuss the physiological and ecological strategies adopted by animals living in different ecosystems (assessed in Component A); • discuss the common underlining principles that determine animal behaviour and describe the importance of principles of behavioural ecology to survival (assessed in Component A); • undertake practical work to record scientific data in the field or laboratory, and present, analyse and interpret these data (assessed in Component B1& B2).

	• demonstrate expertise in the collection of ecological data and the identification of organisms (assessed in Component B2)
Syllabus Outline	This module examines how plants and animals interact with each other and their environment. ***Plants and the environment*** **Photosynthesis.** The light reactions of photosynthesis and energising the biosphere. Adaptations of basic C3 photosynthesis to extreme environments, e.g. C4 photosynthesis and Crassulacean Acid Metabolism. Plant growth in increasing atmospheric CO_2 concentrations. **Nutrient acquisition by plants.** Plant growth in mineral-deficient environments, e.g. insectivorous plants, parasitic plants. The role of symbioses with nitrogen-fixing microbes. The importance of plant nutrition in supplying mineral nutrients to the biosphere. The mechanism of selective nutrient accumulation. The importance of anthropogenic nutrient enrichment to environmental change. **Stress biology and responses in plants.** Introduction to stress biology. Plant growth in a changing environment. Plant responses to pests and disease. Plants and changing temperature and water regimes. ***Animals and the environment*** **Energy & metabolism.** The importance of warmth and food to animal survival. Metabolic rate and how it varies with body size. The physiological and behavioural adaptations that allow animals to survive low temperatures. The role of hibernation and torpor as energy-saving strategies. **Temperature regulation**. Physiological and behavioural mechanisms that are used by invertebrates and vertebrate animals to control and maintain their body temperature. The advantages and disadvantages of endothermy and exothermy. Staying alive in hot environments. Regulate body temperature and conserving water. **Locomotion.** The efficiency of locomotion. The problems of swimming in water and flying in air. Locomotion on land - climbing trees and running on open plains. **Reproductive strategies.** The range of different strategies used by animals to reproduce successfully. Behaviour that helps ensure survival of their offspring. To brood or broadcast. *R-selected* and *K*-selected reproductive strategies adopted by different vertebrates. **Animal behaviour.** Communication and signals. Biological Rhythms, circadian and circannual cycles. Behavioural Ecology: habitat selection; cost benefit approaches – optimal foraging theory; sexual selection; social behaviour – altruistic behaviour & kin selection. ***Biological interactions****.* The interactions of wildlife within contrasting ecosystems e.g. temperate freshwater systems; tropical rain forests; coral reef systems. Foodwebs, co-existing, symbioses, resource partitioning, defence mechanisms & survival.
Contact Hours	The contact hours (72) are distributed as follows: 15 lectorials @ 2 hours/lectorials = 30 hours 15 tutorials @ 1 hour/tutorial = 15 hours 9 practicals @ 3 hours/practical = 27 hours
Teaching and Learning Methods	A variety of learning approaches will be used. Taught sessions at UWE will utilise TEL where possible, to support pedagogy of Inductive Learning where the students will engage in facilitated activities such as lectorials, debates, case studies, problem based learning etc. Practical laboratory sessions will provide experience of techniques used

	in plant physiology and more widely in the life sciences. Field based practicals will support the lecture series and allow observation and recording of the physiology and behaviour of wildlife – with particular emphasis on animals held in Bristol Zoo. Wherever possible, audio recordings of lectorials will be made available on Blackboard to enhance learning and as revision material and re-enforces the role of technology in learning to students. Practical, field and tutorial sessions will provide opportunities for data handling and interpretation, problem solving and discussions with academic staff. Lectorials will provide contexts and overviews of topics to guide student-centred learning. Wherever possible, lectorials are supplemented by audio-visual material (e.g. DVDs) showing specific examples of animal behaviour or plant physiology. Material from BBC natural history programmes and the Arkive database of images are especially valuable. Student learning will be supported with interactive revision material and practical workbooks and the University's E-Learning Environment, Blackboard. **Scheduled learning** includes lectorials, laboratory practical classes and field-based practicals. **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.
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

Key Information Set - Module data

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		300

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

Written Exam: Unseen written exam,
Coursework: Practical report and taxonomic collection

Total assessment of the module:	
Written exam assessment percentage	50%
Coursework assessment percentage	50%
	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 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. 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 bibliographical databases. A detailed reading list will be made available through relevant channels, e.g. module handbooks, Blackboard, etc.
Indicative Reading List	The most recent edition of Barnard, C. Animal behaviour: mechanism, development, ecology an evolution. Prentice Hall. Begon, M., Harper, J.L. & Townsend, C.R. Ecology: individuals, populations and communities. Blackwell Scientific Publications, Cambridge. Dugatkin, L.A. Principles of animal behaviour. W.W. Norton & Co. Gideon, L. Physiological animal ecology. Longman, London. Louw, G. Physiological animal ecology. Longman, London. Hopkins W.G. Introduction to Plant Physiology. John Wiley & Sons Martin, P. and Bateson, P. Measuring Behaviour. An introductory guide. Cambridge University Press. Schmidt-Nielsen, K. Animal physiology: adaptation and environment. Cambridge University Press, Cambridge. Sinclair, A.R.E., Freyxell, J.M. & Caughley, G. Wildlife Ecology, Conservation and Management. Blackwell, Oxford. Smith, A. M., Coupland, G., Dolan, L. & Harberd, N. Plant Biology, Garland Science. Taiz, L. & Zeiger E. Plant Physiology. Benjamin Cummins. Willey, N. Environmental Plant Physiology, Garland Science.

Part 3: Assessment	
Assessment Strategy	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. The coursework comprises 2 elements. The first is a Practical Report which is based on the laboratory and field practical series. This report requires the detailed recording of data followed by analysis, interpretation and discussion of these data. The recording and analysis of laboratory/field data a vital skill

	for biological students consequently this assessment can described as an assessment to enhance employability and learning. The second element is a taxonomic collection. Students will be given advice on appropriate techniques for collecting, identifying and displaying their selected taxon. Through this assessment students will learn how to use taxonomic keys, many of which are now available online to identify organisms. The ability to identify organisms is a highly sought after graduate skill. 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. This assessment will provide students with an opportunity to demonstrate both their knowledge on a broad range of topics through a series of short answer questions, and more in-depth knowledge though 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 final year modules. Formative feedback is available to students throughout the module through group discussions, practical classes and in tutorials. 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		
% weighting between components A and B (Standard modules only)	**A:** **50%**	**B**: **50%**

First Sit	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Written Exam (2 hours)	100%
2.	
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Practical report	50%
2. Taxonomic collection	50%

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 (2 hours)	100%
2	
Component B **Description of each element**	**Element weighting** **(as % of component)**

1. Practical Report	50%
2. Taxonomic collection	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.	