PRIFYSGOL glyndŵr UNIVERSITY

MODULE SPECIFICATION FORM

Module Title: Laboratory and Field Skills in Biology	Level: 3	Credit Value: 20

Module code: LND302	Cost Centre: GAHT	JACS2 code: C100

Trimester(s) in which to be offered: 2	With effect from: September 2013

Office use only: To be completed by AQSU:	Date approved: August 2013 Date revised: - Version No: 1

Existing/New: New	Title of module being replaced (if any): N/A

Originating Department: Biology and Environment	Module Leader: D.Skydmore

Module duration (total hours): Scheduled learning & teaching hours Independent study hours	**200** 70 130	Status: core/option/elective (identify programme where appropriate):	Core

Programme(s) in which to be offered: BSc (Hons) Wildlife and Plant Biology (including Foundation Year) BSc (Hons) Equine Science and Welfare Management (including Foundation Year) FDSc Animal Studies (including Foundation Year) BSc (Hons) Forensic Science BSc (Hons) Geography, Ecology & the Environment	Pre-requisites per programme (between levels): None

Module Aims:

1. To introduce the concepts of ecology
2. To develop laboratory skills
3. To develop field skills

Intended Learning Outcomes

At the end of this module, students should be able to:

Knowledge and Understanding:

1. Undertake practical laboratory work and write laboratory reports following technical report writing conventions;
2. Undertake field studies and understand the principles of species identification
3. Apply the principles of ecology to the understanding of ecosystems

Transferable/Key Skills and other attributes:

Problem solving;
Mathematical applications;
Design, analysis, and synthesis.

Assessment: please indicate the type(s) of assessment (eg examination, oral, coursework, project) and the weighting of each (%).

Assessment One: is by means of an in-course laboratory practical covering outcome 1. The practical will involve the completion of a risk assessment template followed by an assessment of practical skills in performing an exercise which is given to the student.

Assessment Two: is by mean of a Portfolio of coursework and fieldwork exercises spread throughout the module, covering outcomes 2 and 3. A specified habitat will be investigated and the student would then produce a written report of the findings.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting	Duration (if exam)	Word count (or equivalent if appropriate)
One	1	Practical	50%	1.5hrs	
Two	2,3	Portfolio	50%		2,000

Learning and Teaching Strategies:

The module will be presented to students through a series of lectures and practicals and learning will be reinforced through module tutor guided and self-directed study and interactive problem-solving tutorial sessions utilising laboratory equipment where appropriate.

Formative assessment involves tutorial questions and summative assessment is by coursework and practical work.

Syllabus outline:

Introduction to taxonomy of plants and animals
Field identification
Introduction to ecology
Biodiversity and speciation
Evolution and adaptation
Habitats and ecosystems
Populations – ecological principles of growth
Cycles- energy, nutrient, water, carbon
Field sampling in transects and quadrats
Biology Laboratory Skills
Health and safety in the laboratory and risk assessments
Terms Units and symbols in the chemical and biological laboratory
Use and limitations of transmission microscopes
Interpretation of micrographs from scanning microscopes
Preparation of microscope slides with temporary and permanent mounts
Introduction to dissection
Physiological investigation e.g. osmosis, transpiration and introduction to laboratory equipment
Calculating dilutions and preparing chemical solutions
Keeping a lab notebook
Recording data using ICT

Bibliography

Essential reading:

Clegg, C.J & MacKean, D.G. (2000) *Advanced Biology: Principles and Application.* Hodder Murray
Institute of Biology (ed) (2000). *Biological Nomenclature ,Recommendations on Terms, Units and Symbols*, 3rd Edition

Recommended reading and resources:

Martin, E. & Hine, R.S. (2008) *Dictionary of Biology.* 6th Edition. Oxford University Press
Laboratory skills http://www.labskills.co.uk/resources.php