

COURSE SPECIFICATION DOCUMENT

NOTE: ANY CHANGES TO A CSD MUST GO THROUGH ALL OF THE RELEVANT APPROVAL PROCESSES, INCLUDING LTFC.

Academic School/Department:	General Education
Programme:	Combined Studies
FHEQ Level:	3
Course Title:	Ecology: Principles and Applications
Course Code:	BIO 3130
Course Leader:	Dr Peter A. Bolton
Student Engagement Hours:	120
Lectures:	45
Seminar / Tutorials:	
Independent / Guided Learning :	75
Semester:	Fall
Credits:	12 UK CATS credits 6 ECTS credits 3 US credits

Course Description:

This course will examine themes in the relationship between organisms and the environment. Students will study the natural history, ecology, geology and plant and animal adaptations in selected habitats. This course will also provide students with a broad understanding of the science of both ecosystem and evolutionary ecology, and this study of ecosystems integrates information from physics, chemistry and biology to provide the necessary basic science to understand the controls on photosynthesis, decomposition, and nutrient cycling across diverse terrestrial and aquatic landscapes. The demographic characteristics of populations and simple models of population growth and natural regulation as well as community structure, including competition, predation, species diversity, niches and succession.

Pre- or co-requisite: MTH 3000 (or Math Assessment Exemption)

Aims and Objectives:

This course aims to expose students to an understanding of the natural and physical world around us. This will provide students with a basic understanding of the concepts of

the ecology of individual organisms and moves on, through communities and ecosystems, to global considerations of biogeography, co-evolution and conservation. Population dynamics and case histories are examined throughout the course.

Programme Outcomes :

3Ai, 3Bi, 3Ci, 3Di

A detailed list of the programme outcomes are found in the Programme Specification. This is located at the Departmental/Schools page of the portal.

Learning Outcomes:

1. Demonstrate knowledge of the structure and dynamics of natural ecosystems including. knowledge of form and function, mechanisms, diversity and evolution amongst selected examples.
2. The ability to understand a more detailed working of the structure of ecosystems and their relevance to the interaction of all living organisms.
3. Demonstrate an ability to analyse data and interpret basic scientific literature.
4. Demonstrate an ability to apply concepts and theories from biology to ecological examples and comprehend the concept of ecological footprints. Including how our actions change our environment with regard to overfishing, habitat destruction, loss of biodiversity, climate change etc.

Indicative Content:

- Introduction
- The nature of a community-flow of energy and trophic levels
- Climate and Biomes
- Classification and Population Dynamics
- Primary production, consumers, predators, decomposers.
- Food chains and food webs
- Cycles: Sampling strategies, distribution and spatial patterns
- Community Analysis-soil and water
- Ecological Systems: aquatic-freshwater and marine; terrestrial-woodland, grassland, mountain, moorland, desert etc.
- Urban ecology: Conservation. Pollution: Industrial, Agricultural and Marine. Case Studies

Assessment:

This course conforms to the Richmond University Standard Assessment Norms approved by Academic Council on 28 June 2012.

Teaching Methodology:

