

Liverpool John Moores University

Title: ENVIRONMENTAL SYSTEMS AND HUMAN IMPACTS
Status: Definitive
Code: **5113NATSCI** (119656)
Version Start Date: 01-08-2016

Owning School/Faculty: Natural Sciences & Psychology
Teaching School/Faculty: Natural Sciences & Psychology

Team	Leader
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Academic Level: FHEQ5
Credit Value: 24
Total Delivered Hours: 54
Total Learning Hours: 240
Private Study: 186

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	30
Off Site	4
Practical	20

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	Essay	exam	40	2
Report	Report	report	60	

Aims

To introduce students to the Terrestrial and Marine Environments of the Earth with the view for their deeper understanding and management.

*To appreciate and measure the human environmental impact of the planet.
To develop skills in acquiring, processing and interpreting environmental data.*

Learning Outcomes

After completing the module the student should be able to:

- 1 Evaluate current views concerning the function, significance and services of the terrestrial environments and ecosystems
- 2 Evaluate current views concerning the function, significance and human impact of marine environments and ecosystems
- 3 Plan and perform laboratory analysis of environmental samples and be familiar with a variety of data presentation formats

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Essay	2	3
Report	1	3

Outline Syllabus

Ecosystem functions and services; soil science (formation, pollution and remediation); marine and coastal science (primary production, pollution and ocean acidification).

Learning Activities

Teaching on this module is in the form of lectures, practicals and fieldwork. Most lectures are followed by practical activities that will help students develop practical skills associated with the content of each lecture. Assignment 1: There is one field trip to a former industrial area where contaminated soil may be a problem. Students are required, through field sampling and laboratory analyses, to produce a scientific report quantifying the extent of contamination and making recommendations for remediation. Assignment 2: Students are required to produce an essay on ocean acidification that is supplemented by scientific data gathered through laboratory investigations.

Notes

The module will examine the most important components of the two principal Environments of the Earth, terrestrial and marine, and the impacts that humans have inflicted on them in the last two centuries. The module is comprised of three main themes. Theme 1 introduces students to the concept of ecosystems services and

functions and sets the context for the next two themes. This part of the module will examine the economic, social and cultural value of biodiversity and natural processes and resources by exploring the ways in which environment can be said to carry value (ecosystem services). Theme 2 will focus on terrestrial environments, describing the characteristics, highlighting the significance and investigating the functioning of soils and terrestrial systems. These despite being home to the vast majority of human populations, providing large amount of our resources (e.g. food, water, minerals, fuel etc.), and, consequently, being heavily influenced by our actions (e.g. pollution, deforestation), are still not fully understood. Theme 3 will concentrate on the marine environment. The ocean is the vastest environment on earth and although there is growing awareness of its major influence on our lives through climate regulation and the increasing reliance on its resources, it is still woefully little understood. This part of the module will introduce marine ecosystems and their biogeochemical significance, and will investigate the impacts of human actions, such as pollution and ocean acidification.