

Ecology Field Skills

Module Information

2022.01, Approved

Summary Information

Module Code	5202NATSCI
Formal Module Title	Ecology Field Skills
Owning School	Biological and Environmental Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Biological and Environmental Sciences

Learning Methods

Learning Method Type	Hours
Lecture	8
Off Site	27
Online	16
Workshop	9

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	<ul style="list-style-type: none"> • To demonstrate the theoretical and practical aspects of ecology fieldwork methods of plants and animals across a range of habitats, with particular emphasis on ecological surveys and censuses of specific organismal groups. • To apply a range of species identification techniques in ecology surveys. • To develop skills using geographical information systems (GIS) to organise and analyse spatial data in ecology.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Identify surveys and census methods that are most appropriate for specific ecological assessments and identify the main factors that will affect their reliability.
MLO2	2	Execute field sampling programmes appropriate to different organismal groups and habitats.
MLO3	3	Critically analyse, interpret and discuss data from field sampling programmes with reference to factors such as human impacts, environmental management and environmental variation.
MLO4	4	Use GIS to organise and analyse spatial data.
MLO5	5	Apply species identification in ecological surveys.
MLO6	6	Undertake scientific investigations in a responsible, safe and ethical manner.

Module Content

Outline Syllabus	<p>A. Principals of sampling What are ecological surveys and why do we need them? Sampling Theory: What is a sample? Quadrats, transects, random samples, stratified random samples, grid samples, etc. Species-area curves, e.g. the effect of quadrat size and number of replicates on estimates. B. Vegetation & Habitat Surveys Vascular plant ID Habitat classification survey methods (e.g. Phase 1 Habitat Surveys and/or UK Habitats Classification) Lichen ID and their use as indicators of pollution Plotless sampling methods (e.g. application in woodlands to estimate tree densities) Habitat suitability assessments C. Animal Census Methods Comparison of animal census techniques Invertebrate and small mammal surveys Estimating population sizes – long-term monitoring programmes</p>
Module Overview	<p>In this module you will examine different standardised methods used for ecological censuses and surveys in the UK. Field experience is provided and different sampling techniques are dealt with in depth during lectures and during fieldwork abroad, with the aim of explaining the quantitative framework on which they are based in addition to providing practical experience of their execution in the field. You will also learn how to digitise spatial data and produce maps using GIS which you will then use to analyse spatial data on habitat and vegetation features.</p>
Additional Information	<p>This module examines a range of standardised methods used for ecological censuses and surveys. The primary delivery of learning will be in the field comparing methods for a variety of taxonomic groups across a range of habitats. This hands-on experience in the field will be complemented by focused data analysis sessions analysing data collected during the field trips in addition to other freely available data sources. Importantly, GIS will be used to manage spatial datasets employing a landscape ecology approach to analysing ecological survey data.</p>

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Habitat Mapping & GIS	50	0	MLO1, MLO2, MLO3, MLO4, MLO5, MLO6

Presentation	Squirrel Oral Presentation	50	0	MLO1, MLO2, MLO3, MLO5, MLO6
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Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Robert Fitt	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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