

Module Information

2022.01, Approved

Summary Information

Module Code	7119NATSCI
Formal Module Title	Climate Change Impact Monitoring and Management
Owning School	Biological and Environmental Sciences
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Biological and Environmental Sciences

Learning Methods

Learning Method Type	Hours
Lecture	7
Practical	23
Workshop	10

Module Offering(s)

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

Aims and Outcomes

Aims	To provide knowledge and understanding of GIS and remote sensing with reference to a variety of climate change impacts monitoring and management applications and to familiarise students with a range of industry-leading software. To provide programming skills (Python and/or Matlab) relevant to manipulating environmental data.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically evaluate the basic concepts behind remote sensing and GIS techniques and data
MLO2	2	Analyse and synthesise data in a variety of different GIS/remote sensing software.
MLO3	3	Evaluate the benefits and limitations of a variety of remotely sensed data.
MLO4	4	Experiment with advanced digital image processing techniques to extract quantitative information on the environment from remotely sensed data
MLO5	5	Choose the most appropriate remote sensing and GIS techniques and software for use in environmental science applications
MLO6	6	Write code in Python and/or Matlab to manipulate and display environmental data

Module Content

Outline Syllabus	Introduction to remote sensing (basic concepts, satellites and airborne data), introduction to GIS, Python/Matlab programming, climate change impacts monitoring and management with case studies on e.g. wildfires, extreme weather events.
Module Overview	This module uses industry standard remote sensing software (ENVI), geographical information software (ArcGIS/QGIS) and programming software (Matlab/Python) to provide skills in data collection, processing, interpretation and analysis for monitoring the environment and managing impacts. Case studies of monitoring and management in a variety of topics (e.g. wildfires, hurricanes) and using a variety of data (e.g. satellite, drone) will also be taught.
Additional Information	This module will equip students with practical skills in analysing environmental data and highlight how these data can be used in management strategies.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Portfolio	Portfolio	100	0	MLO1, MLO2, MLO3, MLO4, MLO5, MLO6

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Laura Edwards	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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