

## Liverpool John Moores University

Title: Climate Change Impact Monitoring and Management  
Status: Definitive  
Code: **7119NATSCI** (125686)  
Version Start Date: 01-08-2021

Owning School/Faculty: Biological and Environmental Sciences  
Teaching School/Faculty: Biological and Environmental Sciences

Team	Leader
Laura Edwards	Y

**Academic Level:** FHEQ7  
**Credit Value:** 20  
**Total Delivered Hours:** 40  
**Total Learning Hours:** 200  
**Private Study:** 160

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	7
Practical	23
Workshop	10

**Grading Basis:** 50 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	Portfolio	Portfolio	100	

### 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.*

## Learning Outcomes

After completing the module the student should be able to:

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

## Learning Outcomes of Assessments

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

Portfolio	1	2	3	4	5	6
-----------	---	---	---	---	---	---

## 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.*

## Learning Activities

The module will be taught by a combination of lectures, workshops and computer-based practicals. Lectures will introduce the theory and case studies. Practical will allow use of industry-leading software and coding languages (Matlab/Python) in various case study applications with data from a range of sources. Workshops will allow more interactive development of skills.

## Notes

This module will equip students with practical skills in analysing environmental data and highlight how these data can be used in management strategies.