Liverpool John Moores University

Title:	ENVIRONMENTAL MODELLING AND GIS
Status:	Definitive
Code:	**6116NATSCI** (121160)
Version Start Date:	01-08-2019
Owning School/Faculty:	Natural Sciences & Psychology
Teaching School/Faculty:	Natural Sciences & Psychology

Team	Leader
Laura Edwards	Y
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Academic Level:	FHEQ6	**Credit Value:**	24	**Total Delivered Hours:**	49.5
Total Learning Hours:	240	**Private Study:**	190.5		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	17
Off Site	6
Practical	20
Workshop	5

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Report	Modelling report	70	
Exam	Exam	Final exam	30	1.5

Aims

To provide students with a critical understanding of different environmental modelling

techniques

To develop skills in the selection and application of appropriate models to investigate a range of environmental phenomena

To explore the rich integrating role of Geographic Information Systems in environmental modelling

Learning Outcomes

After completing the module the student should be able to:

1	Explain key principles of environmental modelling
2	Critically evaluate the role of modelling in addressing contemporary environmental challenges
3	Demonstrate practical skills in quantitative data analysis
4	Apply appropriate models to investigate different environmental phenomena

Learning Outcomes of Assessments

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

Report	3	4
Exam	1	2

Outline Syllabus

Environmental modelling concepts. Data management and manipulation. Quantitative data analysis and numerical modelling. Geographic Information Systems in environmental modelling. Natural resource monitoring and management.

Learning Activities

The module integrates lectures, computer-based practicals (including GIS), and fieldwork.

Notes

Climate change and population growth increase pressure on natural resources and the risk posed by natural hazards. Consequently, there is a need to understand the workings of important environmental systems, so that we are informed about the possible challenges that lay ahead and thus in the best position to plan accordingly. "Environmental modelling" refers to a broad suite of tools that permits us to do this; through modelling we can explore the workings of the environment around us, informing our understanding and permitting prediction of future behaviour. In this module, modelling principles are introduced from scratch and practical modelling

experience is acquired. Geographic Information Systems (GIS) provide a rich framework for environmental modelling, and this is exploited in the delivery of the module.