

Liverpool John Moores University

Title: GIS AND REMOTE SENSING
Status: Definitive
Code: **5102NATSCI** (112586)
Version Start Date: 01-08-2011

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

Team	Leader
Anne-Marie Nuttall	Y
Elizabeth Whitfield	

Academic Level: FHEQ5 **Credit Value:** 24.00 **Total Delivered Hours:** 60.00
Total Learning Hours: 240 **Private Study:** 180

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	15.000
Off Site	3.000
Practical	42.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	Bibliograp	Annotated Bibliography.	10.0	
Portfolio	Portfolio	Practical Portfolio.	60.0	
Report	Field rep	Field Report.	10.0	
Test	Test	Phase Test.	20.0	

Aims

To introduce students to the theory and applications of GIS and remote sensing. To develop skills in image processing and interpretation and digital manipulation of spatial data.

Learning Outcomes

After completing the module the student should be able to:

- 1 Explain the principles of GIS and remote sensing and show awareness of the literature on applications of these within the natural sciences.
- 2 Demonstrate familiarity with a range of digital imagery, maps and topographic data.
- 3 Integrate, manipulate and analyse spatial and image data.
- 4 Produce maps using appropriate software packages.
- 5 Interpret geographical information from digital imagery and spatial data.

Learning Outcomes of Assessments

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

Annotated bibliography	1		
Practical portfolio	2	3	4
Field report	3		
Test	5		

Outline Syllabus

Introduction to GIS and remote sensing. Principles and applications of GIS, GPS and remote sensing. Importing and manipulating spatial & image data. Digitising. Georeferencing. Digital elevation models. Satellite imagery and image processing. Case studies of GIS and remote sensing applications in natural sciences.

Learning Activities

The module combines lectures, practical computer-based exercises and fieldwork.

References

Course Material	Book
Author	Heywood, I., Cornelius, S., Carver, S.
Publishing Year	2006
Title	An Introduction to Geographical Information Systems.
Subtitle	
Edition	3rd.
Publisher	Pearson Prentice Hall.
ISBN	0-13-129317-6

Course Material	Book
Author	Jensen, J.R.
Publishing Year	2007
Title	Remote Sensing of the Environment: an Earth Resource Perspective'.
Subtitle	
Edition	2nd.
Publisher	Prentice Hall.
ISBN	0131889508

Course Material	Book
Author	Lillesand, T.M., Kiefer, R.W., Chipman, J.W.
Publishing Year	2004
Title	Remote Sensing and Image Interpretation.
Subtitle	
Edition	5th.
Publisher	Wiley.
ISBN	0471451525

Notes

This module introduces the principles and applications of GIS remote sensing (aerial photography, satellite imagery, GPS) in the environmental and geosciences. The emphasis is on practical skills applied to these subject areas. The software packages used are ArcGIS and ERDAS Imagine.