

## Liverpool John Moores University

Title: REMOTE SENSING  
Status: Definitive  
Code: **5118NATSCX** (101341)  
Version Start Date: 01-08-2011

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

Team	Leader
Anne-Marie Nuttall	Y

**Academic Level:** FHEQ5  
**Credit Value:** 12.00  
**Total Delivered Hours:** 30.00  
**Total Learning Hours:** 120  
**Private Study:** 90

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	9.000
Off Site	3.000
Practical	18.000

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1	Practical portfolio	60.0	
Test	AS2	Phase test	20.0	
Report	AS3	Field report	20.0	

### Aims

*To introduce students to the theory and applications of 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 Interpret geographical and geomorphological information from aerial photographs and satellite images.
- 2 Explain the physical principles of remote sensing.
- 3 Demonstrate familiarity with a range of digital imagery, maps and topographic data.
- 4 Perform integration, manipulation and analysis of field and image data.
- 5 Produce maps using appropriate software packages.

### Learning Outcomes of Assessments

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

portfolio	1	3	5
test	2		
report	4		

### Outline Syllabus

*Introduction to remote sensing. Interpretation of aerial photographs. Integration of field and image data. Principles and applications of GPS. Satellite imagery, georeferencing & digital image processing. Digital elevation models. Importing and manipulating point data. Introduction to spatial modelling. Case studies of remote sensing applications in earth and environmental sciences.*

### Learning Activities

The module combines lectures, practicals, fieldwork and hands-on computer-based exercises.

### References

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

<b>Course Material</b>	Book
<b>Author</b>	Cracknell, A.P. & Hayes, L.

<b>Publishing Year</b>	2006
<b>Title</b>	Introduction to Remote Sensing
<b>Subtitle</b>	
<b>Edition</b>	2nd
<b>Publisher</b>	Taylor & Francis
<b>ISBN</b>	0849392551

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

<b>Course Material</b>	Book
<b>Author</b>	Kaplan, E.D., Hegarty, C.J.
<b>Publishing Year</b>	2005
<b>Title</b>	Understanding GPS: Principles and Applications
<b>Subtitle</b>	
<b>Edition</b>	2nd
<b>Publisher</b>	Artech House
<b>ISBN</b>	000725119

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## Notes

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