



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Gis and Remote Sensing Applications		
Module Code	UBGMSU-30-3	Level	Level 6
For implementation from	2018-19		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Geography and Environmental Management
Department	FET Dept of Geography & Environmental Mgmt		
Contributes towards			
Module type:	Standard		
Pre-requisites	Professional Development for Geographers and Environmental Managers 2017-18, Research in Geology 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Overview:</b> Pre-requisites: UBGLWG-30-2 Professional Development for Geographers and Environmental Managers or UBGMJN-30-2 Research in Geology</p> <p><b>Features:</b> Module Requirements: 60 credits at level 2</p> <p><b>Educational Aims:</b> See Learning Outcomes.</p> <p><b>Outline Syllabus:</b> The syllabus includes:</p> <p>Geographic Information Systems:            GIS History            GIS data structures and data quality            GIS analytical methods            Cartography</p>

## STUDENT AND ACADEMIC SERVICES

GIS application:  
Health  
Public Participation  
Crime  
Environmental Management

Remote Sensing:  
History of remote sensing  
Sensors: characteristics and applications  
Aerial photograph interpretation

Multispectral image analysis:  
Vegetation indices  
Image classification  
Unsupervised  
Supervised  
Change analysis

Hi-resolution and LiDAR imagery

GIS in professional practice

**Teaching and Learning Methods:** Scheduled learning includes lectures and computer-based practical sessions.

Independent learning includes hours engaged with essential reading, case study preparation and assignment preparation and completion.

Contact Hours:

Students will receive - on average - 3 hours of contact time per week. This will be in a range of formats, including weekly keynote lectures and tutorial or computer-based sessions.

Activity:

Contact time: 72 hours  
Assimilation and development of knowledge: 150 hours  
Exam preparation: 39 hours  
Coursework preparation: 39 hours  
Total study time: 300 hours

### Part 3: Assessment

Summative Assessment:

Component A:

GIS Group presentation, Individual Technical Critique & Reflective Report.

The assessment strategy for this component focusses on preparing students for professional practice, and is based on problem-based learning and authentic assessment approaches. Students work in groups using GIS in response to a live project brief which is presented at an assessment event open to invited delegates, external stakeholders, departmental and nondepartmental UWE academics.

Technical critiques (of the presented work) by individual group members are included to assess the technical knowledge and understanding of individual students. This allows students to reveal their expertise beyond the aggregate performance of the group to which they contributed. Student reflection is included as it consolidates disciplinary knowledge and, more importantly, dispositional development which are key components of a successful authentic assessment strategy.

Component B:

Remote Sensing Coursework - Atlas of Remote Sensing Applications & Reflective Report.

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The assessment strategy for this component is informed by problem-based learning and authentic assessment approaches. The atlas format requires students to complete a series of analytical tasks, explain technical elements of the analyses, and present the results in an engaging, informative submission. This approach addresses technical and subject knowledge outcomes in a comprehensive manner, as well as enabling professional development with its strong focus on developing an integrated strategy for communicating and visualizing the context, process and results of the assessment tasks. The reflective element is included to allow students to articulate their awareness of their personal, disciplinary and professional development as a result of completing the assessment.

Formative work:

Formative feedback is provided in an ongoing manner through the interaction during practical sessions. Additionally, opportunities for submission of drafts or plans of summative components for comment form part of the formative feedback strategy of the module.

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		40 %	Atlas of remote sensing applications (2250 word equivalent)
Written Assignment - Component A		10 %	Individual technical critique (750 words)
Report - Component B		10 %	Reflective report (750 words)
Report - Component A		10 %	Individual reflective report (750 words)
Presentation - Component A	✓	30 %	Group presentation group gis project (1500 word equivalent)
Resit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		40 %	Atlas of remote sensing applications (2250 word equivalent)
Written Assignment - Component A		10 %	Individual technical critique (750 words)
Report - Component B		10 %	Reflective report (750 words)
Report - Component A		10 %	Individual reflective report (750 words)
Presentation - Component A	✓	30 %	Individual Presentation: GIS Project (1500 word equivalent)

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<b>Part 4: Teaching and Learning Methods</b>		
Learning Outcomes	On successful completion of this module students will be able to:	
	<b>Module Learning Outcomes</b>	
	MO1	Evaluate the utility of GIS across a range of disciplines (health, public participation, crime and environmental management)
	MO2	Critique the utility of various GIS data structures and assess the impacts of data quality in both disciplinary and project contexts
	MO3	Design, implement and critique a GIS project with due consideration of data structure and quality and analytical methods
	MO4	Characterize and define applications suitable for the application of a remote sensing (RS) approach and select and defend an appropriate RS data choice
	MO5	Implement and critique a multi-spectral analytical approach to landcover change analysis
	MO6	Implement and evaluate methods of assessing the accuracy of RS derived data products
	MO7	Assess the implications of hi-resolution RS data products on traditional GIS and RS analytical approaches
Contact Hours	<b>Contact Hours</b>	
	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	228
	<b>Total Independent Study Hours:</b>	228
	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	72
	<b>Total Scheduled Learning and Teaching Hours:</b>	72
	<b>Hours to be allocated</b>	300
	<b>Allocated Hours</b>	300
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/modules/ubgmsu-30-3.html">https://uwe.rl.talis.com/modules/ubgmsu-30-3.html</a></p>	