MODULE SPECIFICATION

Part 1: Information			
Module Title	GIS and Remote Sensing Applications		
Module Code	UBGMSU-30-3	Level	Level 6
For implementation from	2019-20		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Geography and Environmental Management
Department	FET Dept of Geography & Envrnmental Mgmt		
Module type:	Standard		
Pre-requisites	Project Management and Health and Safety Risk Management 2018-19, Research in Geology 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
Overview: Pre-requisites: Students must have taken one out of UBGLWG-30-2 Professional Development for Geographers and Environmental Managers or UBGMJN-30-2 Research in Geology or UBGLWX-30-2 Project Management, Health and Safety Risk Management (Taught and WBL) **Features**: Module Requirements: 60 credits at level 2 **Educational Aims:** See Learning Outcomes. **Outline Syllabus:** The syllabus includes: Geographic Information Systems: GIS History GIS data structures and data quality GIS analytical methods Cartography 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: 72 hours
Exam preparation: 39 hours
Coursework preparation: 117 hours
Total study time: 300 hours

Part 3: Assessment

Summative Assessment

Component A: (Learning outcomes: 1,2, 4,6,7)

Examination
A solid level of theoretical understanding and knowledge form an integral part of professional expertise. In addition to the assessments focused on application and practice (described below), there is a need to assess disciplinary knowledge outcomes. A written examination combining short and medium response questions is the most effective to do this.

Component B: (Learning outcomes: 1,2,3,4,5,6,7)

Element 1: Atlas of Remote Sensing Applications
The assessment strategy for this element 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 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. A short reflective submission is included to allow students to articulate their awareness of their personal, disciplinary and professional development as a result of completing the assessment.

Element 2: GIS Group presentation
The assessment strategy for this element continues the focus on preparing students for professional practice. 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. A short reflective submission 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**
Portfolio - Component B		35 %	Atlas of Remote Sensing Applications (2500 word equivalent)
Presentation - Component B		35 %	GIS Group Presentation (2500 word equivalent)
Examination - Component A		15 %	Written exam (1 hours)
Examination - Component A	✓	15 %	Written exam (1 hours)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Portfolio - Component B		35 %	Atlas of Remote Sensing Applications (2500 word equivalent)
Presentation - Component B		35 %	GIS Individual Presentation (2500 word equivalent)
Examination - Component A	✓	30 %	Written exam (2 hours)

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	**Reference**
Evaluate the utility of GIS across a range of disciplines (health, public participation, crime and environmental management)	MO1
Critique the utility of various GIS data structures and assess the impacts of data quality in both disciplinary and project contexts	MO2
Design, implement and critique a GIS project with due consideration of data structure and quality and analytical methods	MO3
Characterize and define applications suitable for the application of a remote sensing (RS) approach and select and defend an appropriate RS data choice	MO4
Implement and critique a multi-spectral analytical approach to landcover change analysis	MO5
Implement and evaluate methods of assessing the accuracy of RS derived data products	MO6
Assess the implications of hi-resolution RS data products on traditional GIS and RS analytical approaches	MO7

Contact Hours	**Independent Study Hours:**	
	Independent study/self-guided study	228
	Total Independent Study Hours:	228
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	72
	Total Scheduled Learning and Teaching Hours:	72
	Hours to be allocated	300
	Allocated Hours	300
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/modules/ubgmsu-30-3.html	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: