Module Specification

GIS and Remote Sensing Applications

Version: 2021-22, v2.0, 19 Jul 2021

Contents

Part 1: Information

Module title: GIS and Remote Sensing Applications

Module code: UBGMSU-30-3

Level: Level 6

For implementation from: 2021-22

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Environment & Technology

Department: FET Dept of Geography & Envrnmental Mgmt

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Geography and Environmental Management

Module type: Standard

Pre-requisites: Project Management and Health and Safety Risk Management 2020-21

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body 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

Part 3: Teaching and learning methods

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

Coursework preparation: 156 hours

Total study time: 300 hours

Module Learning outcomes:

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

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Total = 300

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ubgmsu-30-3.html

Part 4: Assessment

Assessment strategy: Summative Assessment

Component A: (Learning outcomes: 1,2,3,7)
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 non-departmental UWE academics.

An individual written technical critique will give students an opportunity to demonstrate critical engagement with theoretical content, but framed around the work undertaken by the group.

Component B: (Learning outcomes: 4,5,6,7)
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 individual 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. This element is designed to encourage reflexivity as key element of professional practice.

Formative assessment:
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.

Assessment components:

Written Assignment - Component A (First Sit)
Description: Individual Technical Critique (1,000 words)
Weighting: 15 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO7

Presentation - Component A (First Sit)
Description: Story Map Presentation (20 mins)
Weighting: 35 %
Final assessment: Yes
Group work: Yes

Learning outcomes tested: MO1, MO2, MO3, MO7

Portfolio - Component B (First Sit)

Description: Atlas of Remote Sensing Applications (2500 word equivalent)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4, MO5, MO6, MO7

Written Assignment - Component A (Resit)

Description: Technical Critique (1,000 words)

Weighting: 15 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO7

Presentation - Component A (Resit)

Description: Story Map Presentation (20 mins)

Weighting: 35 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO7

Portfolio - Component B (Resit)

Description: Atlas of Remote Sensing Applications (2500 word equivalent)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4, MO5, MO6, MO7

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Geology [Sep][FT][Frenchay][3yrs] BSc (Hons) 2019-20

Geography [Sep][FT][Frenchay][3yrs] BA (Hons) 2019-20

Geography [Sep][FT][Frenchay][3yrs] BSc (Hons) 2019-20

Geology [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20

Geography {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19

Geography [Sep][SW][Frenchay][4yrs] BSc (Hons) 2018-19

Geography {Foundation} [Sep][FT][Frenchay][4yrs] BA (Hons) 2018-19

Geography [Sep][SW][Frenchay][4yrs] BA (Hons) 2019-20