MODULE SPECIFICATION

Part 1: Information			
Module Title	Engineering Graphics and Communication		
Module Code	UBGMSQ-15-1	Level	Level 4
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Geography and Environmental Management
Department	FET Dept of Geography & Envrnmental Mgmt		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Overview: This module will introduce you to a range of fundamental engineering communication methods.

Educational Aims: See Learning Outcomes

Outline Syllabus: Topics include:

Engineering sketching including:
Freehand and observational sketching.
Perspective, plan, elevation and section views.
Scale, shading and use of lineweight.
Elements of design (line, volour, value, form, space texture, balance, rhythm, emphasis, proportion and unity).

Technical engineering drawing including:
Annotations.
Dimensions.
1st and 3rd angle projections.

Computer aided design including:

Conventions and standards.
Use of model and paper space.

Building information modelling.
3D CAD for simple structures.
Principles of building information modelling for civil engineering.

Geographic information systems (GIS) including:
Data structures.
Analytical methods.
Multi-criteria decision making in GIS
Data quality considerations
Data visualisation.
Effective cartography.

Teaching and Learning Methods: The module will be taught using a combination of lectures, in class activities and computer practicals. Independent learning is supported by tasks set in class and online learning resources are used for specific software adopted in the module.

Part 3: Assessment

The assessment strategy covers a range of written and graphical communication techniques for engineering information.

Component A –Portfolio (A). Learning outcome 5

Students will complete a GIS decision making exercise to tackle a specified engineering problem. They will present this analysis in a series of maps with written/graphical explanations in a Portfolio. Students will be expected to produce maps to a high cartographic standard and contextualise and evaluate their analysis with reference to published academic literature.

The exercise will be supported with a series of lectures and computer practical sessions, in which opportunities for assessment for learning and formative feedback will be provided to students. This is identified as Component A as the students will be required to make analytical decisions which will be communicated in the portfolio based on academic judgement and published literature; therefore no two students projects will be identical.

Component A – Portfolio (B). Learning outcomes 1 to 4

The sketching, drawing, computer aided design and building information modelling topics are assessed via a portfolio compiled as the students undertake weekly exercises where they develop materials based on individual subjects and case studies.

In the computer and drawing practicals, students can develop their understanding through interaction with peers and teaching staff from whom they will receive formative feedback. The portfolio assessment provides an opportunity to learn through the assessment process and feedback given.

Resit strategy
The resit assessment is the same as the first sit assessment.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Portfolio - Component A	✓	50 %	Portfolio A (equivalent to 1000 words)
Portfolio - Component A		50 %	Portfolio B (equivalent to 2000 words)

Resit Components	Final Assessment	Element weighting	Description
Portfolio - Component A	✓	50 %	Portfolio A (equivalent to 1000 words)
Portfolio - Component A		50 %	Portfolio B (equivalent to 2000 words)

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
Present basic engineering information in the form of a hand drawn technical drawing	MO1
Present basic engineering information in the form of a 2D CAD drawing	MO2
Identify the principles of Building Information Modelling	MO3
Present basic engineering information in the form of 3D CAD in the context of Building Information Modelling	MO4
Use geographic information systems for problem solving and complex decision making in an engineering context using primary and secondary data	MO5

Contact Hours

Independent Study Hours:	
Independent study/self-guided study	114
Total Independent Study Hours:	114
Scheduled Learning and Teaching Hours:	
Face-to-face learning	36
Total Scheduled Learning and Teaching Hours:	36
Hours to be allocated	150
Allocated Hours	150

Reading List

The reading list for this module can be accessed via the following link:

https://uwe.rl.talis.com/modules/ubgmsq-15-1.html

Part 5: Contributes Towards
This module contributes towards the following programmes of study: Civil and Environmental Engineering {Foundation} [Sep][SW][Frenchay][5yrs] BEng (Hons) 2018-19 Civil and Environmental Engineering {Foundation} [Sep][FT][Frenchay][4yrs] BEng (Hons) 2018-19