

Session: 2022/23

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Title of Module: Digital Surveying & Field Experience			
Code: ENGG08015	SCQF Level: 8 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Djamalddine Boumezerane		

Summary of Module

This module is intended to give students the knowledge and skills to plan and practice surveying on construction sites. The module includes lectures and site work.

Students will learn about plane surveying; maps and plans; the work of the Ordnance Survey; surveying frameworks and detail surveys.

The use of tapes, theodolites, and levels are covered. Students develop skills to record their measurements, interpret them and the ability to assess the accuracy of their work.

Students will learn to establishing survey control frameworks by use of trilateration, traversing and triangulation. The students are introduced to National Grid and local co-ordinate systems in conjunction with the theory and use of Global Positioning Systems.

The presentation of information by plans, sections and analytical results is covered to develop communication skills. The theory and use of Geographical Information Systems are covered.

Digital techniques of surveying such as 3D scanning and Robotic Theodolites will be reviewed.

Students learn to apply their skills to setting out and monitoring of buildings, sewers, and road construction. Included in this is the determination of areas and volumes, resection and the layout of curves.

Besides teaching and learning on campus the course includes a multi-day surveying field course. This involves significant use of the theodolite and level, analysis of results and preparation of drawings.

This module will support students to develop their UWS graduate attributes, namely: Academic (critical and analytical thinking, inquiring, knowledgeable, innovation, and problem solving); Personal (effective communicator, creative, imaginative); Professional (Collaborative, research-minded, and socially responsible).

- To develop an understanding and skill in the the calculation procedures used for civil engineering surveying
- To provide the opportunity for students to become competent users of civil engineering surveying equipment
- To give students experience of working in a team to undertake civil engineering surveying
- To give students experience in preparing civil engineering survey drawings
- To expose students to digital techniques for surveying and setting out.

Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
✓	✓				

Face-To-Face

Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

Blended

A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

Fully Online

Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

HybridC

Online with mandatory face-to-face learning on Campus

HybridO

Online with optional face-to-face learning on Campus

Work-based Learning

Learning activities where the main location for the learning experience is in the workplace.

Campus(es) for Module Delivery

The module will **normally** be offered on the following campuses / or by Distance/Online Learning:
(Provided viable student numbers permit)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓						

Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1	Term 2	Term 3
		✓

Learning Outcomes: (maximum of 5 statements)

On successful completion of this module the student will be able to:

- L1. To gather, analyse and present construction survey information.
- L2. To analyse construction situations and then determine and provide setting out solutions.
- L3. To develop skills in the use of surveying equipment.
- L4. To work in a team and complete surveying tasks

Employability Skills and Personal Development Planning (PDP) Skills

SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	SCQF Level 8. • Demonstrate detailed knowledge and understanding of essential facts and principles of surveying especially the use of levels and theodolites.
Practice: Applied Knowledge and Understanding	SCQF Level 8. • Develop practical surveying skills using the level and theodolite. • Be able to survey a framework, analyse and correct it as necessary and then set out works within this framework
Generic Cognitive skills	SCQF Level 8. • Be able to apply appropriate quantitative mathematical tools to the analysis of surveying problems.

	<ul style="list-style-type: none"> • Ability to define a problem and identify constraints. • Ability to obtain, interpret and apply the results of a detail survey. 				
Communication, ICT and Numeracy Skills	SCQF Level 8. <ul style="list-style-type: none"> • Develop transferable skills in communication especially the communication of surveying information in drawings. 				
Autonomy, Accountability and Working with others	SCQF Level 8. <ul style="list-style-type: none"> • Lab and field work is undertaken in groups to encourage team skills. • Autonomy and accountability are encouraged by setting absolute standards for the accuracy of the survey that must be met. 				
Pre-requisites:	Before undertaking this module the student should have undertaken the following:				
	<table border="1"> <tr> <td>Module Code:</td> <td>Module Title:</td> </tr> <tr> <td>Other:</td> <td></td> </tr> </table>	Module Code:	Module Title:	Other:	
	Module Code:	Module Title:			
Other:					
Co-requisites	<table border="1"> <tr> <td>Module Code:</td> <td>Module Title:</td> </tr> </table>	Module Code:	Module Title:		
Module Code:	Module Title:				

* Indicates that module descriptor is not published.

Learning and Teaching	
The learning and teaching activity for this module include lectures, laboratories and a field experience over several days.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	10
Tutorial/Synchronous Support Activity	6
Laboratory/Practical Demonstration/Workshop	32
Independent Study	152
	200 Hours Total
**Indicative Resources: (eg. Core text, journals, internet access)	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Various handout material and materials on the University's VLE. Irvine, W. and Maclennan F., "Surveying for Construction", 5th Ed., McGraw-Hill, 2006. The University's VLE.</p> <p>Extension Resources: Consultation of the under noted resources is recommended and material from these resources may be of benefit to the student in the assessment process:</p>	

Report of practical/ field/ clinical work	✓	✓	✓		10	5	
Portfolio of practical work	✓	✓	✓		20	0	
Component 2							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours	
Design/ Diagram/ Drawing/ Photograph/ Sketch	✓	✓	✓		5	0	
Clinical/ Fieldwork/ Practical skills assessment/ Debate/ Interview/ Viva voce/ Oral	✓	✓	✓	✓	10	3	
Presentation	✓	✓	✓	✓	5	1	
Component 3							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours	
Unseen closed book (standard)	✓	✓	✓		50	2	
Combined Total For All Components					100%	11 hours	

Footnotes

A. Referred to within Assessment Section above

B. Identified in the Learning Outcome Section above

Note(s):

1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note). This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity

The programme leaders have considered how the programme meets the requirements of potential students from minority groups, including students from ethnic minorities, disabled students, students of different ages and students from under-represented groups. Students with special needs (including additional learning needs) would be assessed/accommodated and any identified barriers to particular groups of students discussed with the Enabling Support Unit and reasonable adjustments would be made for classes and field week.

UWS Equality and Diversity Policy

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)