Module Descriptor

Title	Sustainable Construction		
Session	2025/26	**Status**	Published
Code	ENGG08013	**SCQF Level**	8
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	J Hughes		

Summary of Module

The module introduces students to Sustainable Development Goals (SDGs) particularly highlighting the role of the construction industry in minimising the impact on the natural environment whilst maintaining the Health, Safety & wellbeing of the construction workforce.

Students will develop a holistic understanding of the building fabric, namely: substructure (foundation and basement), and superstructure (frame, external walls, and roofs). Students will also learn about the energy performance of buildings and acquire knowledge on sustainable construction practice, such as site waste management plans, and application of offsite construction technology.

In addition, students will learn about the latest CDM regulations and have field experience of construction practice with a particular focus on Sustainable Construction.

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).

Module Delivery Method	**On-Campus**[1] ☒	**Hybrid**[2] ☐	**Online**[3] ☐	**Work -Based Learning**[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London	☐ Online / Distance Learning	

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

			☒ Paisley		☐ Other (specify)	
Terms for Module Delivery	Term 1	☒	Term 2	☐	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Develop a critical understanding of the application of sustainable construction practice.
L2	Acquire knowledge and understanding of Health, Safety and Wellbeing in the construction industry.
L3	Develop holistic knowledge and understanding of the sustainable construction practice through field experience.
L4	N/A
L5	N/A

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 8** • K&U of civil engineering design process and construction. • K&U of the role of sustainability in the built environment. • K&U of the function and performance requirements of a building • K&U of the energy performance of buildings. • K&U of a range of environmental issues in the built environment. • K&U of basic construction trades. • Introductory K&U of health and safety.
Practice: Applied Knowledge and Understanding	**SCQF 8** • Apply knowledge of site waste management in a project context. • Apply knowledge of energy performance of buildings in a project context. • Apply knowledge of offsite construction in a project context.
Generic Cognitive skills	**SCQF 8** • Develop analytical and research skills for applying sustainable construction practice in a project context. • Be able to comprehend the broad picture of civil engineering, and seeing the importance of safety and sustainability. • Development of group participation in teaching and learning • Introduce the use of appropriate codes of practice and industry standards.

Communication, ICT and Numeracy Skills	**SCQF 8** • Further development in numeracy skills. • Development of presentation and team working skills.
Autonomy, Accountability and Working with Others	**SCQF 8** • Exercise some autonomy and initiative in activities related to civil engineering. • Develop an appreciation of the social, environmental, ethical, economic, and commercial considerations affecting the exercise of engineering judgement. • Develop responsibility for own time management and organizing own study activities out with formal class contact periods.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	27
Laboratory / Practical Demonstration / Workshop	21
Independent Study	152
n/a	0
n/a	0
n/a	0
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: All learning material for Sustainable Construction is available on the learning platform. This includes lecture presentations, hand-outs, suggested reading material and weblinks to appropriate sources. Essential Reading

1. Our Common Future
https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

2. UN Sustainable Development Goals https://sdgs.un.org/goals

3. Zero Waste Scotland
http://www.zerowastescotland.org.uk/category/audience/construction/

4. Scottish Government Guide to the Planning System
http://www.scotland.gov.uk/Publications/2009/08/11133705/1

5. Scottish Government building regulations http://www.scotland.gov.uk/Topics/Built-Environment/Building/Building-standards/publications/pubtech

6. HSE http://www.hse.gov.uk/construction/

7. Construction Design and Management (CDM) Regulations, 2015

8. von der Tann L, Basu D, Ritter S, Capellen PS and Størdal IF Sustainability in geotechnical engineering: what does it mean and why does that matter?. Proceedings of the Institution of Civil Engineers – Engineering Sustainability, https://doi.org/10.1680/jensu.22.00076

9. Tierney, G. and Tennant, S. (2016) Post Occupancy Evaluation (POE): a BREEAM Excellent case study. 32nd. Annual ARCOM Conference, 5 - 7 September 2016, Manchester, UK, Association of Researchers in Construction Management, 415 - 424.

(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in timetabled sessions. Students will scan their attendance via the attendance scanners each time they are on-campus. Students will have attendance recorded in class and they will be expected to login to the VLE several times per week. Students who are unable to attend a timetabled learning session, due to illness or other circumstance, should notify their Programme Leader. Across the School an 80% attendance threshold is set. Students who fall below this, will be referred to the Student Success Team to see how they can be best supported in their studies.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code.

Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module has lab-based teaching and as such students are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations.

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

Supplemental Information

Divisional Programme Board	**Engineering Physical Sciences**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Civil Engineering and Quality Management
Moderator	A Earij
External Examiner	A Robinson
Accreditation Details	This module is accredited by the Joint Board of Moderators as part of BEng (Hons) Civil Engineering.
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	3.10 Module Descriptor copied to 2025/26 template, Attendance and Engagement and EDI statements updated. 3.09 Learning Outcomes revised to in line with the field-work. Learning and teaching hours updated. Assessment weighing revised with 50:50 distribution. 3.08 Previous revisions - March 2019 Learning Outcomes reviewed and aligned with the JBM attributes for a CEng particularly the inclusion of field-experience for sustainable development. Assessment plan revised and updated in-line with JBM requirements. Addition of updated learning material for research-informed teaching.

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Assessment 1: Written report/review of aspects of sustainability in construction (50%).
Assessment 2
Assessment 2: Written portfolio/ reflection on practical component of course (50%).
Assessment 3
N/A
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.

(ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Review/article/Critique/Paper	☒	☒	☐	☐	☐	50%	

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of practical work	☐	☒	☒	☐	☐	50%	

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
N/A	☐	☐	☐	☐	☐		
Combined total for all components						100%	hours

Change Control

What	**When**	**Who**
Further guidance on aggregate regulation and application when completing template	16/01/2020	H McLean
Updated contact hours	14/09/2021	H McLean
Updated Student Attendance and Engagement Procedure Updated UWS Equality, Diversity and Human Rights Code	19/10/2023	C Winter
Guidance Note 23-24 provided General housekeeping to text across sections.	12/12/2023	D Taylor