Module Descriptor Form

Civil and Environmental Engineering

CL136 - The Environment And Infrastructure

Module Code	CL136	**Module Title**	The Environment And Infrastructure				
Module Registrar	Roberts, Dr Jennifer J						
Other Staff Involved							
Credit Weighting	10	**Semester**	2	**Elective**	Yes	**Academic Level**	1
Pre-requisites							
Required for							

Module Format and Delivery (hours):

Lectures	Tutorials	Assignments	Labs	Private Study	Total
20	4	40	0	20	84

Educational Aim

This module aims to:

provide a broad understanding of contemporary global challenges, and the environmental, economic and social contexts in which engineers and associated practitioners design and build infrastructure. The module examines historical and contemporary case studies concerning the environment and people and their critical relationship with civil engineering professional practice, now and into the future. Through the taught material, activities and assignments students develop systems thinking skills and communication skills.

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Syllabus

This module will teach the following:

Principles of sustainable development: Including definition of sustainability and sustainable development.

Global environmental challenges: Contemporary sustainability challenges defined by the United Nations Sustainable Development Goals (UN SDGs) and the role of engineers and engineering in tackling the SDGs. Some challenges will be examined in more detail, including [but not restricted to] climate action, infrastructure, water, sustainable cities and communities, equality and energy.

Assessing sustainability: An introduction to approaches to assessing sustainability (including life cycle assessment, impact assessment, re-cycling, circular economy) and the importance of engineering context on influencing/governing sustainability.

Sustainable development within engineering practice: examples of how sustainable development objectives are integrated within engineering projects, including managing complexity, taking value-based decisions and designing sustainable solution(s).

Skills for sustainable development: including reflective thinking, systems thinking, group work and communication.

Career pathways in sustainability topics.

Learning Outcomes

On Completion of the module, the student is expected to be able to:

LO: 1	Understand and describe the principles of sustainable development, and global sustainability challenges as defined by the United Nations Sustainable Development Goals.
LO: 2	Understand and give examples of the role of engineers and engineering in tackling sustainability challenges at local to global scales.
LO: 3	Understand the principles of developing and applying sustainability objectives in engineering projects, and critically reflect on sustainable development in practice.
LO: 4	Work together effectively to evaluate, summarise and communicate information.

(UK SPEC suggests no more than 4 learning outcomes per module. Statements must be broad and be syllabus free and link in with the intended learning outcomes on the programme specifications.)

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Assessment of Learning Outcomes - Criteria

Learning Outcome: **1**

	Criteria
1	Awareness of how sustainability can be defined and assessed
2	Awareness of the United Nations Sustainable Development Goals (SDGs).

Learning Outcome: **2**

	Criteria
1	Ability to demonstrate how engineering and related topics can provide key solutions to the SDGs
2	Appreciation of current and future challenges for engineers including: climate resilience of infrastructure, delivering net zero, resource management, tackling inequalities.
3	Understanding of how economic, environmental and social issues can be balanced to obtain sustainable solutions to key contemporary challenges.

Learning Outcome: **3**

	Criteria
1	Understanding of how sustainable development objectives are incorporated within engineering projects.
2	Awareness of different approaches to assessing sustainability.
3	Ability to evaluate and reflect on approaches to define and evaluate sustainable development objectives.

Learning Outcome: **4**

	Criteria
1	Ability to seek, interpret and summarise information from case studies, and cite information source.
2	Ability to work in small groups on a shared task, and deliver outcomes in professional and timely manner.
3	Ability to communicate through oral, written and visual forms.

Assessment Method(s) Including Percentage Breakdown and Duration of Exams

To Pass the module, students need to gain a summative mark of: 40%

Description	Semester	Start Week	Duration	Weight	Submission Week	Linked Criteria
Reflective Diary 1 (weeks 6-10)	1	6		30%	11	
Group Poster #1	2	1		20%	5	
Reflective Diary 1 (weeks 1 - 5)	2	1		20%	6	
Group Poster #2	2	6		30%	10	

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Principles of Assessment Feedback

1. Assessment is coursework based. The coursework, assessment framework, and timelines are clearly explained to students at the start of the course, and reiterated at key points in the semester.
2. Coursework types and timelines are specifically designed so that mid-semester feedback will support end semester submission.
3. All assessments are clearly related to the learning outcomes and assessment feedback is provided against clearly stated criteria.
4. The class includes several different opportunities to provide informal and formal feedback on class activities , engagement, and performance, at individual/group/class level, and two-way (staff-to-student, and student-to-staff), and also includes peer-to-peer feedback within groups.
5. At all times, feedback will be given with the aim of promoting effective student learning and supporting student development, and feedback will be delivered in a fair and transparent way.
6. The assessment and feedback practice is continually reviewed to ensure that these objectives are met.

Additional Information

Marks Return: Failure to submit at least one reflective diary assignment will result in an Absence being returned .

Resit Procedure

Resit coursework to be submitted prior to commencement of the August exam diet . There are two parts to the resit coursework, both must be submitted and achieve a ‘Pass’ award to be able to pass the resit assessment . Failure to submit both assignment will result in an Absence being returned .

Recommended Reading

Specific reading and resources will be signposted within relevant class sessions on Myplace.

Background reading that provides a general overview of the topic areas covered by the class includes: Cohen M (2020), Sustainability, https://www.politybooks.com/bookdetail?book_slug=sustainability--9781509540310

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Module Timetable

Week	Semester 1	Semester 2
0		
1		
2		
3		
4		
5		Submission 20%
6		Submission 20%
7		
8		
9		
10		Submission 30%
11	Submission 30%	
E		

Date of Last Modification

08-09-2025