

CA2888: ENVIRONMENTAL, SOCIAL AND GOVERNANCE PRINCIPLES IN THE BUILT ENVIRONMENT

New Syllabus Proposal

Effective Term

Semester A 2026/27

Part I Course Overview

Course Title

Environmental, Social and Governance Principles in the Built Environment

Subject Code

CA - Civil and Architectural Engineering

Course Number

2888

Academic Unit

Architecture and Civil Engineering (CA)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Additional Information

Nil

Part II Course Details**Abstract**

Students will explore ESG principles and carbon management in the built environment. The course connects theoretical frameworks with practical applications, equipping students to implement sustainable, socially responsible, and governance-compliant projects.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain carbon impacts on architectural and civil engineering projects across their lifecycle, from material selection to demolition.		x	x	x
2	Describe decarbonisation strategies in the built environment, aligning with ESG goals.		x	x	x
3	Apply ESG principles to decision-making processes in project planning, emphasising carbon management alongside social and governance considerations.		x	x	x
4	Discuss real-world examples of carbon-focused ESG initiatives in architecture and civil engineering to identify best practices and lessons learned.		x	x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	Students will engage in formal lectures to gain knowledge about basic principles in ESG, carbon studies, and their applications in the built environment.	1, 2, 3, 4	2 hours/week

2	Tutorial/ Assignment	Student will engage in tutorial activities and coursework to extend their knowledge in ESG, carbon studies, and their applications in the built environment.	1, 2, 3, 4	1 hour/week
---	----------------------	--	------------	-------------

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Assignment	1, 2, 3, 4	30	-	Yes
2	Mid-term test/quiz	1, 2, 3, 4	20	-	No

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Minimum Continuous Assessment Passing Requirement (%)

30

Minimum Examination Passing Requirement (%)

30

Additional Information for ATs

To pass a course, a student must obtain minimum marks of 30% in both coursework and examination components, and an overall mark of at least 40%

Assessment Rubrics (AR)**Assessment Task**

Assignment

Criterion

Assessing students' ability to develop and justify a decarbonisation strategy for a hypothetical built environment project, integrating environmental, social, and governance considerations with clear carbon reduction outcomes.

Excellent (A+, A, A-)

Exceptional

Good (B+, B, B-)

High

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not reaching marginal level

Assessment Task

Mid-term test/quiz

Criterion

Evaluating students' basic understanding of key concepts through concise and accurate answers to questions.

Excellent (A+, A, A-)

Exceptional

Good (B+, B, B-)

High

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not reaching marginal level

Assessment Task

Examination

Criterion

Assessing students' comprehensive knowledge of ESG and carbon management in the built environment, demonstrating mastery of theoretical principles, practical applications, and real-world examples covered in the lectures.

Excellent (A+, A, A-)

Exceptional

Good (B+, B, B-)

High

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not reaching marginal level

Part III Other Information

Keyword Syllabus

ESG Principles; Carbon Footprint; Lifecycle Assessment (LCA); Decarbonization; Sustainable Design; Net-Zero Architecture; Carbon Capture; Green Materials; Social Responsibility; Governance Compliance; Energy Efficiency; Carbon Accounting

Reading List

Additional Readings

Title	
1	Hawken, P. (Ed.). (2017). Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming. Penguin Books.
2	Kibert, C. J. (2016). Sustainable Construction: Green Building Design and Delivery. Wiley.
3	IPCC. (2022). Climate Change 2022: Mitigation of Climate Change. Cambridge University Press.
4	Committee on Climate Change (CCC). (2020). Net Zero: The UK's Contribution to Stopping Global Warming. Committee on Climate Change.
5	Lehne, J., & Preston, F. (2018). Making Concrete Change: Innovation in Low-Carbon Cement and Concrete. Chatham House.
6	Anderson, J., & Thornback, J. (2021). Carbon Counting and Reduction in the Built Environment. RIBA Publishing.
7	Bergman, D. (2019). Sustainable Design: A Critical Guide for Architects and Engineers. Princeton Architectural Press.
8	Lucon, O., et al. (2014). Buildings - Chapter 9 in Climate Change 2014: Mitigation of Climate Change. IPCC Fifth Assessment Report.
9	Pomponi, F., De Wolf, C., & Moncaster, A. (Eds.). (2018). Embodied Carbon in Buildings: Measurement, Management, and Mitigation. Springer.