The Hong Kong University of Science and Technology

UG Course Syllabus

[Course Title]: **Environment and Society: Sustainable Development Goals and Carbon Neutrality**

[Course Code]: **CIVL 1140**

[No. of Credits]: 3

[Any pre-/co-requisites]: No

Name: Prof. Dan Tsang; Dr. Zibo Xu; Dr. Yuying (Heather) Zhang

Email: cedan@ust.hk; ziboxu@ust.hk; yuying.zhang@connect.ust.hk;

Course Description

This course provides an interdisciplinary introduction to major contemporary environmental issues, exploring their scientific foundations and societal dimensions across local scales to global frameworks such as the Sustainable Development Goals (SDGs) and Carbon Neutrality. Key themes include pollution, resource management, ecosystem health, and the pursuit of sustainable development.

The course is structured to move from comprehension to application. Through a combination of lectures, case-study discussions, site visits, and a core group project, you will learn to analyze environmental problems and evaluate solutions. You will integrate principles from environmental science, engineering, technology, and social science to address real-world challenges affecting water, air, and land. The objective is to equip you with the critical awareness and practical knowledge necessary to understand, communicate, and make responsible decisions about complex environmental issues.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)	Due date
Group Project 1	15%	11/03/2026 *
Mid-term Exam	30%	13/03/2026 *
Group Project 2	15%	06/05/2026 *
Final Exam	30%	08/05/2026 *
Course Participation and Learning Portfolio (in-class survey and feedback/reflection)	10%	04/02/2026-08/05/2026 *

Required Texts and Materials

N/A

Week	Topics	Brief Outline
1	Sustainable development	Concerns and approaches related to sustainable urban development
2	Soil health	Importance of soil health and strategies to safeguard food security and food safety
3	Water resources	Overview of global water resources and different geographical issues
4	Climate change	Impacts of climate change and mitigation strategies/policies
5	Carbon footprints and decarbonization	Concepts of carbon footprints and strategies for long-term decarbonization
6	Group Project 1; Mid-term Exam (Multiple Choice)	Students will conduct self-directed research on topics relevant to Weeks 1-5 and present their findings for a group project. The mid-term exam will be an individual, multiple-choice exam focusing on the lecture from Weeks 1-5.
7	Land contamination	Global land contamination and impacts on SDGs
8	Water pollution	Water pollution and impacts on SDGs
9	Water purification	Water and wastewater purification processes, and their contribution to SDGs
10	Clean air actions	Clean air action strategies and technologies, and their contribution to SDGs
11	Resources circularity	Resources circularity and sustainable waste management, and their contribution to SDGs
12	Green products	Concepts of eco-designs and practical concerns of green products, and their contribution to SDGs
13	Group Project 2; Final exam (Multiple Choice)	Students will conduct self-directed research on topics relevant to Weeks 7-12 and present their findings for a group project. The midterm test will be an individual, multiple-choice exam focusing on the lecture from Weeks 7-12.
	Site visits (to be confirmed)	Water/wastewater treatment facilities; Resource recovery treatment facilities