

The Hong Kong University of Science and Technology

UG Course Syllabus CIVL4450

[Course Title] Carbon footprint analysis and reduction

[Course Code] CIVL 4450

[No. of Credits] 3

[Any pre-/co-requisites] Nil

Instructors Name: Shelley Zhou

Email: cewwzhou@ust.hk

Course Description

This course aims to provide students with an understanding of the sources and impacts of climate change, national and international policies, Paris Agreement, carbon credits and offsetting concepts. As engineers to be, students will also be able to calculate an organization's carbon footprint, identify suitable mitigation strategies and provide carbon reduction solutions.

Assessments:

[List specific assessed tasks, exams, quizzes, their weightage]

Assessment Task	Contribution to Overall Course grade (%)
Individual Assignment	10%
Class Participation	10%
Group Project Paper	20%
Group Presentation	10%
Final Examination	50%

Required Texts and Materials

[List required textbooks, readings, and any other materials]

Textbook: Shelley Zhou (2020) Carbon Management for a Sustainable Environment
<https://www.springer.com/gp/book/9783030350611>

[Optional] Additional Resources

[List any additional resources, such as online platforms, library resources, etc.]

- Paris Agreement http://unfccc.int/paris_agreement/items/9485.php
- IPCC Special Report 2018: Global Warming 1.5C

- IPCC AR6 Synthetic Report: Climate Change 2023
- GHG Protocol: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard.
- HKEPD and EMSD Guidelines: Guidelines to Account for and Report on Greenhouse Gas Emissions and Removals for Buildings (Commercial, residential or Institutional Purposes) in Hong Kong 2010
- PAS 2050:2008: Specification for the Assessment of the Life Cycle Greenhouse Gas Emissions of Goods and Services
- BEAM Plus: Hong Kong Building Environmental Assessment Methods
- USEPA: Solid Waste Management and Greenhouse Gas, 2006