

The Hong Kong University of Science and Technology

UG Course Syllabus

Civil Engineering and Modern Society

CIVL1160

3 Credits

Pre-/co-requisites: N/A

Instructor: Yui Bun, CHAN

Email: ybchan@ust.hk

Office Hours: [Thu 9am - 12nn]

Course Description

The major objective of this course is to provide a general overview of civil engineering in Hong Kong and how engineers implement modern technology in infrastructure. Lecture content includes Construction Industry, Water Supplies, Highways, Flood Control, Drainage, Water Pollution Control, Sewerage, Port Works, Environment, Environmental Protection, New Town Development, Town Planning, Slope Protection, and Civil Engineering Practice.

A group project requires students to understand the engineering process and think about the pros and cons of recent civil engineering developments in Hong Kong, using an engineering perspective.

Students are encouraged to attend site visits to civil engineering projects or operational facilities to gain an appreciation of the workplace. Practicing civil engineers and other professionals accompany the students in outlining the necessary skills required to design and construct an engineering project or operational facility.

Contents:-

- What is Civil Engineering
- Construction Materials
- Design and Construction Process
- Buildings Structures
- Highways
- Bridges
- Water Supplies
- Flood Control/ Drainage
- Sewerage
- Port Works
- Environmental Protection
- Sustainable Development
- Slope Protection

Assessment Tasks:-

(i) Group Project:-

- Project groups of 7-8 members
- You may form your own group and nominate your own group leader by submitting the names and student IDs of all the group members to the TAs before the end of September.
- Group leaders will report the attendance records of the group meetings and any other special events that have occurred.
- 40% of the course mark.

1. Town planning report (20%)

- Max. of 5 A4 pages

2. Video clip production (20%)

- 3-5 minutes video clip presentation
- Assessment Rubric will be provided

(ii) Final Examination:-

- 2 hours Final Examination
 - Part A - Multi-choice questions
 - Part B - Short Questions
- 60% of the course mark

Teaching Tools:-

LMES: <http://lmes2.ust.hk/portal>

Class	Lecture Topic	Tutorial	Assessment
1	Introduction	N/A	
2	Construction Materials	N/A	
3	Tall Buildings	N/A	
4	Construction Industry	N/A	
5	Construction Industry	N/A	
6	Bridges	N/A	
7	Transportation System	N/A	
8	Land Reclamation	N/A	
9	Landslide Control	N/A	
10	Flooding Control	N/A	
11	Marine construction	N/A	
12		Revision	Project Video Submission
Exam Period			2 Hours Final Examination

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

- 1, (through lectures and video clips) to have a general understanding of the role of the civil engineers in the provision of basic infrastructure necessary to support the development and maintenance of urban and rural settlement
- 2, (via conversation with experienced practicing engineers during lectures and site visits) to have a clear picture regarding the engineering processes of design, construction, operation and maintenance of infrastructure
- 3, to understand the history and future plans of civil engineering development in Hong Kong. Introduce the need to consider the demands and expectations of the community, while having due regard for both the developed and fragile natural environment
- 4, (following the open-ended questions given in the group projects and case studies) gain experience in solving engineering problems by applying data collection and analysis skills
- 5, demonstrate that Ethics is the most important skill for civil engineers. Address the responsibilities of engineers and consequences of misconduct through newspaper cuttings, class discussions, case studies and introduction of the "Code of Ethics" introduced by the HKIE
- 6, (from the discussion with professional engineers regarding the recent social unrest due to infrastructure developments) understand and analyze social issues from an engineering as well as humanistic perspective

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

[List specific assessed tasks, exams, quizzes, their weightage, and due dates; perhaps, add a summary table as below, to precede the details for each assessment.]

Assessment Task	Contribution to Overall Course grade (%)	Due date
Video Production	20%	21/07/2025 *
Project Report	20%	21/07/2025 *
Final examination	60%	18/07/2025 *

* Assessment marks for individual assessed tasks will be released within two weeks of the due date.

Mapping of Course ILOs to Assessment Tasks

[add to/delete table as appropriate]

Assessed Task	Mapped ILOs	Explanation
Video Production	ILO4, ILO6	Practicing civil engineers and other professionals accompany the students in outlining the necessary skills required to design and construct an engineering project or operational facility. Video Production may include inspection of the following facilities during/after construction: water treatment

		plant, wastewater treatment plant, water storage dam, associated power station, river training site, high rise building and Long-span Bridge.
Project Report	ILO3, ILO5, ILO6	Group project will be assigned at the very beginning of the semester regarding different areas of interest in this course. Students are required to collect their own information, attend discussion meetings and prepare the final report throughout the semester. Besides, there are a total of 25 case studies being discussed during the lectures and open-ended questions are provided to stimulate thinking, students are encouraged to express their own idea during the class and they are required to select 2 cases and submit a short discussion report at the end of the semester.
Final examination	ILO1, ILO2, ILO3	2hrs final examination is provided to assess student's understanding regarding the course content

Grading Rubrics

	Exemplary (5)	Competent (3)	Needs work (1)	/30
Central Message	The video delivers a clear and compelling message. The message is memorable to the audience.	The video delivers a clear message. The message makes sense to the audience.	The video contains some relevant contents while the message might require some clarifications.	/5
Design and Organization	The video shows a well-thought storyline. Each part of the video is logically connected. It is very easy to follow.	The video shows certain elements of a storyline. Some parts of the video are connected. It is easy to follow.	The video shows a few elements of a storyline. Some explanations are needed for the audience to follow.	/5
Understanding of the Topic	The contents reflect an excellent and comprehensive understanding of the topic.	The contents reflect a good understanding of the topic.	The contents reflect a basic understanding of the topic.	/5
Use of Visual and/ or Audio Elements	The video is visually appealing. The use of graphics and sounds supports the delivery of the central message effectively.	The video is visually appealing. Some of the graphics and sounds support the delivery of the central message.	Some part of the video is interesting. A few graphics and sounds are useful.	/5
Innovative Thinking	The video contains novel or unique ideas. It provides the audience with a new perspective of the topic.	The video contains original thoughts. It helps the audience think about some possibilities.	The video mainly uses available ideas and presents some facts.	/5

Final Grade Descriptors:

[As appropriate to the course and aligned with university standards]

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.
B	Good Performance	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.
D	Marginal Pass	Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.
F	Fail	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.

Course AI Policy

No limitation on the use of Gen AI

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include [specific details, e.g., strengths, areas for improvement]. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Resubmission Policy

N/A

Required Texts and Materials

N/A

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to [Academic Integrity | HKUST – Academic Registry](#) for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

[Optional] Additional Resources

N/A