

The Hong Kong University of Science and Technology

UG Course Syllabus

Civil Engineering and Modern Society

CIVL1160

3 Credits

Pre-/co-requisites: N/A

Name: Yui Bun, CHAN

Email: ybchan@ust.hk

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.

Assessments:

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

Assessment Task	Contribution to Overall Course grade (%)
Video Production	20%
Project Report	20%
Final examination	60%

Required Texts and Materials

“Civil Engineering and Modern Society” – K. L. Chung

Not compulsory, lecture notes will be given via Canvas

[Optional] Additional Resources

Optional Construction Site Visit will be organized if the situation allowed.

Objectives:-

The major objective of this subject is to provide a general overview on civil engineering in Hong Kong and how engineers implement modern technology in infrastructure. Throughout the course, the followings tasks are to be achieved.

- 1, To ensure 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, To provide a clear picture regarding the engineering processes of design, construction, operation and maintenance of infrastructure.
- 3, To provide an understanding of the history and future plans of civil engineering development in Hong Kong.
- 4, To introduce modern technology adopted in flood control, portable water supply, bridge construction, wastewater treatment, environmental protection, etc.
- 5, To introduce the need to consider the demands and expectations of the community, while having due regard for both the developed and fragile natural environment.
- 6, To ensure some general knowledge and understanding on common civil engineering terms, signs, signals and tools that can be encountered in daily life.
- 7, To introduce the theory and operation of civil engineering projects for portable water supply; waste water treatment, flooding control, highway development etc.
- 8, To develop effective verbal and written communication skills.

Group project requires students to understand the engineering process and really think about the pros and cons of recent civil engineering developments in Hong Kong, using an engineering perspective. Students are required to organize group discussion meetings and the minutes of meeting will be submitted together with the final report to demonstrate student's participation and leadership skill.

2hrs final examination is provided to assess student's understanding regarding the course content.

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>

Week	Lecture Topic	Tutorial	Assessment
1	Introduction	N/A	
2	Construction Industry	No tutorial	
3	Tall Buildings	No tutorial	
4	Building and Environment	No tutorial	
5	Sustainable Development	No tutorial	
6	Green City Concept	No tutorial	
7	Bridges	No tutorial	
8	Transportation System	Site Visit (optional)	
9	Land Reclamation	Site Visit (optional)	
10	Water Treatment		
11	Flooding Control		
12	Marine construction		
13	Landslide Control	Revision	Project Video Submission
	Exam Period		2 Hours Final Examination