

# The Hong Kong University of Science and Technology

## UG Course Syllabus

### Civil Engineering Capstone Design Project

**CIVL4950**

3 Credits

Pre-/co-requisites: N/A

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### Course Description

Civl4950 aimed to integrate students' knowledge and technical skills from prior coursework into a comprehensive design project and foster teamwork and multi-disciplinary coordination towards solving open-ended design problems.

The course involve students actively in planning and design of a realistic civil engineering project and help to prepare students for professional practice in the engineering industry.

Students are required to set up a small civil engineering consulting firm of 16-17 Potential Engineers, with 3 design teams:-

Environmental Team (3-5 Engineers) shall cover EIA /DIA/SIA/TIA,

Geotechnical Team (5-7 Engineers) shall cover Geotechnics & Foundation, and

Structural Team (6-7 Engineers) shall cover Structural Design

### Assessments:

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

Assessment Task	Contribution to Overall Course grade (%)
<p>Lecture Attendance</p> <ul style="list-style-type: none"><li>● Students are REQUIRED to attend the lecture in relation to their design area. (.e. Members of STR team need to attend the lecture delivered by Ir Prof Paul Pang)</li><li>● All team members have to attend the Project Meeting Session</li></ul>	10%
Site Problem Investigation Report	30%
<p>Project Report</p> <ul style="list-style-type: none"><li>■ 20% for individual report and</li><li>■ 20% for the 3 reports taken together</li></ul>	40%

<ul style="list-style-type: none"> <li>● Consistency of format</li> <li>● Consistency of design parameters</li> <li>Consistency of assumptions</li> </ul>	
<p style="text-align: center;">Project Presentation</p> <ul style="list-style-type: none"> <li>● 20 Minutes Team Project Presentation</li> <li>● Online Submission</li> </ul>	20%

### Required Texts and Materials

N/A

### [Optional] Additional Resources

#### Topics Covered

- Civil engineering project life cycle
- Feasibility study & Design considerations
- Environmental impact assessment (EIA)
- Drainage and sewage impact assessments (DIA & SIA)
- Traffic impact assessment (TIA)
- Site Formation
- Foundation design
- Superstructure design
- FEM structural design concept

Date				
	Lecturer	Topic	Lecturer	Topic
<b>W1</b>	Project Briefing			
<b>W2</b>	CHAN	Architectural Aspect of Civil Eng. Design	CHAN	PNAP
<b>W3</b>	B. SUN	Site Form., GI & Geo. Design	B. SUN	Slope and Foundation
<b>W4</b>	P. PANG	Structural Systems & Loadings	P. PANG	Structural Design
<b>W5</b>	CHAN	EIA/TIA	CHAN	EIA/TIA
<b>W6</b>	CHAN	CIC Carbon Assessment Tools	CHAN	Slope W/

<b>W7</b>	<b>Scenario-based problem solving</b>			
<b>W7</b>	<b>CHAN</b>	<b>Structural Design Practice</b>	<b>CHAN</b>	<b>Data Collection Review</b>
<b>W8</b>	<b>CHAN</b>	<b>Site Formation Practice</b>	<b>CHAN</b>	<b>Structural Design Review</b>
<b>W9</b>	<b>CHAN</b>	<b>EIA/TIA Practice</b>	<b>CHAN</b>	<b>Site Formation Review</b>
<b>W10</b>	<b>CHAN</b>	<b>Design Consultation</b>	<b>CHAN</b>	<b>EIA/TIA Review</b>
<b>W11</b>	<b>Debriefing</b>			
<b>W12</b>	<b>Deadline for Report Submission</b>			
<b>Spring</b>	<b>Design feedback and review (All)</b>			