Subject Description Form

Subject Code	CSE48905
Subject Title	Design Project for Structural and Fire Safety Engineering
Credit Value	4
Level	4
Pre-requisite	All relevant CSE and BSE core subjects at Years 1 to 3
Exclusion	CSE48405
Objectives	To enable the students to develop the first hand practical design experience before graduation.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. identify, structure and analyze diverse problems arising from the changing constraints that influence engineering projects, such as economic, environmental, legal, social, health and safety, sustainability, and technological considerations; b. develop and function effectively in multi-disciplinary teams; c. to synthesize logical solutions to structural and fire engineering problems independently with a creative and imaginative mind; d. to work professionally and ethically; e. communicate logically and lucidly through drawing, calculation, and in writing; f. utilize the techniques, skills, and modern engineering tools necessary for engineering practice to meet desired needs within realistic constraints; g. cope with challenges and developments of the profession, including the increasing application of information technology in practice; h. to recognize the need for, and to engage in life-long learning The above-mentioned are written in line with the outcomes of the degree programme.
Subject Synopsis/ Indicative Syllabus	Students will be required to participate in the formulation of conceptual solutions to a large scale structural and fire engineering problem, appraisal of the feasible schemes and then recommend the selected scheme with rationale and justification. For example, a link is required to connect two places within an existing building where difficulties of access are apparent, and fire safety is a real concern. Students may be required to examine the feasibility of various fire protection schemes and explain with acceptable reasons for the

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<tr><td></td><td>finally chosen scheme. Students would also consider the construction techniques, the scheduling and management of the construction phase of the project and costs.</td></tr>
<tr><td>Teaching/Learning Methodology</td><td>The project will last for one semester. In general, students will work in group and are expected to have regular group discussions and meetings with their supervisors. Project briefing, lectures, and presentations of the projects will also be arranged.

The project includes the following components:
- design appraisal of distinct and viable schemes with appropriate sketches / drawings and calculations;
- scheme selection with justifications;
- preparation of design calculations to establish the size and form of typical and critical structural elements for the selected scheme;
- preparation of general arrangement drawings / structural framing including sufficient plans, elevations, sections and typical and critical structural details for estimating purposes; and
- fire engineering and safety schemes
- compilation of design reports

<u>Supervision</u>

Students are supervised by both academic staff and visiting lecturers. The visiting lecturers are experienced practicing engineers and will contribute to formulate real-life construction projects that are based on real engineering problems and bring in up-to-date practical engineering knowledge.

Students must pass both the project presentation and project Report, and achieve a passing overall score/ grade to pass the subject.</td></tr>
<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="8">Intended subject learning outcomes to be assessed (Please tick as appropriate)</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td><td>e</td><td>f</td><td>g</td><td>h</td></tr>
<tr><td>1. Project Presentation</td><td>50</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td></td></tr>
<tr><td>2. Project Report</td><td>50</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr>
<tr><td>Total</td><td>100 %</td><td colspan="7"></td><td></td></tr>
</table>

Notes:
Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</td></tr>
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<table>
<tr><td></td><td colspan="2">In this subject, students will work in a group and will have regular group discussions and meetings with their supervisors. Assessments methods include:

1. Project Presentation which comprises consultation meetings (30%), interim presentation (10%) and final presentation (10%);
2. Project Report which comprises seminar report, interim report (20%), and final report (30%).

Among the above weighting, 30% of it refers to group effort while 70% refers to individual effort.

Students must attain at least grade D in both coursework and final examination (whenever applicable) in order to attain a passing grade in the overall result.</td></tr>
<tr><td rowspan="6">Student Study Effort Expected</td><td>Class contact:</td><td>Average hours per week</td></tr>
<tr><td>▪ Consultation Meetings</td><td>2.7 Hrs.</td></tr>
<tr><td>▪ Project Presentation and Feedback</td><td>0.3 Hrs.</td></tr>
<tr><td>Other student study effort:</td><td></td></tr>
<tr><td>▪ Self Study and Project Works</td><td>9 Hrs.</td></tr>
<tr><td>Total student study effort</td><td>12 Hrs.</td></tr>
<tr><td>Reading List and References</td><td colspan="2">Code of Practice for Structural Uses of Steel, Hong Kong, 2011.

Buildings Department, the Hong Kong Special Administrative Region, Code of Practice for Structural Use of Concrete 2013.

Chartered Institution of Building Services Engineers (CIBSE) Guide E: Fire Safety Engineering, the latest edition, CIBSE, London, UK.

Code of Practice for Fire Safety in Buildings 2011, Buildings Department, Hong Kong Special Administrative Region (HKSAR), the latest version.</td></tr>
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