

Subject Description Form

Subject Code	CSE48405
Subject Title	Design Project for Structural and Fire Engineers
Credit Value	4
Level	4
Pre-requisite	All relevant CSE and BSE core subjects at Year 1 to 3
Objectives	To enable the students to develop the first hand practical design experience before graduation.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> 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 <p>The above-mentioned are written in line with the outcomes of the degree programme.</p>
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 finally chosen scheme. Students would also consider the construction techniques, the scheduling and management of the construction phase of the project and costs.

<p>Teaching/Learning Methodology</p>	<p>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.</p> <p>The project includes the following components:</p> <ul style="list-style-type: none"> - 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 including the foundation 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 <p><u>Supervision</u></p> <p>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.</p>																																																											
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<table border="1" data-bbox="536 1061 1414 1420"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="8">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> <th>g</th> <th>h</th> </tr> </thead> <tbody> <tr> <td>^a1. Project Presentation</td> <td>48</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td>^b2. 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>^c3. Seminar Report</td> <td>2</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></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Notes:</i></p> <p>^a Project Presentation: consultation meetings, presentation for schematic design and presentation for preliminary design.</p> <p>^b Project Report: report on schematic design and report on preliminary design.</p> <p>^c Seminar Report: students will be required to attend a technical seminar closely relevant to the subject and submit a seminar report.</p>		Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)								a	b	c	d	e	f	g	h	^a 1. Project Presentation	48	√	√	√	√	√	√	√		^b 2. Project Report	50	√	√	√	√	√	√	√		^c 3. Seminar Report	2				√			√	√	Total	100 %								
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	Total student study effort	12 Hrs.
Reading List and References	To be provided by the project supervisors.	