

## Subject Description Form

<b>Subject Code</b>	BRE273
<b>Subject Title</b>	Construction and Maintenance Technology
<b>Credit Value</b>	3
<b>Level</b>	2
<b>Pre-requisite / Co-requisite / Exclusion</b>	BRE261, or equivalent
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. To identify and understand the construction technology that is available for the construction of contemporary buildings.</li> <li>2. To provide the necessary skills to allow the evaluation of a range of technologies. towards the adoption of an appropriate design, construction and building maintenance decision.</li> <li>3. To identify and understand the deterioration mechanisms of buildings and to proposed remedies.</li> </ol>
<b>Intended Learning Outcomes</b>	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> <li>a. Possess knowledge of processes and methods on construction activities.</li> <li>b. Able to use the knowledge and methods for different types of construction.</li> <li>c. Possess knowledge on the code of practice, environmental and safety issues into the construction processes.</li> <li>d. Able to identify the causes of common defects and material deterioration.</li> <li>e. Able to diagnose building defects and propose remedial actions.</li> </ol>
<b>Subject Synopsis/ Indicative Syllabus</b>	<ul style="list-style-type: none"> <li>• Processes and methods of building construction (Justification: Before introducing details, giving a big picture of building construction is essential).</li> <li>• Foundation and basement structures.</li> <li>• System formworks.</li> <li>• Concrete properties and its deterioration.</li> <li>• Precast concrete construction.</li> <li>• Building deterioration mechanisms.</li> <li>• Dampness in buildings.</li> <li>• Testing and diagnosis of building defects, remedies and prevention.</li> <li>• Building repair.</li> <li>• Environmental and safety issues in construction.</li> </ul>
<b>Teaching/Learning Methodology</b>	<p>Interactive lectures, tutorials, seminars and/or laboratory visit are conducted throughout the semester. A lecture schedule outlining the topics to be introduced is distributed to the students at the beginning of the semester. During the lecture period topics are introduced, often with reference to professional journal papers. In tutorial periods, students are required to discuss real-life cases related to the lecture topic and during seminars students are required to present the findings of an assigned research topic. Students will be able to visualize and conduct some tests related to the lecture.</p>

<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				
			a	b	c	d	e
	1. Coursework	50%	√	√	√	√	√
	2. Examination	50%	√	√	√	√	√
	Total	100%					
<p>Students will be assessed by:</p> <p>(i) examination, including problem analysis and essay type question, accounting for 50% and</p> <p>(ii) through the medium of coursework accounting for 50% (1 group project presentation (20%) and 1 short written report of the group project (30%)).</p>							
<b>Student Study Effort Expected</b>	Class contact:						
	▪ Lectures		26 Hrs.				
	▪ Tutorials		13 Hrs.				
	Other student study effort:						
	▪ Student effort hours		83 Hrs.				
	Total student study effort		122 Hrs.				
<b>Reading List and Res</b>	<b>Indicative Reading List:</b>						
	Briffett, C. (1995), <i>Building Maintenance Technology in Tropical Climates</i> , Singapore University Press.						
	Chew, Y.L.M. (2009) <i>Construction Technology for Tall Buildings</i> . 3rd edition Singapore: Singapore University Press.						
	Chudley, R. (2006) <i>Advanced Construction Technology</i> (Rev. Ed.) 4 <sup>th</sup> Edition, Longman.						
	Foster J.S. & Greeno R. (2007) <i>Structure &amp; Fabric – Part II</i> , 7 <sup>th</sup> Edition, Mitchell, Pearson Prentice Hall.						
	Hinks, J. & Cook, G. (1997), <i>The Technology of Building Defects</i> , E. & F.N. Spon.						
	Lee, H.S. & Yuen, C.S. (1993), <i>Building Maintenance Technology</i> , MacMillan.						
	Chandler, I. (1991), <i>Repair &amp; Renovation of Modern Buildings</i> , McGraw-Hill.						
	Emmitt S. & Gorse C.A. (2010), <i>Barry's Introduction to Construction of Buildings</i> , 2 <sup>nd</sup> Edition, Wiley-Blackwell.						

