Subject Description Form

<table>
<tr><td>Subject Code</td><td>BRE3261</td></tr>
<tr><td>Subject Title</td><td>Building Maintenance Planning and Technology</td></tr>
<tr><td>Credit Value</td><td>2</td></tr>
<tr><td>Level</td><td>3</td></tr>
<tr><td>Pre-requisite / Co-requisite/ Exclusion</td><td>BRE265 or equivalent</td></tr>
<tr><td>Objectives</td><td>1. To strengthen students' building technology knowledge with a particular focus on the repair and maintenance disciplines;
2. To give students basic knowledge on how to manage maintenance efficiently and effectively.</td></tr>
<tr><td>Intended Learning Outcomes</td><td>Upon completion of the subject, students will be able to:
<table>
<tr><th>Item</th><th>Intended Professional Learning Outcomes</th></tr>
<tr><td>A1.</td><td>understand the causes of common defects and material deterioration.</td></tr>
<tr><td>A2.</td><td>diagnose common building defects and propose appropriate remedial actions.</td></tr>
<tr><td>A3.</td><td>monitor and supervise the quality of maintenance work.</td></tr>
<tr><td>A4.</td><td>understand the principles and execution of maintenance planning and management.</td></tr>
<tr><td>A5.</td><td>understand principles to evaluate maintenance needs.</td></tr>
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<tr><td>Subject Synopsis/ Indicative Syllabus</td><td><u>Maintenance Technology :</u>
Deterioration of common building materials – mechanisms and protection
Typical deteriorating factors for reinforced concrete in Hong Kong
Common defects of building elements
Health and environmental issues in building maintenance
Testing and diagnosis of building defects, remedies and prevention

<u>Maintenance Management & Planning :</u>
Types of maintenance, classifications and selection criteria
Maintenance planning and scheduling: budgeting, resources allocation and timing of maintenance
Alternative methods on executing of maintenance works: direct labour and contract out
Contract procurement for maintenance works
Safety and environmental considerations for maintenance works
Relationship between design and maintenance; feedback on design
Life cycle costing concept on selection of alternatives</td></tr>
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Teaching/Learning Methodology

Interactive Lectures will enable students to:

1. understand the deterioration mechanisms of common building materials and causes of building defects (A1)
2. be able diagnose the causes of building defects and to rectify the defects (A2, A3)
3. analyse and compare alternatives in the process of building repair (A4, A5)
4. apply the theories and concepts to upkeep the healthy condition of the building stocks (A3, A4)

Laboratory will enable students to:

1. identify the appropriate tests to diagnose defects (A1, A2)

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
		A1	A2	A3	A4	A5	
1. Coursework	20 %	✓	✓	✓	✓	✓	
2. Examination	80 %	✓	✓	✓	✓	✓	
Total	100 %						

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Students could demonstrate their understanding on the subject through the preparation of coursework and presentation. Problem-based learning and case study approach will be used.

Students' overall understanding of the subject will be assessed in the examination, on both the theoretical knowledge and practical application.

Student Study Effort Expected

Class contact:	
▪ Lecture	26 Hrs.
▪ Tutorial	5 Hrs.
Other student study effort:	
▪ Self-development	39 Hrs.
▪ Coursework preparation	10 Hrs.
Total student study effort	80 Hrs.

Reading List and

Recommended:

Briffett, C., (1995), *Building Maintenance Technology in Tropical Climates,*

References	Singapore University Press Buildings Department, HKSAR, (2002), *Building Maintenance Guidebook*, HKSAR The Chartered Institute of Building, (1990), *Maintenance Management: a Guide to Good Practice*, CIOB Chanter, B & Swallow, P., (2007), *Building Maintenance Management,2nd ed*, Blackwell Hinks, J. & Cook, G., (2001), *The Technology of Building Defects*, E. & F.N. Spon Lee, H.S. & Yuen, C.S., (1993), *Building Maintenance Technology*, Macmillan Lee, R., (2001), Lee's *Building Maintenance Management*, 4th ed., BSP Professional Books **Supplementary:** Addleson, L., (1992), *Building Failures: A Guide to Diagnosis, Remedy and Prevention*, 3rd ed., Oxford Chudley, R., (1981), *The Maintenance and Adaption of Buildings*, Longman Hull, B., (1988), *Non-destructive Testing*, MacMillan Miles, D., & Syagga, P., (1987), *Building Maintenance – A Management Manual*, Intermediate Technology Publications Ransom, W.H., (1987), *Building Failures – Diagnosis and Avoidance*, 2nd ed., E. & F.N. Spon Royal Institution of Chartered Surveyors, (2000), *Building, Maintenance: Strategy, Planning and Procurement"*, RICS Books. Seeley, I.H., (1987), *Building Maintenance*, 2nd ed., MacMillan