<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE326</th>
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<tbody>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21 Tut/Sem/Lab:21</td>
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<td>Student Effort Hours</td>
<td>120</td>
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<tr>
<td>Assessment Method</td>
<td>Coursework 30% Examination 70%</td>
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<tr>
<td>Credit Value</td>
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<tr>
<td>Pre-requisites</td>
<td>BRE291 or BRE294</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
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<tr>
<td>Exclusions</td>
<td>BRE312</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>Y.S. Wong (BRE)</td>
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**MAINTENANCE TECHNOLOGY & MANAGEMENT**

**Subject Aim:**

This subject is intended to:

1. Strengthen students’ building technology knowledge with particular focus on the repair and maintenance disciplines;
2. Give students a basic knowledge on how to manage the maintenance works efficiently and effectively.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Identify the causes of common defects and material deterioration.
2. Diagnose building defects and propose remedial actions.
3. Monitor and supervise the quality of maintenance work.
4. Understand the principles and execution of maintenance planning and management.
5. Evaluate maintenance needs and execute the work effectively.

**Brief Syllabus Content:**

**Maintenance Technology:**
- 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

**Maintenance Management & Planning:**
- 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

**Learning and Teaching Approach** (tasks and activities designed to achieve learning outcomes):

Students will learn this subject through lectures and supplemented by tutorials. Laboratory works, conducted in the University’s IC and the departmental laboratory, will also be introduced in order to facilitate learning of building defects and evaluate repair methodology. Tutorials will be conducted in different formats in order to encourage active participation and learning of students, e.g. problem-solving exercises, case studies, presentations.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Assessment strategy (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively.

One piece of coursework will be assigned to each group. The coursework will include a written report (80%) together with a presentation (20%).

Reading List:

Recommended:


Buildings Department, HKSAR, (2002), *Building Maintenance Guidebook*, HKSAR

The Chartered Institute of Building, (1990), *Maintenance Management: a Guide to Good Practice*, CIOB


Supplementary:


