**WORKSHOP PRACTICE AND DRAFTSMANSHIP**

Subject Code: BRE222  
Level: 2  
Student Effort Hours: 120  
Contact Hours WS: 63  
Assessment Method: Coursework 100%  
Credit Value: 3  
Pre-requisites: Nil  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: Ir. Albert Kwok (IC)

**Subject Aim:**

*This subject is intended to:*

1. Provide an opportunity for students to ‘learn by doing’ in terms of participating in practical construction work, drawing interpretation and preparation.

**Learning Outcomes:**

*Students will demonstrate their ability to:*

1. Appreciate good skills and workmanship for the major trades in building projects.
2. Aware drawing interpretation and draftmanship in manual and computer application.

**Syllabus Content:**

**Formwork**  
Introduction to types of formwork used for precast and ‘on-site’ work, and to the supports used with such formwork.

Timber formwork for beam and column detailing.

**Concrete Practice**  
Concrete - types, materials, mixtures, workability.

Batching, mixing and placing of concrete.

Site Quality Control tests.

Concrete finishes.

**Reinforcement Practice**  
Reinforcement types, uses, materials, accessories.

Erection of steel reinforcement with thin wall construction.

Erection of steel-ply formwork.

**Plumbing and Drainage**  
Drainage Systems - types, uses, materials.

Laying and jointing pipes, water test.

Trench timbering, the erection of struts, walling and boarding.

**Structural Steel Work**  
Structural Steel Work - design, erecting and fixing features.

Jointing of beams and columns.

*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)*
<table>
<thead>
<tr>
<th>Syllabus Content: (Cont’d)</th>
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<tbody>
<tr>
<td><strong>Drafting</strong></td>
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<tr>
<td>Construction drawing: Drawing practice based on BS1192 &amp; BS308. Integration of drawing practice with building technology including sketching simple projections and perspective. Practical work (each student will carry out an individual project to produce building drawings).</td>
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<tr>
<td><strong>CAD</strong></td>
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<td>Introduction to CAD: Types, uses, merit, cost factors involved; Software Features of typical CAD systems for major construction projects.</td>
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<td>Basic 2D geometry functions - point, line, circle, arc.; Display functions - zoom, pan, fit, redraw, regen.; Annotation functions - dimensioning, test, label; Attributes - line thickness, colour, layer, filling; Plotting - different of plotting devices; Introduction to 3D drawing features - isometric, perspective, oblique projections, surface and solid modelling; Simple animation - flythrough, movie production.</td>
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<td><strong>Learning and Teaching Approach:</strong></td>
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<td>A practical introduction to selected types of building work with reference to types of materials, their selection, preparation, identification of defects, handling and storage, associated site operations, inspection and testing. The aim will be achieved through student participation and demonstration at the Industrial Centre.</td>
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<td><strong>Assessment:</strong></td>
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<td>Coursework will constitute the 100% of the overall marks of the subject. The coursework mark will be based on the assignments and seminar discussions.</td>
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