WORKSHOP PRACTICE AND DRAFTSMANSHIP

Subject Code: BRE222
Level: 2
Contact Hours: WS: 63
Student Effort Hours: 120
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 draftsmanship 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.

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)
Syllabus Content: (Cont’d)

Drafting
Construction drawing: Drawing practice based on BS1192 & 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).

CAD
Introduction to CAD: Types, uses, merit, cost factors involved; Software Features of typical CAD systems for major construction projects.

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.

Learning and Teaching Approach:

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.

Assessment:

Coursework will constitute the 100% of the overall marks of the subject. The coursework mark will be based on the assignments and seminar discussions.