Subject Code: BRE391  
Level: 3  
Contact Hours: Lect:21  
Lab/Sem/TU:21  
Student Effort Hours: 120  
Assessment Method: Coursework 30%  
Examination 70%  
Credit Value: 3  
Pre-requisites: BRE291 or BRE294 or equivalent  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: J.L. Hao (BRE)  
Y.S. Wong (BRE)

CONSTRUCTION TECHNOLOGY II

Subject Aim:

This subject is intended to:

The overall aim of the subject is to develop understanding of contemporary construction methods and processes associated with substructure, superstructure, cladding and internal elements in medium to large scale construction projects. The subject also aims to provide insight to the current themes that are driving developments in construction technology.

Objectives are:

1. To identify and understand the range of advance technologies that are available and appropriate for the construction of contemporary buildings.
2. To facilitate an understanding of the centrality of technological decision making in the context of the wider construction process.
3. To provide the necessary skills to allow the evaluation of a range of technologies towards the adoption of an appropriate design and construction decision.

Learning Outcomes:

On completion of the subject the students should have acquired the ability to:-

1. Possess knowledge of processes and methods for the development of construction projects.
2. Use the knowledge and methods for different types of construction.
3. Solve the identified technological problems occurred during construction projects’ processes.
4. Apply the code of practice, environmental and safety issues into the construction processes.

Brief Syllabus Content:

The overall process of a construction project.
Site production: engineering approach in producing the site layout and site planning.
Sub-structural construction: deep foundations including pile foundations and caissons, basement’s construction.
Super-structural construction: reinforcement concrete structures, steel structures, composite building systems.
Complex walls.
System formworks.
Environmental and safety issues in construction process.
IT in construction process.

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

A series of interactive lectures, tutorials and seminars will be delivered through the whole semester. These will be supplemented by guest speakers and laboratory works. Problem-based learning approach is adopted through projects to assess the students’ systematic knowledge and integrate the knowledge into real cases.

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 marks respectively.

The assessment will be focused on the students’ abilities:

To analyse and interpret the issues through construction process.
To apply the knowledge into a simulated situation;
To solve the key problems in other similar situations.
To improve communication and build up teamwork skills.

Reading List:

Recommended :


Supplementary:


BRE (British Research and Establishment) Digests.


Wong, W.S. (1991) Building Materials and Technology in Hong Kong, All Arts Ltd.