CONSTRUCTION TECHNOLOGY III

Subject Aim:

This subject is intended to:

1. Examine building production during construction. The component parts of the building fabric, whatever the form of construction, must be designed, fabricated and then assembled or erected on the site to produce the completed building. The processes must be properly chosen, planned and organized in order to achieve the optimum time, cost and quality requirements of the development project with minimum disturbances.

Learning Outcomes:

Students will demonstrate their ability to:

1. Solve the technological problems found on sites by workable solutions.
2. Assess and apply appropriate techniques to building production problems.
3. Apply a strategic approach to technological issues from the senior construction management point of view.

Brief Syllabus Content:

The integration of architectural, structural and building services in construction production.

Site production: methods of demolition and safety, building production systems, engineering approach in site/production planning, scheduling and control techniques, relevant resources e.g. mechanical plant; The issues of environmental protection during construction.

Concrete production: prestressing, post-tensioning and high-strength concrete, quality control; heat control and cooling systems in mass concrete production.

Prefabrication: on-site and off-site production and fabrication, transportation to site, site installation. Site fabrication.

Robotic construction.

Construction safety; Quality assurance.

Maintenance.

Sustainability.

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

Interactive lectures are used to identify construction issues, to generate and explain the concepts. Theories and practices in construction production and planning and hence how to solve the problem arisen. The tutorials are carried out in a systematic guidance in group discussion to consolidate the subject matters learned in the lectures and to view different perspectives of construction problems and solutions. In the lectures and tutorial, case studies are used to analyze and interpret the issues, solutions and practices of construction projects. Site visit will be arranged to incorporate what are learned in classroom situations to a real-life situation to further enhance the knowledge of application and integration of theories and practices.

Seminar presentations are arranged for students to work in team to investigate topics either presented in lectures/tutorials or contemporary issues or state-of-art construction practices or case study of the construction of a particular building, etc.

The learning emphasis will be on developing the students’ analytical and critical approach to the solutions of production problems with particular reference to the production techniques and management issues in local situations.

**Assessment strategy** *(assessment of student performance resulting from learning tasks)*:

In both written examination and coursework assignment, students are assessed their abilities in solving technological problems found in construction project taking into account of the assessment and application of appropriate techniques and methods with a strategic approach from the construction management point of view.

The coursework mark will be based on the laboratory activities assignments, seminar presentations and discussions and site visit reports. In both coursework and examination, students should demonstrate their application and appraisal of concepts and knowledge.

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

**Reading List:**


**Supplementary:**

