CMG7200 Advanced Construction Technology

Hours Per Week			Hours per Semester	Weighted Total Mark	Weighted Exam Mark	Weighted Continuous Assessment	Credit Units
LH	PH	TH	CH	WTM	WEM	WCM	CU
3	0	3	45	100	60	40	3

Course Description

Construction involves different types and levels of technology that enable building structures of different magnitudes to be constructed. This course focuses on technologies, materials and methods employed in construction of building structures and other large building projects.

Objectives/Aims

- To impart knowledge on assembly and performance of building structures:
- To know the materials, false-works, components, plant and equipment required in construction of framed structures
- To appreciate service requirements and safety regulations in large building structures.

Course Outline

1. Construction technology concepts, [5 CH]
   1.1 Forms and design.
   1.2 Construction equipment.
   1.3 Building standards.
   1.4 Quality control.

2. Substructure construction [5 CH]
   2.1 Temporary support,
   2.2 Excavation,
   2.3 soil testing,
   2.4 foundations (shallow, deep, piles, retaining walls),
   2.5 underpinning.

3. Superstructure construction [5 CH]
   3.1 scaffolding,
   3.2 reinforced concrete, s
   3.3 teelwork, timber,
   3.4 prestressed concrete,
   3.5 steelwork,
   3.6 timber,
   3.7 composites,
   3.8 masonry,
   3.9 prefabs.

4. Horizontal and other structures [5 CH]

4.1 hydraulic structures,
4.2 bridges,
4.3 off shore structures,
4.4 pavements.

5. Secondary works [5 CH]
   5.1 finishing,
   5.2 doors and shutters,
   5.3 joinery and adhesives,
   5.4 access to sites,
   5.5 building envelops.

6. Functional services [5 CH]
   6.1 drainage,
   6.2 water supply,
   6.3 electrical fittings.

7. Construction monitoring and appraisal. [5 CH]

8. Demolition, repair, renovation and maintenance. [5 CH]

9. Safety and health regulations. [5 CH]

Learning Outcomes
Understanding of construction techniques, materials, and methods for framed structures and large building construction projects.

Method of Teaching/Delivery
The course will be conducted through lectures, tutorials, site visits, and assignments. Basic lecture materials provided by the Lecturer will be supplemented by individual reading effort by students.

Assessment Method
Continuous assessment through assignments and tests, and final written examination. The final examination will carry 60% of the total mark, while continuous assessment will carry a total of 40%.

Reading/reference materials

Chudley R. 1973 & 1974. Construction Technology, Vols. 1 and 2. Longman, London.

Rangwala, S, C (1978), Building Construction 4th Edn, Charotor Book Stall. Anand Press, India.

Barry R., (1979), The Construction of Buildings Vols 3 and 4. Crosby Lockwood Staples, London.

Harris ( ) Modern Construction Equipment and Methods

Seeley 1. (1980), Building Technology, Macmillan, London.