PCI3I002 CONSTRUCTION TECHNOLOGY

Theory L/T (Hours per week): 3/0, Credit: 3

Module I(10 classes)

Introduction of various Civil Engineeringstructures, Functions of various components ofbuilding and other structures

Fundamentals of Construction Technology: Introduction, Construction activities, construction process, construction workers, construction estimating, construction estimate, construction schedule, productivity and mechanized construction, Quality and safety

Preparatory Work and Implementation: Site layout, Infrastructure development, construction methods, construction materials, deployment of construction equipment, prefabrication in construction, falsework and temporary work,

Module II (10 classes)

Earthwork: Introduction, Classification of soil, project site development, setting out, mechanized excavation, ground water control. Piling: classification of piles, pile driving methods, load test and quality control

Concrete and Concreting: Introduction, Important properties of concrete, Use of admixtures, formwork, shotcrete, lightweight and heavyweight concrete, ready-mix concrete, high performance concrete, self-compacting concrete, extreme weather concreting, prestressed concrete, under water concreting, curing of concrete, non-destructive testing of hardened concrete

Roof and roofing: Introduction, cast-in-situ reinforced concrete roofs, precast reinforced concrete roofs, roofs covered with sheets, water proofing over roofs

Finishing Work: Introduction, plastering, pointing, facing, glazing, flooring, painting,Construction joints-need and materialsused, Plumbing and electrification- various typesof fittings and laying procedure,

Module III (10 classes)

Mechanized Construction: Introduction, general consideration, plants for earthwork-tractor, bulldozer, ripper, scraper, face shovel, backhoe, dragline, clamshell etc., roller, plants for transportation, movement and handling- derrick, crane, hoist, concrete mixers and pumps, scaffoldingBuilding items: Plastering & pointing- its purpose,various types, construction procedures,advantages and disadvantages, suitabilityofeach, Damp proof course (DPC), Anti-termite measures and treatment, Construction joints-need and materialsused, Plumbing and electrification- various typesof fittings and laying procedure,

Module IV (6 classes)

Building Maintenance and Safety Measures: Purpose, need, importance, methods, Causes and types of defects in buildings, Preparation of report on maintenance work, Remedial measures and executionprocedure of any one type of buildingmaintenance work, Importance of various Laws / Norms / Regulations / Acts for safety, Precautions and precautionary Measures, Post-accident procedures.

Text Books

1. *Construction Technology, SubirSarkar and SubhajitSaraswati, Oxford University Press*
2. *Construction Planning and Management, U.K. Srivastava, Galgotia PublicationsPvt Ltd*
3. *Construction Engineering and Man agent, S. Seetharaman, Umesh Publications*