

4th Semester	RCI4D001	Construction Technology	L-T-P 3-0-0	3 CREDITS
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Module- I (10 hrs)

Introduction of various Civil Engineering structures, Functions of various components of building 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 (9 hrs)

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.

Module -III (8 hrs)

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 materials used, Plumbing and electrification- various types of fittings and laying procedure.

Module- IV (10 hrs)

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, scaffolding , Building items: Plastering & pointing- its purpose, various types, construction procedures, advantages and disadvantages, suitability of each, Damp proof course (DPC), Anti-termite measures and treatment, Construction joints-need and materials used, Plumbing and electrification- various types of fittings and laying procedure.

Module -V (8 hrs)

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 execution procedure of any one type of building maintenance work, Importance of various Laws / Norms / Regulations / Acts for safety, Precautions and precautionary Measures, Post-accident procedures.

Books:

- Construction Technology, Subir Sarkar and Subhajit Saraswati, Oxford University Press
- Construction Planning and Management, U.K. Srivastava, Galgotia Publications Pvt Ltd
- Construction Engineering and Management, S. Seetharaman, Umesh Publications
- Concrete Technology, Santha Kumar, Oxford University Press
- Construction Technology Analysis and Choice, Tony Bryan, Wiley
- Building Construction, B.C.Punmia, Laxmi Publication
- Building Construction, Sushil Kumar, Standard Publisher
- Building Construction, Rangwala