

DEPARTMENT OF CIVIL ENGINEERING

IV B. Tech, I Semester, Academic Year:2024-25

Course Name : CONSTRUCTION TECHNOLOGY AND PROJECT MANAGEMENT
L – T – P : 3– 0– 0
Course Instructor : P. SAI SRAVANI

SYLLABUS

CE4109PE: CONSTRUCTION TECHNOLOGY AND PROJECT MANAGEMENT

Pre Requisites: Building Materials & Building Construction

Course Objectives:

- This subject deals with overall planning, coordination and control of projects.
- This course gives the students scientific principles involved in construction, and
- Understanding of the behavior of construction materials and fundamentals of structural mechanics.

Course Outcomes:

At the end of the course, the student should be able to:

- Understand the roles and responsibilities of a project manager
- Prepare schedule of activities in a construction project
- Identify the equipment used in construction
- Understand safety practices in construction industry
- Prepare tender and contract document for a construction project

UNIT – I

Management -Fundamentals of construction project management: Introduction, Project Initiation and Planning.

UNIT - II

Planning of construction facilities - Earthwork construction - Equipment for construction, Construction Finances – decision making, Cement concrete construction- Construction of Piles - Construction of Cofferdams - Construction of Tunnels.

UNIT - III

Development of project activity networks, Precedence Diagram Method, Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), Line Balance Methods in scheduling, Time Value of Money, Investment Analysis, Cost-Benefit Analysis.

UNIT - IV

Introduction to Building Information Modelling (BIM), Lean construction, and Integrated Project Delivery in construction, crashing of project, Cost Optimization, Invoicing, Preparation of RA bill, Safety in construction, Estimation.

UNIT - V

Contracts: Contracts in construction, fundamentals of delay analysis and claims; Advances in construction management, tender and tender document - Deposits by the contractor - Arbitration. Negotiation - M. Book - Muster roll –stores.

REFERENCES:

- 1. Bennett, F. Lawrence., The management of construction: a project life cycle approach. Rutledge, 2003.**
- 2. Oberlender, Garold D., Project management for engineering and construction. Vol. 2. *New York: McGraw-Hill, 1993.***
- 3. Peurifoy, Robert Leroy, Cliff J. Schexnayder and Shapira A. Construction planning, equipment, and methods. No. 696 pp. McGraw-Hill, 2010.**
- 4. Chitkara, K. K. Construction Project Management. Tata McGraw-Hill Education, 2011**