

CONSTRUCTION MANAGEMENT

Lectures : 4 Periods/Week
Semester End Exam. : 3 Hours

Sessional marks : 40
Semester End Exam. marks : 60
Credits : 4

Course Objectives:

- Can able to plan different stages in construction project, project duration and job layout
- Using PERT and CPM able to determine critical path for projects.
- Optimization of project cost using cost control techniques.
- Learn importance of man power, materials and machinery in construction projects.
- Optimization of man power; total quality management, safety measures in construction projects, utilization of Management Information System.
- Learn economic terms like assets, capital, annuity, project profitability useful for planning project

Course Outcomes:

Student able to:

- Design shallow foundations and checking settlements.
- Student able to :
- Planning for any project and its duration.
- Optimization of men, material and project cost.
- Know the importance of machinery.
- Implementation of quality management, safety measures and best utilization of Management Information system.
- Assessing project profitability

UNIT – I

Introduction

Significance of Construction Management, Objectives and functions of construction management.

Planning and Scheduling

Planning techniques - Bar charts; Limitations of Bar Charts; Mile stone charts.

UNIT – II

Project Management through Networks

Objectives of network techniques; Events; Activities; Time estimates; Float and Slack; Critical path, near critical path; CPM and PERT and their use in Construction Planning; Difference between CPM and PERT; Probability of completion time for a project.

Cost Control

Direct cost; indirect cost; Total project cost; Optimization of cost through networks.

UNIT – III

Resource Management (Manpower)

Introduction; Resource smoothing; Resource leveling.

Construction Equipment

Different types of construction equipment and their use in Construction Industry; Factors affecting selection of Equipments; Owning and operating the equipment; Equipment maintenance.

UNIT – IV

Quality Control

Importance of quality; Elements of quality; Quality assurance techniques; Documentation; Total quality management.

Safety Management

Importance of safety; Approaches to improve safety in construction industry; Safety benefits to employers, employees and customers.

Project Economics

Time value of money; discounted cash flow analysis; Payback period; Return on investment; Benefit cost analysis, replacement analysis, Inflation.

NOTE:

Two questions of 12 marks each will be given from each unit out of which one is to be answered. Twelve questions of one mark each will be given from entire syllabus which is a compulsory question.

TEXT BOOKS:

1. Fundamentals of PERT/CPM and Project Management by S. K. Bhattacharjee; Khanna Publishers, 2004.
2. PERT & CPM Principles and applications by L. S. Srinath, 3rd Edition, Affiliated East West Press.

REFERENCE BOOKS:

1. Construction Engineering and Management by Dr. S. Seetharaman, 4th Edition, Umesh Publications, 2008.
2. Construction Planning, Equipment & Methods by Peurifoy R. L.; Tata McGraw-Hill, 2008.