IV Year II Semester	L	T	P	C
Code: 17CE841	3	1	0	3

PROJECT PLANNING AND MANAGEMENT
(ELECTIVE-II)

COURSE OBJECTIVES

1. To train the students in the fieldwork so as to have firsthand knowledge of practical problems related to Construction Management in carrying out engineering tasks
2. To optimize the time of construction of a project-by-project planning tool.
3. To update the planners at the site for material resources, time scheduling, and project cost.
4. To give knowledge of risk management and remedial measures.
5. To make students aware of different construction equipment.

COURSE OUTCOMES

Upon completion of this course, the students will be able

1. To plan, schedule, and control the construction of the project.
2. To use project planning tools.
3. To carry out a cost analysis and project updating.
4. To study risk analysis and resource allocation at site.
5. Understand different types of construction equipment uses and output.

Syllabus

Unit I: Project Management

Introduction, Project planning, scheduling, controlling, Role of the decision in projectmanagement, Project management Process, and role of Project Manager.

Unit II: **Project Planning Tools**

Bar Charts and Milestones Chart: Introduction, Development of bar chart, Short comings and remedial measures, Milestone charts.

CPM & PERT: Elements of the network, Time estimates, frequency distribution, mean, variance and standard deviation, probability distribution.

Network Analysis: Slack, Float, Critical path, crashing of activity

Unit III: **Cost Analysis & Updating**

Introduction, Projects cost: Direct cost, Indirect cost, the slope of the direct cost curve, total project cost and optimum duration, cost optimization.Project Updating: Introduction, updating process, data required for updating, steps in process updating.

Unit IV: Risk analysis and Resource allocation

Certainty, risk, and uncertainty, risk management, identification and nature of construction risks, contractual allocation of risk, types of risks, minimizing risks and mitigating losses, use of expected values, utility in investment decisions, decision trees, and sensitivity analysis.

Resource Allocation: Resource usage profiles, Resource smoothing, and leveling.

Unit V: Construction Equipment

Types of compaction Equipment, Types of Excavation and digging Equipment, Types of hoisting equipment, Types of Material HandlingEquipment, and Types of heavy earth moving equipment.

Text Books

1. Project Planning and Control with PERT and CPM by B. C. Punmia, K.K. Khandelwal, Laxmi Publication.
2. Sharma S.C. Construction equipment and management, Khanna Publishers,New Delhi.

Reference Books

1. Peurifoy,R.L., Ledbetter.W.B and schexnayder,C, construction planning and equipment methods, McGraw Hill, Singapore.
2. Callahan,M.T., Quackenbush,D.G.,androwing,J.E., Construction project scheduling, McGraw Hill ,New York.