PROJECT MANAGEMENT AND PLANNING

III Semester: COMMON FOR ALL BRANCHES								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
BSTC30	**Elective**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		3	0	0	3	30	70	100
Contact Classes: 45	**Tutorial Classes: Nil**	**Practical Classes: Nil**				**Total Classes: 45**		

I. COURSE OVERVIEW:

Construction project planning and administration the art of directing and coordinating human and material resources throughout the life of a project by using modern management techniques to achieve predetermined objectives of scope, cost, time, quality and participation satisfaction. Teaching these requirements by the designed course content.

II. COURSE OBJECTIVES:

The student will try to learn:

I. The construction project schedules, documents for planning and management of construction processes.
II. The various types of planning tools like bar chart, CPM networks and PERT analysis
III. The different methods of project delivery, roles and responsibilities of all constituencies involved in the design and construction process.
IV. The various types of construction contracts, their legal aspects and provisions.

III. COURSE OUTCOMES:

After successful completion of the course, students should be able to:

CO1	Apply the knowledge of management functions like planning, scheduling, executing and controlling of projects for completion of project within given time.	Apply
CO2	Apply the knowledge of network analysis of construction activities and optimize resources by using bar chart, CPM networks.	Apply
CO3	Apply the knowledge of modern construction practices and techniques to achieve quality of work in projects	Apply
CO4	Identify the resource planning and management in construction to improve the performance management and organizational effectiveness.	Apply
CO5	Understand the computer based models adopted in construction industry for optimization of cost and schedule of a project	Understand
CO6	Identify the different types of contracts in construction, arbitration, legal aspects and provision to safe guard the labor and human rights.	Apply

IV. SYLLABUS

MODULE –I: PROJECT MANAGEMENT (09)

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

MODULE –II: PROJECT PLANNING TOOLS (09)

Bar Charts and Milestones Chart: Introduction, Development of bar chart, Short comings and remedial measures, Milestone charts.CPM & PERT: Elements of network, Time estimates, frequency distribution, mean, variance and standard deviation, probability distribution. Network Analysis: Slack, Float, Critical path, crashing of activity.

MODULE –III: COST ANALYSIS & UPDATING (09)

Introduction, Projects cost: Direct cost, Indirect cost, slope of direct cost curve, total project cost and optimum duration, cost optimization.

Project Updating: Introduction, updating process, data required for updating, steps in process updating.

MODULE –IV: RISK ANALYSIS AND RESOURCE ALLOCATION (09)

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, sensitivity analysis. Resource Allocation: Resource usage profiles, Resource smoothing and levelling.

MODULE –V: CONSTRUCTION EQUIPMENT (09)

Types of compaction Equipment's, Types of Excavation and digging Equipment's, Types of hoisting equipment's, Types of Material handling Equipment's and Types of heavy earth moving equipment's.

V. TEXT BOOKS:

1. B. C. Punmia, K.K. Khandelwal, Project Planning and Control with PERT and CPM, Laxmi Publications, 2005.
2. Sharma S.C. "Construction Equipment and Management, Khanna Publishers, New Delhi, 2002.

VI. REFERENCE BOOKS:

1. Peurifoy,R.L, Ledbetter.W.B and schexnayder,C, "Construction Planning and Equipment methods, McGraw Hill, Singapore, 1993.
2. Callahan,M.T., Quackenbush,D.G.,and rowing,J.E., "Construction Project Scheduling, McGraw Hill, New York, 1998.
3. Cleland, D.I. and Ireland, L.R., "Project Management: Strategic Design and Implementation, McGraw Hill, New York, 2002.

VII. WEB REFERENCES:

1. https://nptel.ac.in/courses/105/106/105106149/
2. https://onlinecourses.nptel.ac.in/noc19_mg30/preview

VIII. E-TEXT BOOKS:

https://books.google.co.in/books/about/Project_Management_Planning_and_Control.html?id=BQa8wudi6AAC&redir_esc=y