CONSTRUCTION MANAGEMENT

Course Code	20HS7701E	Year	IV	Semester	I
Course Category	Humanities and Social Science Electives	Branch	Common to all	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	Construction materials and Concrete Technology
Continuous Internal Evaluation	30	Semester End Evaluation	70	Total Marks	100

	Statement
CO1	**Knowledge** on different methods of controlling and Work break down structure
CO2	A complete i**dea** on developing time estimates and problems on networkanalysis.
CO3	**Understanding** of cost analysis and resource allocation and scheduling
CO4	An **idea** on construction management, safety and roles of different stake holders
CO5	**Knowledge** on types of organization and related policies and acts

Contribution of Course outcomes towards achievement of Program outcomes & Strength of correlations (High:3, Medium: 2, Low:1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		2	2			2		3	2		2	1	1	2
CO2		2	2			2		3	2		2	1	2	1
CO3		2	2			2		3	2		2	1	2	1
CO4		2	2			2		1	1		1	1	2	2
CO5		2	2			2		1	2		2	1	2	2

Syllabus

UNIT	Content	Mapped CO
I	**Introduction to Construction Management :** Introduction : Origin of PERT and CPM, Planning, Scheduling and controlling, Bar Charts, Milestone charts, weaknesses in Bar charts, PERT and CPM networks and Problems, Comparison, Event, Activity, Rules for drawing networks Numbering the events (Fulkerson's law), Dummy activities, Work Break-down structure.	CO1
II	**CPM-PERT-Network Analysis:** Time estimate-Expected time, Earliest allowable occurrence time, Latest allowable occurrence time, slack and Problems, Problems on Network Analysis, project duration, probability of completion, Start and Finish time estimates, Floats and Problems, Project scheduling, Critical and sub-critical path. Updating – Process of updating; when to update	CO2

III	**CPM Cost Model & Resources allocations, resource scheduling:** Cost Analysis; direct and indirect costs, operation time, Normal and crash times and costs, Problems on cost analysis, Optimizing project cost, crash limit, Free floatlimit, Optimization Resource smoothening. Resource levelling.	**CO3**
IV	**Management:** Scope of Construction Management; Significance of Construction Management, Concept of Scientific Management; Safety in Construction, Qualities of Manager; The roles/functions performed by effective and competent Managers, The Manager: i) as a decision maker; ii) as a motivator; iii) as a communication-link; iv) as a conflict resolver; v) as a well – wisher of co-employees and the employer; etc Role playwith roles of different stakeholders of construction industry.	**CO4**
V	**Organization –** Types of organization; Merits and demerits of different types of organization – Authority –Policy– Labour Problems; Labour Legislation in India; 'Workmen's compensation Act of 1923 and Minimum Wages Act of 1948', and subsequent amendments.	**CO5**

Learning Resources	
Text Books	1. Dr. B. C. Punmia and K. K. Khandelwal, Project Planning andControl with PERT and CPM, 4/e, Laxmi Publications, 2016 2. Kumar Neeraj Jha, Construction Project Management: Theory and Practices, 2/e, Pearson Education, 2015
Reference Books	1. Dr. P. N. Modi, Rajeev Modi, PERT and CPM - Project Evaluation Review Technique and Critical Path Method, 5/e, Standard Book House, 2012. 2. L S Srinath, PERT and CPM Principles and Applications, 3/e, Affiliated East-West Press, 2001. 3. U.K. Shrivastava, Construction Planning and Management, 2/e, Galgotia Publications- New Delhi, 2000. 4. Kerzner H., Project Management- A systems approach to planning, scheduling and controlling, 10/e, John Wiley & Sons, Inc., New Jersey, USA, 2009.
e-Resources& other digital material	1. https://nptel.ac.in/courses/105104161/ 2. http://jntuk-coeerd.in/