Course Type	Course Code	Name of Course	L	T	P	Credit
OE	CEO303	Construction Management	3	0	0	9

Course Objective

To introduce the students to principles of construction management including the issues related to scheduling, financing, safety, and contracting. This will synthesize the construction management aspect for all aspects of engineering

Learning Outcomes

Upon successful completion of this course, students should:

- Develop a network for a project and estimate the optimized duration and cost of project
- Estimate the amount of transactions to be made between different stakeholders in a project
- Choose an economical viable option
- Understand contract management and legal implications associated with contracts
- Suggest safety and quality protocols to be followed in a construction project

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	**Introduction:** Importance of planning, WBS, learning curve, introduction to role of critical stakeholders, project goals and their inter-relationship.	3	Appreciate the need of managing a project and different aspects of management
2	**Scheduling of Project and Resource Optimization:** Bar-charts, Critical Path Method, PERT, Resource Leveling, Resource allocation, Network Crashing, Inventory management, ABC analysis	11	Determine the project completion time and optimized resources with a degree of confidence.
3	**Construction Economics:** Running account bills, Cash Flow diagrams, Time value of money, Economic Decision making, Depreciation and Inflation, Practical problems and Case study.	8	Estimate the payments in a contract and suggest the suitability of the different options
4	**Contract Management:** Types of contracts, Tendering, bid evaluation, Incentives and Disincentives, Construction claims, Disputes, and resolutions, Arbitration and other legal aspects, Quality costs.	5	Understand the mechanism of contracting and its legal implications.
5	**Safety Management:** Classification of accidents, PPE, implications of accidents, safety organization and officer, introduction to OSHA, Risk Assessment and Management in Construction Technology and Operations.	7	Understand safety and risk aspects in construction projects
6	**Accessible Design:** Principles, Urban and architectural design considerations	3	Understand the design considerations for achieving accessibility in constructed facilities for persons with disability
7	**Building Information Modelling:** Introduction to Building Information modelling, clash detection.	5	Identify clashes in a project during project pre-planning

Text Books:

- Jha, KN, Construction Project Management – Theory and Practice, Pearson
- Kerzner, H., Project Management – A systems approach to planning, scheduling and controlling, 10th edition, John Wiley & Sons, Inc., New Jersey, USA

Reference Books:

- Crundwell, F.K., Finance for Engineers-Evaluation and Funding of Capital Projects, Springer, London, UK
- Chitkara, K.K., Construction Project Management – Planning, Scheduling and Controlling, Tata Mcgraw Hill.