

INSTITUTE	DIPLOMA STUDIES
PROGRAM	DIPLOMA ENGINEERING (CIVIL ENGINEERING)
SEMESTER	6
COURSE TITLE	CONSTRUCTION PROJECT MANAGEMENT
COURSE CODE	09CI2602
COURSE CREDITS	4

Objective:

- 1 To understand the contract management and associated labour laws.
- 2 To prepare and understand the principles involved in site layout.
- 3 To know the procedure for scheduling of various activities in construction project.
- 4 To understand the labour laws, procedure for arbitration, settlements.
- 5 To know different safety measures in construction projects.
- 6 To Develop a comprehensive understanding of the fundamental role and impact of project planning in the construction industry.
- 7 To Gain a thorough understanding of the legal framework and principles governing contracts within the construction industry.
- 8 To Apply PERT and CPM techniques to optimize project schedules for time and cost efficiency, ensuring successful project completion.
- 9 To Analyze the causes of potential accidents and hazards at construction sites through resource management.

Course Outcomes: After completion of this course, student will be able to:

- 1 To manage construction projects effectively.
- 2 To understand and comply with legal and regulatory requirements as per contract.
- 3 To apply various project management techniques and tools.
- 4 To ensure project success through efficient resource allocation and risk management.
- 5 To know different safety measures in construction projects.

Pre-requisite of course: Construction Technology, Building Planning & Drawing

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	2	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	Construction Project and Organisation Types Importance of construction project management, Project life cycle, Stages in Construction, Causes of project failure, Organization types with its advantages and disadvantages	6
2	Contract Introduction of contract and its importance, Criteria for a valid contract, Types of contracts with its advantages and disadvantages, Disputes in the contract and its preventive measures	8
3	Construction Planning and Management Introduction of project planning, Project Planning-methods and factors affecting planning, Basic network analysis methods: CPM & PERT, Critical Path Method - Important terms, Basic, network rules, Basic examples of CPM network, PERT analysis: Optimistic time, Most likely time and pessimistic time of a project, Basic examples on PERT method, Cost optimization in the project, Recent trends for construction project planning and management	14
4	Construction Resource Management Resource management introduction and its purpose, Material management: Introduction, ABC analysis for material classification, material procurement through an online platform, and storage & safety of material, Manpower management: Introduction about Ministry of labour and employment, acts for labour such as Trade union act, Minimum Wage act, Contract labour act, child labour act etc. and safety of labours at construction site, Basics of Equipment management, Basics of project finance management, Safety management: Causes of accidents on site and its preventive measures at construction site, Project Management Information System (PMIS) concept	14
Total Hours		42

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	Experiment 1 Draw an organization structure / hierarchy of a government organisation related to construction field after referring Government of India online directory (iGOD)	2
2	Experiment 2 Mind mapping of the SWOT or SWOC analysis of a construction project of a company	2
3	Experiment 3 Project Case Study report: List the reasons of project failure along with feasible solution of a given case study	2
4	Experiment 4 Summary report on a given tender or contract through an authentic source	4

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
5	Experiment 5 Examples on CPM methods	4
6	Experiment 6 Examples on PERT methods	4
7	Experiment 7 Conduct a comprehensive financial analysis of the annual statement of a construction company, focusing specifically on projects involving Detailed Project Reports (DPRs), such as the Delhi Metro, Atal Tunnel, and Ahmedabad BRTS	2
8	Experiment 8 ABC analysis for material classification after procuring the material form an online platform	2
9	Experiment 9 Mind mapping of a construction labour laws / acts in India	2
10	Experiment 10 The topic of the Seminar shall be given to a group of students or on an individual basis. The students are required to submit and present/defend the Seminar in the presence of students and teachers and the report including a PowerPoint presentation to be attached with the submission. Each individual student's contribution to group work needs to be made explicit	4
Total Hours		28

Textbook :

- 1 Construction Project Management (Theory and Practice), Kumar Neeraj Jha, Pearson India Education services Pvt. Ltd, 2016

References:

- 1 Project Planning and Controlling with PERT And CPM,, Project Planning and Controlling with PERT And CPM,, Punmia, B.C. and Khandelwal, K.K, Laxmi Publications (P)Ltd, 2002
- 2 Construction of Structures and Management of works, Construction of Structures and Management of works, S. C. Rangwala, K. S. Rangwala, and K. K. Rangwala, Charotar Publishing House Pvt. Ltd, 2012

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery
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Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
30.00	40.00	30.00	0.00	0.00	0.00

Instructional Method:

- 1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.
- 2 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
- 3 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.
- 4 Students will use supplementary resources such as online videos, videos, e-courses, Virtual Laboratory.

Supplementary Resources:

- 1 Integrated Government Online Directory: Home (igod.gov.in)
- 2 <https://nptel.ac.in/courses/110104073>
- 3 <https://www.microsoft.com/en-in/microsoft-365/project/project-management-software>
- 4 <https://infra.market/>
- 5 <https://dir.indiamart.com/impcat/civil-engineering-service.html>
- 6 <https://labour.gov.in/>
- 7 <https://nhsrcl.in/en/home>