COURSECONTENT

CONSTRUCTION PROJECT MANAGEMENT (OpenElective)								
III Semester: SE								
Course Code	**Category**	**Hours/ Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
2532002	**Core**	3	0	0	3	40	60	100
Contact Classes:45	**Tutorial Classes:Nil**	**Practical Classes:Nil**				**Total Classes:45**		
Prerequisites:NIL.								

Course Overview:.

Construction Project Management is a course that focuses on the planning, execution, monitoring, and successful completion of construction projects within defined time, cost, and quality constraints. It covers key aspects such as project life cycle, stakeholder management, scheduling techniques like CPM and PERT, resource allocation, and cost control methods. The course also introduces tools and standards from organizations like the Project Management Institute and concepts from the PMBOK Guide. Emphasis is given to project monitoring, risk management, contract administration, and the use of modern software such as Primavera and MS Project

Course Objectives:

1. To understand the fundamentals of construction project management, project life cycle, roles of managers, and reasons for project failure.
2. To develop skills in planning, organizing, scheduling, and resource allocation using tools such as CPM, PERT, and network analysis.
3. To learn the integrated design–construction process, feasibility studies, functional design, and documentation for major infrastructure projects.
4. To manage project resources effectively, including labor, materials, equipment, time, and cost, while measuring productivity and performance.
5. Tounderstandconstructionriskmanagementandprojectcontroltechniques,includingcost control, scheduling control, EVM, and information systems.

Course Outcomes:

1. Describe the scope, characteristics, lifecycle, and managerial responsibilities involved in construction project management.
2. Interpret project planning, scheduling, and resource organization using CPM, PERT, and network analysis techniques.
3. Examine design and construction integration, feasibility aspects, and documentation procedures for major construction projects.
4. Demonstrate effective utilization of labor, materials, equipment, time, and cost for enhanced construction productivity.
5. Formulate risk control and performance monitoring strategies for efficient project execution.

SYLLABUS:

UNIT–I

Introduction: Phase of project, project management and its relevance, stakeholders of a project, structure of project organization, management levels, and traits of a project manager.

UNIT–II

Construction Planning: Introduction, activities involved types of project plan, work breakdown structure. Planning terminologies, Critical path method, forward and backward pass, AOA, AON, Precedence Diagramming Method (PDM), PERT, Line of balance.

UNIT–III

Project scheduling and resource levelling: Introduction, Resource allocation and levelling for unlimited resources, Resource allocation for limited resources, Multi resource allocation, Optimal scheduling.**UNIT–IV**

ProjectMonitoringandControl:Introduction,Projectupdating,TimeCostTradeoffAnalysisand Earned Value Analysis. IT tools for project data updating.

UNIT–V

Project Risk Management: Risk register, identification, evaluation, allocation, avoidance and sharing of risk. Delay Analysis and Case Studies.

REFERENCES:

1. Constructionprojectschedulingandcontrol.Mubarak,SalehA,JohnWiley&Sons,2015,3rd Edition.
2. Constructionprojectmanagement:Theoryandpractice.Jha,KumarNeeraj,PearsonEducation India, 2011, First Edition.
3. Projectmanagement:strategicdesignandimplementation,Cleland,DavidI.McGraw-HillEducation, 2007, 5th Edition.
4. Constructionprojectscheduling.Callahan,MichaelT.,DanielG.Quackenbush,andJamesE. Rowings. McGraw-Hill 1992, 1st Edition.
5. Construction project management. Clough, Richard H., Glenn A. Sears, and S. Keoki Sears. John Wiley & Sons, 2000, 4th Edition.
6. Projectmanagementforengineeringandconstruction.Oberlender,GaroldD.McGraw-Hill Education, 2014, First Edition.
7. Precedence and arrow networking techniques for construction. Harris, Robert Blynn. University of Michigan, 1973, First Edition.
8. Criticalchain:Abusinessnovel.Goldratt,E.M.,Routledge,2017.
9. Projectmanagementbodyofknowledge(pmbok®guide),Guide,A.,InProjectManagementInstitute, 2021, Seventh Edition.
10. ConstructionProjectManagement-Guidelines:Part1General,IS15883(Part1),BureauofIndian Standards, 2009.
11. ConstructionProjectManagement-Guidelines:Part2TimeManagement,IS15883(Part2), Bureau of Indian Standards, 2013.

ELECTRONICRESOURCES:

https://nptel.ac.in/courses/105104161

MATERIALSONLINE:

1. Course template
2. Tutorialquestionbank
3. Definitionsand terminology
4. Assignments
5. Modelquestionpaper–I
6. Modelquestionpaper–II
7. Lecture notes
8. E-LearningReadinessVideos(ELRV)