

COURSE CODE: ENE-353
COURSE NAME: Environmental Nanotechnology
CREDIT HOURS: Theory = 2 Practical = 0 Total = 2
CONTACT HOURS: Theory = 32 Practical = 0 Total = 32
PREREQUISITE: None
MODE OF TEACHING: Two hours of lecture per week

COURSE DESCRIPTION:

The aim of this course is to prepare and develop the future young engineers in the field of Project Management; enabling them to smoothly tackle all PM related issues which they would encounter in their professional career. How the project management is done in the real world and skills and core competencies required by a successful engineering manager entrusted with the task of project management.

COURSE OBJECTIVES:

The aim of this course is to prepare and develop the future young engineers in the field of Project Management.

RELEVANT PROGRAM LEARNING OUTCOMES (PLOs):

The course is designed so that students will achieve the PLOs:

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|------------------------------------|--------------------------|-----------------------------------|-------------------------------------|
| 1 Engineering Knowledge: | <input type="checkbox"/> | 7 Environment and Sustainability: | <input type="checkbox"/> |
| 2 Problem Analysis: | <input type="checkbox"/> | 8 Ethics: | <input type="checkbox"/> |
| 3 Design/Development of Solutions: | <input type="checkbox"/> | 9 Individual and Teamwork: | <input type="checkbox"/> |
| 4 Investigation: | <input type="checkbox"/> | 10 Communication: | <input checked="" type="checkbox"/> |
| 5 Modern Tool Usage: | <input type="checkbox"/> | 11 Project Management: | <input checked="" type="checkbox"/> |
| 6 The Engineer and Society: | <input type="checkbox"/> | 12 Lifelong Learning: | <input type="checkbox"/> |

COURSE LEARNING OUTCOMES:

Upon successful completion of the course, the student will demonstrate competency by being able to:

Sr. No.	CLO	Domain	Taxonomy Level	PLO
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1	DEFINE a Project and how to manage it, what could be the managerial skill and how they can be applied in the field	Cognitive	1	11
2	UNDERSTAND the components of good project management skills. Role of project manager in different professions and how to apply Problem-Solving, Decision-Making techniques and use of project scheduling charts.	Cognitive	2	11
3	PRESENT project lifecycle portfolio affectively	Affective	2	10

PRACTICAL APPLICATIONS:

The course teaches the students the subject of Planning and Project Management; right from the project idea, selection, planning and budgeting, scheduling, resource allocation, execution and controlling. The course covers principles applications and different management techniques required to effectively manage, motivate, lead people and accomplish technical projects in time within the allocated resources. The issues related to environment, engineering ethics, project organizational structure and Project management software's available in the market would also be discussed.

TOPICS COVERED:

Week#	Topic Covered	Reading Assignment/ Homework	CLO #
1	What is Project? Difference between routine work and project? Project Life Cycle, The Project Manager, Importance of Project Management.	Chapter 1, 2	1
2	Strategic Management Process, Need for Effective Project Portfolio, A Portfolio Management System, applying a Selection Model, Managing the Portfolio System	Chapter 1, 2, 3	1
3	Project Management Structures, what is the right Project Management Structure, Organization Culture.	Chapter 3, 4 Assignment 1 Quiz 1	1
4	Defining the Project Scope, Establish Project Priorities, Creating the work breakdown	Chapter 3, 4	1

	structure (WBS), Integrating the WBS with Organization, Coding the WBS for Information System, Process breakdown Structure, Responsibility Matrix and Project Communication Plan.		
5	Factor Influencing the Quality of Estimate, Estimating guidelines, 4 time cost and resources, Top down Vs Bottom up Estimation.	Chapter 3, 4	1
6	Developing the Project Network, Activity on Node Fundamentals, Using the Forward and Backward pass Information, and Extended to the Network Techniques to come closure to reality.	Chapter 4 Assignment 2 Quiz 2	1
7	Risk Management Process, Contingency Planning, Risk Response Control.	Chapter 5	1
8	Overview of the Resource Scheduling Problem, Types of Resource Constraint, Resource Allocation Method, Computer Demonstration of Resource Constraint Scheduling.	Chapter 6, 7 Assignment 1 Quiz 3	1
9	Mid Semester Exam		
10	Rational for Reducing Project Duration, Option for Accelerating Project Completion, Project Cost/Duration Graph.	Chapter 6, 7	2
11	Managing Vs Leading a Project, Managing Project Stake Holders, Social Network Building, and Ethics in Project Management.	Chapter 9, 10	2
12	The 5 Stage Team Development Model, Building High Performance Project Team	Chapter 9, 10 Quiz 4	2
13	Managing Virtual Project Team, Project Team Pitfalls.	Chapter 9, 10	2
14	Outsourcing Project Work, The Art of Negotiation.	Chapter 11 Quiz 5	2
15	Project Control Process, Monitoring Time Performance, developing a Status Report, Forecasting Final Project Cost.	Chapter 12	2
16	Project Audit Process, Project Closure, Project Manager Evaluations, Environmental Factors, Project Site Selection	Chapter 13 Quiz 6	2

17	Project Presentations	-	3
18	End Semester Exam		

LIST OF PRACTICALS:

Not Applicable

Sr. No.	Practical	CLO #
1		
2		
3		

TEXT AND MATERIAL:

Textbook (s)

1. Project Management, Latest Edition Ed. By Clifford F. Gray & Erik W. Larson

References Material:

1. Project Management, *Seventh Edition*, Jack R. Meredith & Samuel J. Mental
2. Essential of Project Management by Kamaraju Ramakrishna
3. Management, *Seventh Edition*, Stephen P. Robins & Mary Coutler

ASSESSMENT SYSTEM:

Theoretical/Instruction	100%
Assignments	05%
Project	10%
Quizzes	10%
Mid Semester Exam	25%
End Semester Exam	50%
Practical Work	0%
Lab Attendance	0%
Lab Report	0%
Lab Quiz	0%
Lab Rubrics	0%