ENS-326 ENVIRONMENTAL MANAGEMENT SYSTEMS 3(2+1)

COURSE CODE:	ENS-326		
COURSE NAME:	Environmental Management Systems		
CREDIT HOURS:	Theory = 02	Practical = 01	Total = 03
CONTACT HOURS:	Theory = 32	Practical = 48	Total = 80
PREREQUISITE:	None		
MODE OF TEACHING:	2 hours of Lecture and 3 hours of Lab per week (67% + 33%)		

COURSE DESCRIPTION:

This course is aimed at providing training students on designing Environmental Management Systems for any organization in order to enable them to contribute in planning and implementation of EMS in an organization**.**

COURSE LEARNING OUTCOMES:

By the end of this course, students will be able to:

a) Understand basic principles and components of Environmental Management Systems (EMS).
b) Describe the benefits of implementing EMS.
c) Analyze case studies of EMS implementation in various sectors.
d) Understand key regulatory and compliance requirements as applied to EMS.

TOPICS COVERED:

Theory:

Week	Topics
1	Environmental management systems
2	Corporate social responsibility
3	Environmentally responsible business initiative
4	Principles of green economic growth
5	Environmental aspects of an organization: overview
6	Environmental aspects of an organization: identification
7	Environmental impacts of an organization: prediction
8	Environmental impacts of an organization: assessment
9	**Mid Semester Exam**
10	Environmental impacts of an organization: baseline and alternatives
11	Environmental impacts of an organization: mitigation
12	Environmental resources of an organization
13	Environmental management systems for an organization
14	Environmental management plans for organizations
15	Implementation and monitoring of EMS in organizations
16	Implementation and monitoring of EMS in organizations
17	Group presentations and discussions
18	**End Semester Exam**

Practical:

No.	Practical/ Topics
1	Identification of potential environmental aspects of an organization
2	Development of a waste management system/ plan for an organization
3	Development of an energy management system/ plan for an organization

4	Development of a water management system/ plan for a laboratory
5	Development of a recycling system for an organization
6	Development of an environmental management plan for a developmental project
7	Development of an environmental monitoring plan for a organization
8	Apply EMS tool(s) for environmental evaluation of an organization/ facility
9	Case study of an organization that has implemented an EMS
10	Field investigation of an organization that has implemented an EMS

TEXT AND MATERIAL:

1. Environmental Management Systems: Implementation Guide for Small and Medium-Sized Organizations. Latest edition. U.S. Environmental Protection Agency.
2. Environmental Management Systems: General Guidelines on Principles, Systems and Support Techniques. Latest edition. American Society for Quality, International Organization for Standardization. American Society for Quality.
3. Environmental Management Systems: A step-by-step Guide to Implementation and Maintenance, Sheldon,C. and Yoxon, M. Latest edition.

ASSESSMENT SYSTEM:

Theoretical/ Instruction		
Assessment Category	**Marks Distribution (%)**	
	Without Project	**With Project**
Quiz	15	10-15
Assignment	10	5-10
MSE	25	25
Project	-	5-10
ESE	50	45-50
Lab (if Applicable)		
Assessment Category	**Marks Distribution (%)**	
Lab Work/ Psychomotor Assessment/ Lab Reports	50–70	
Lab Project/ Open-ended Lab Project/ Assignment/Quiz	10–20	
Final Assessment/ Mid Semester Assessment (Written, viva, hands-on experimentation, group task)	20–30	