Syllabus for Diploma Engineering

Civil Engineering

Semester – II

Subject Name: Environment Conservation & Disaster Management

Subject Code: 09CI1102

Diploma Branches in which this subject is offered: Civil, Mechanical, Electrical, Computer, Chemical Engineering

Objective: Objectives of introducing this subject at first year level in all the branches are:

- To sensitize the students to environmental concerns and their impact on society and business
- To familiarize the students with strategies for addressing environmental issues
- Be better prepared to recover from a major natural catastrophe

Credits Earned: 2 Credits

Course Outcomes:

On the completion of the course student will be able to:

- Identify environmental factors and their impact on society and business
- Articulate strategies to deal with environmental issues
- Develop an ethical orientation to managing the environment
- To gain knowledge about disaster and understand Engineering challenges for Hazard Management
- apply tools & techniques for disaster risk assessment of Infrastructure, preparing disaster management plan and Damage Assessment
- role of Engineer in climate change which is one of humanity's biggest challenges of the 21st century

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term work	
0	0	4	2	0	30	20	25	25	100

Contents:

Unit	Topics	Contact hours	Weightage (%)
Environment Conservation			
1	**Introduction** • What is Environment • Why to study Environmental Conservation • Importance of environment and scope	**4**	**10**
2	• **Global Environment Problems** • Causes, Effects & Remedies: Global Warming, Acid Rain, Ozone Depletion, Climate Change	**2**	**5**
3	**Environmental By-laws** • Indian law of Environment	**2**	**5**
4	**Pollution Types & its Effects** • Air Pollution • Water Pollution • Solid Waste Pollution • Noise Pollution	**8**	**19**
Disaster Management			
5	**Introduction** • Concepts and definition of Disaster, Hazard, Risk, Vulnerability, Capacity • Disaster and Development • Role of Engineer in Disaster management	**6**	**15**
6	**Natural Disasters** • Earthquake • Cyclone • Floods • Volcanoes	**8**	**19**
7	**Man Made Disaster** • Armed conflicts and civil strip • Technological disasters • Human Settlement • Slow Disasters (famine, draught, • epidemics)	**8**	**19**

8	**Rapid Onset Disasters** • Air Crash • tidal waves • Tsunami	**4**	**10**

Suggested Theory distribution:

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

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyse	Evaluate	Create
35%	40%	15%	10%	0%	0%

Suggested List of Experiments:

Sr. No.	Name
1	Digital sound level meters (to check noise pollution)
2	Digital air quality meter (to measure air pollution)
3	Digital handheld anemometer (to measure wind speeds)
4	Digital hand held pyranometer (to measure solar radiation levels)

Instructional Method:

a. 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.

b. The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

c. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

d. Students will use supplementary resources such as online videos, videos, e-courses, Virtual Laboratory

Text Books:

1. Environment Engineering and Disaster Management Sharma, Sanjay K. Luxmi Publications, New Delhi

Reference Books:

1. Environmental Studies by Anandita Basak, Pearson
2. Mechanics Environment Engineering and Disaster Management Sharma, Sanjay K. Luxmi Publications, New Delhi
3. Singh R.B. (Ed.), Natural Hazards and Disaster Management Vulnerability & Mitigation, Rawat Publications. Mechanics of Materials: Hibbler R C; Pearson Education
4. Modh Satish, Introduction to Disaster Management, Macmillan