DISASTER MANAGEMENT

VI Semester: CSE | IT | ECE | EEE | ME

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
ACE551	Open Elective-I	3	-	-	3	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes: 45		

OBJECTIVES:

The **course should enable the students to:**

I. Identify the major disaster types and develop an understanding of modern disaster management.
II. Recognize and develop awareness of the chronological phases of natural disaster response and refugee relief operations
III. Understand the key concepts of disaster management related to development and the relationship of different disaster management activities...
IV. Categorize the organizations that are involved in natural disaster assistance and relief system..

COURSE OUTCOMES (COs):

CO1 Environmental hazards and disasters: meaning of environmental hazards, environmental disasters and environmental stress; concept of environmental hazards.
CO2. Types of environmental hazards and disasters: Natural hazards and disasters.
CO3. Endogenous hazards, volcanic eruption, earthquakes, landslides, volcanic hazards/ disasters, causes and distribution of volcanoes, Earthquake hazards, hazardous effects of, earthquakes, earthquake hazards in India, human adjustment, perception and mitigation of earthquake.
CO4. Endogenous hazards, volcanic eruption, earthquakes, landslides, volcanic hazards/ disasters, causes and distribution of volcanoes, Earthquake hazards, hazardous effects of, earthquakes, earthquake hazards in India, human adjustment, perception and mitigation of earthquake
CO5. Emerging approaches in disaster management i.e pre, disaster stage (preparedness), emergency stage and post disaster stage, rehabilitation.

COURSE LEARNING OUTCOMES (CLOs):

The students should enable to:

1. Integrate knowledge and to analyze, evaluate and manage the different public health aspects of disaster events at a local and global levels, even when limited information is available..
2. Analyze and evaluate the environmental, social, cultural, economic, legal and organizational Aspects influencing vulnerabilities and capacities to face disasters. and to know about different types of environmental hazards.
3. Obtain knowledge on different types of natural and man- made disasters. Work theoretically and practically in the processes of disaster management (disaster risk reduction, response, and recovery).
4. Describe endogenous and exogenous hazards their harmful effects to the environment. Case studies of India.
5. Analyze, and communicate information on risks, relief needs and order to formulate strategies for mitigation..
6. Understand the Mitigation and control measures of exogenous hazards..
7. Understand different approaches of different phases Determine the optimum dosage of super plasticizer.
8. Capacity to analyze and evaluate research work on the field of emergencies and disaster.
9. Demonstrating insight into the potential and limitations of science, its role in society and people's responsibility for how it is used. And emerging approaches of disasters.

10. Analyze the future scenarios with the ability to clearly present and discuss their conclusions and the knowledge and arguments..
11. Understand integrated approach for disaster preparedness, mitigation & awareness; Mitigation .
12. Understand different types of institution for disaster mitigation and management.
13. Design and perform research on the different aspects of the emergencies and disaster.
14. Design and perform research on the different aspects of the emergencies and disaster.
15. Understand different approaches to prevent disasters.
16. Understanding the race process of dealing with work place hazards.
17. Obtain knowledge on dentification of natural calamities that tends to hazards and disasters.

Unit – I	ENVIRONMENTAL HAZARDS AND DISASTERS

Environmental hazards and disasters: Meaning of Environmental hazards, Environmental Disasters and Environmental stress. Concept of Environmental Hazards, Environmental stress &Environmental Disasters. Different approaches & relation with human Ecology. Landscape Approach - Ecosystem Approach - Perception approach- Human ecology & its application in geographical researches.

Unit – II	TYPES OF ENVIRONMENTAL HAZARDS AND DISASTERS

Types of environmental hazards and disasters: Natural hazards and disasters, man induced hazards and disasters, natural hazards, planetary hazards/ disasters, extra planetary hazards/ disasters, planetary hazards, endogenous hazards, exogenous hazards.

Unit – III	ENDOGENOUS HAZARDS

Endogenous Hazards - Volcanic Eruption Earthquakes - Landslides - Volcanic Hazards/ Disasters - Causes and distribution of Volcanoes - Hazardous effects of volcanic eruptions - Environmental impacts of volcanic eruptions.

Earthquake Hazards/ disasters - Causes of Earthquakes - Distribution of earthquakes - Hazardous effects of - earthquakes - Earthquake Hazards in India - Human adjustment, perception & mitigation of earthquake.

Unit – IV	EXOGENOUS HAZARDS AND DISASTERS

Exogenous hazards/ disasters, infrequent events, cumulative atmospheric hazards/ disasters; Infrequent events: Cyclones , lightning , hailstorms; Cyclones: Tropical cyclones and local storms, destruction by tropical cyclones and local storms (causes, distribution human adjustment, perception and mitigation); Cumulative atmospheric hazards/ disasters: Floods, droughts, cold waves, heat waves floods; Causes of floods, flood hazards India, flood control measures (human adjustment, perception and mitigation); Droughts: Impacts of droughts, drought hazards in India, drought control measures, extra planetary hazards/ disasters, man induced hazards /disasters, physical hazards/ disasters, soil erosion, Soil erosion: Mechanics and forms of soil erosion, factors and causes of soil erosion, conservation measures of soil erosion; Chemical hazards/ disasters: Release of toxic chemicals, nuclear explosion, sedimentation processes; Sedimentation processes: Global sedimentation problems regional sedimentation problems, sedimentation and environmental problems, corrective measures of erosion and sedimentation, biological hazards/ disasters, population explosion.

Unit – V	EMERGING APPROACHES IN DISASTER MANAGEMENT

Emerging approaches in Disaster Management. Three Stages

1. Pre, disaster stage (preparedness)
2. Emergency Stage
3. Post Disaster stage, Rehabilitation.

Text Books:

1. Pardeep Sahni, "Disaster Mitigation: Experiences and Reflections", PHI Learning Pvt. Ltd., 1st Edition, 2001.
2. J. Glynn, Gary W. Hein Ke, "Environmental Science and Engineering", Prentice Hall Publishers, 2nd Edition, 1996.

Reference Books:

1. R.B.Singh (Ed), "Environmental Geography", 2nd Edition, 1990.
2. R.B. Singh (Ed), "Disaster Management", 2nd Edition, 2006.