DISASTER MANAGEMENT

VI Semester: CSE IT ECE EEE ME								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACE551	Open Elective-I	L	T	P	C	CIA	SEE	Total
		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.