



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

COURSE CONTENT

DISASTER MANAGEMENT								
I SEMESTER								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
22MBA006D	Open Elective	L	T	P	C	CIE	SEE	Total
		4	0	-	4	40	60	100
Contact Classes: 60	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes: 60			
Prerequisite: Basic knowledge of geography and environmental studies with an understanding of natural processes and human environment interactions.								

COURSE OVERVIEW:

This course provides an understanding of environmental hazards and disasters, including their types, causes, distribution, impacts, and mitigation measures. It covers natural and human-induced hazards such as earthquakes, volcanoes, cyclones, floods, droughts, and soil erosion, along with concepts of human ecology and environmental stress. The course also introduces modern approaches to disaster management and strategies for reducing environmental risks and improving resilience.

COURSE OBJECTIVES:

- To understand the basic concepts of environmental hazards, disasters, and environmental stress and their relationship with human ecology.
- To identify different types of natural and human-induced environmental hazards and disasters and their causes and distribution.
- To analyze the impacts of endogenous and exogenous hazards such as earthquakes, volcanoes, cyclones, floods, and droughts on the environment and society.
- To study methods of hazard mitigation, disaster preparedness, and human adjustment strategies for reducing environmental risks.
- To develop an understanding of modern disaster management approaches and environmental conservation measures such as soil erosion control and sedimentation management.

COURSE OUTCOMES: After Completion of the course, students should be able to

1. Analyze environmental hazards, disasters, stress through landscape, ecosystem, and perceptual approaches in the context of human ecology
2. Classify the various types of environmental hazards and disasters into natural, man-induced, planetary and extra-planetary categories.

3. Analyze the causes, effects and management of endogenous hazards, encompassing volcanoes, earthquakes & landslides.
4. Mitigate exogenous environmental hazards & disasters exemplified by cyclones, floods, droughts and soil erosion.
5. Design emerging approaches for disaster management preparedness and response with appropriate measures.

UNIT-I: Environmental Hazards & 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 & Disasters: Natural hazards and Disasters - Man induced hazards & Disasters - Natural Hazards – Planetary Hazards / Disasters - Extra Planetary Hazards / disasters - Planetary Hazards – Endogenous Hazards-Exogenous Hazards

UNIT-III: 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/disasters- Infrequent events-Cumulative atmospheric hazards / disasters. Infrequent events: Cyclones - Lightning – Hailstorms. Cyclones: Tropical cyclones & Local storms - Destruction by tropical cyclones & local storms (causes, distribution human adjustment, perception & mitigation) Cumulative atmospheric hazards/ Disasters: -Floods - Droughts- Cold waves – Heat waves Floods: -Causes of floods-Flood hazards India. Flood control measures (Human adjustment, perception & 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 & forms of Soil Erosion - Factors/causes of Soil Erosion-Conservation measures of Soil Erosion

UNIT-V: Emerging approaches in Disaster Management- Three stages Chemical hazards/disasters: Release of toxic chemicals, nuclear explosion-Sedimentation processes Sedimentation processes: - Global Sedimentation problems Regional Sedimentation problems – Sedimentation & Environmental problems –Corrective measures of Erosion & Sedimentation. Biological hazards /disasters: Population Explosion-Pre-disaster Stage (preparedness)-Emergency Stage-Post Disaster stage–Rehabilitation.

TEXT BOOKS:

1. Rivera, Jason D., ed. “Disaster and Emergency Management Methods: Social Science Approaches in Application”, Routledge, 8th Edition, 2021.

2. Kapoor, Mukesh. "Disaster management", Saurabh Publishing House, 6thEdition, 2020.
3. Elvas, Luís B., "Disaster Management in Smart Cities", Smart Cities, 4thEdition, 2021.
4. D.R Khullar, "Environment & Disaster Management", 3rdEdition, 2021.
5. Brebbia, C. A., ed. "Disaster Management", WIT Press, 6thEdition, 2018.
6. Frumkin, Howard, ed. "Environmental health: from global to local", John Wiley & Sons, 11thEdition, 2016.

REFERENCE BOOKS:

1. Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi
2. R K Bhandani, "An overview on natural & man-made disasters and their reduction", CSIR, New Delhi
3. World Disasters Report, International Federation of Red Cross and Red Crescent, Switzerland, 2009.
4. Coppola D P, "Introduction to International Disaster Management", Elsevier Science (B/H), London, 2007.

ELECTRONIC RESOURCES:

1. https://www.iare.ac.in/sites/default/files/lecture_notes/dm%20notes.pdf
2. <http://www.cbse.nic.in/natural%20hazards%20&%20disaster%20management.pdf>
3. <http://196.223.158.148/bitstream/handle/123456789/619/Improving%20Disaster%20Management.pdf?sequence=1&isAllowed=y>
4. https://books.google.co.in/books?hl=en&lr=&id=s6oxEraqWWwC&oi=fnd&pg=PP1&dq=disaster+MANAGEMENT&ots=tTefaw793r&sig=2SXMNkQHRieKkXn4dLFRg0ljkQY&redir_esc=y#v=onepage&q=disaster%20MANAGEMENT&f=false

MATERIALS ONLINE:

1. Course template
2. Tutorial question bank
3. Tech talk and Concept Video topics
4. Open-ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper – I
8. Model question paper – II
9. Lecture notes
10. PowerPoint presentation
11. Drishya Siksha Sangrah (DSS) Videos

