DISASTER MANAGEMENT

OE –I: VI Semester: AERO / MECH / CIVIL
OE – III: VIII Semester: CSE / CSE (AI & ML) / CSE (DS) / CSE (CS) / CSIT / IT / ECE / EEE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
ACEC31	Elective	3	0	0	3	30	70	100
Contact Classes: 45	Total Tutorials: Nil	Total Practical Classes: Nil				Total Classes: 45		

I. COURSE OVERVIEW:

The Disaster management provides a fundamental understanding of different aspects. It deals with the concepts and functions of disaster management to build competencies of professionals and development practitioners. It provides effective supporting environment by the governmental locating substantial resources for effective mitigation of disasters. It helps learners to apply the disaster mitigation strategies, preparedness for reducing damage intensity, loss of life and property.

II. COURSE OBJECTIVES:

The student will try to learn:

I. The concept of environmental hazards, disasters and various approaches dealing with the mitigation of disasters.
II. The knowledge on various types of environmental disasters and their impacts on human beings and nature.
III. The Different types of endogenous and exogenous hazards and their influence on human life and nature.
IV. The immediate response and damage assessment with information reporting and monitoring tools.

III. COURSE OUTCOMES:

After successful completion of the course, students should be able to:

CO 1	**Classify** Environmental hazards for developing modern disaster management system.	Remember
CO 2	**Illustrate** various approaches for reducing the level of risk associated with Disasters.	Understand
CO 3	**Compare** natural and manmade disasters for finding out intensity of damage loss occurred by them.	Understand
CO 4	**List** various hazards and their effects for evaluating their impact on society and Environment.	Remember
CO 5	**Outline** human adjustments and perception towards hazards for mitigation of disasters.	Understand
CO 6	**Summarize** disaster phenomenon and its different contextual aspects for implementing the Disaster Risk Reduction Strategy.	Understand

IV. COURSE SYLLABUS:

MODULE-I: ENVIRONMENTAL HAZARDS AND DISASTERS (09)

Environmental hazards and disasters: meaning of environmental hazards, environmental disasters and environmental stress; concept of environmental hazards, environmental stress and environmental disasters, different approaches and relation with human ecology, landscape approach, ecosystem approach, perception approach, human ecology and its application in geographical researches.

MODULE-II: TYPES OF ENVIRONMENTAL HAZARDS AND DISASTERS (09)

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.

MODULE-III: ENDOGENOUS HAZARDS (09)

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 and mitigation of earthquake

MODULE-IV: EXOGENOUS HAZARDS (09)

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.

MODULE-V: EMERGING APPROACHES IN DISASTER MANAGEMENT (09)

Emerging approaches in Disaster Management, Three Stages

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

V.TEXT BOOKS:

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

VI. REFERENCE BOOKS:

1. B. C. Punmia, Ashok K Jain and Arun K Jain, "Mechanics of Materials", Laxmi Publications Pvt. Ltd., New Delhi, 12th Edition, 2007.
2. R. Subramanian, "Strength of Materials", Oxford University Press, 2nd Edition, 2010.
3. D. S. Prakash Rao, "Strength of Materials A Practical Approach Vol.1", Universities Press (India) Pvt. Ltd., India, 3rd Edition, 2007.
4. J. M. Gere, S.P. Timoshenko, "Mechanics of Materials, SI units edition", CL Engineering, USA, 5th Edition, 2000.

VII. Web References:

1. https://www.google.co.in/?gfe_rd=cr&ei=,iAwWLiDIazv8we8_5LADA#q=disater+mangement
2. http://ndma.gov.in/images/policyplan/dmplan/National%20Disaster%20Management%20Plan%20May%202016.pdf
3. http://www.eib.europa.eu/attachments/pipeline/20080021_eia_en.pdf
4. http://www.ndmindia.nic.in/

VIII. E-Text Books:

1. http://cbse.nic.in/natural%20hazards%20&%20disaster%20management.pdf\
2. http://www.digitalbookindex.org/_search/search010emergencydisastera.asp
3. http://www.icbse.com/books/cbse,ebooks,download