INSTITUTE	**FACULTY OF TECHNOLOGY**
PROGRAM	**BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING)**
SEMESTER	**7**
COURSE TITLE	**DISASTER MITIGATION AND MANAGEMENT**
COURSE CODE	**01CI0712**
COURSE CREDITS	**4**

Objective:

1. To study Principles of Disaster mitigation and management
2. To provide students with understanding regarding the natural and manmade disaster risk mitigation techniques
3. Introduce to Disaster management agencies and their roles in India.
4. Develop an understanding of technologies involved in Disaster mitigation.

Course Outcomes: After completion of this course, student will be able to:

1. Discuss the need and importance of disaster management in the Civil engineering
2. Interpret the causes of disaster and provide the mitigation measures for Natural and Man made disasters
3. Analyze the importance of science and modern technology in disaster risk management
4. Review the Disaster management policies and funding mechanisms for Indian Context.

Pre-requisite of course:basic knowledge, understanding, and a strong interest in learning about Natural and Man Made Disaster

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	1	0	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	**Introduction** Hazards and Disasters, Risk and Vulnerability in Disasters, Natural and Man-made disasters, Earthquakes, floods drought, landslide, land subsidence, cyclones, volcanoes, tsunami, avalanches, and global climate extremes, Man-made disasters: Terrorism, gas and radiations leaks, toxic waste disposal, oil spills, forest fires	10

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Contents : Unit	Topics	Contact Hours
2	**Disaster Risk Management and Mitigation** Assessing disaster risk: Preparedness, Mitigation, and Prevention, Disaster Risk Management (DRM) plan, Role of risk transfer and insurance in DRM, Earthquake risk mitigation, Flood risk mitigation, Draught risk mitigation, Cyclone risk mitigation, and Landslide risk mitigation, Disaster Response, Rescue, Evacuation. Psychological response and management, Relief and recovery, medical health response to different disasters	12
3	**Disaster Management in India** Disaster Management Policy Environment and local Action, Disaster Profile of India, Mega Disasters of India and Lessons Learn, Disaster Management Act 2005., Institutional and Financial Mechanism National Policy on Disaster Management, National Guidelines and Plans on Disaster Management, Role of Government (local, state, and national), Non- Government and Inter-Governmental Agencies, Funding for Disaster Management: State Disaster Mitigation fund, State Disaster Response Fund (SDRF), National Disaster Response Fund (NDRF), Prime Minister National Relief Fund (PMNRF), Chief Minister Relief Fund and Role	10
4	**Training Awareness Program and Project on Disaster Management** The disaster Communication system (Early warning and dissemination). Training and mock drills for disaster preparedness, Awareness generation program, Usage of GIS, GPS, and Remote sensing techniques in disaster management, Mini project on disaster risk assessment and preparedness for disasters with reference to disasters in India, Cases Studies: Natural Disaster -Floods, Earthquakes, Cyclones, Tsunamis. Manmade Disaster: Industrial Accidents, Transportation Accidents and Terrorism, Bio-terrorism, Droughts, Nuclear Disaster	10
Total Hours		**42**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Tutorial-1** Case Study – Natural Disaster (Earthquake)	2
2	**Tutorial-2** Case Study – Natural Disaster (Tsunami)	2
3	**Tutorial-3** Case Study – Natural Disaster (Cyclone)	2
4	**Tutorial-4** Case Study – Natural Disaster (Flood)	2
5	**Tutorial-5** Case Study – Natural Disaster (Drought and Landslide)	2

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
6	**Tutorial-6** Case Study – Forest Fires	2
7	**Tutorial-7** Case Study – Working of NDRF, SDRF	1
8	**Tutorial-8** Case Study – Functioning of various Funds for Disaster mitigation and management	1
Total Hours		**14**

Textbook :

1 Encyclopedia of disaster management, Vol I, II and III, L Goyal, Deep & Deep, New Delhi, 2006

References:

1 Encyclopedia of Disasters – Environmental Catastrophes and Human Tragedies, Vol. 1 & 2, Encyclopedia of Disasters – Environmental Catastrophes and Human Tragedies, Vol. 1 & 2, Angus M. Gunn, Greenwood Press, 2008

Suggested Theory Distribution:

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

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
5.00	10.00	30.00	30.00	15.00	10.00

Instructional Method:

1 Prerequisite of the course and its pattern shall be discussed on the commencement of the course.

2 Lectures shall be conducted in class room using various teaching aids.

3 Presence in all academic sessions is mandatory which shall carry 5% marks of the total internal evaluation

4 At the end of each unit/topic an assignment based on the course content shall be given to the students which shall carry 5% weightage for timely completion and submission of the assigned work.

Supplementary Resources:

1 https://nptel.ac.in/courses/124107010

2 https://onlinecourses.swayam2.ac.in/cec19_hs20/preview