

# **Techno India NJR Institute of Technology**



## **Course File**

### **Disaster Management (8TT6- 60.2)**

Bharat Kr. Suthar  
(Assistant Professor)  
**Department of ME**



# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Open Electives Syllabus

B. Tech.: IV Year- VII & VIII Semester

## 8TT6-60.2 : DISASTER MANAGEMENT

Credit: 3  
3L+0T+0P

Max. Marks: 150(IA:30, ETE:120)  
End Term Exam: 3 Hours

SN	Contents	Hours
1	Introduction: Objective, scope and outcome of the course.	1
2	Understanding Disasters and Hazards and related issues social and environmental. Risk and Vulnerability. Types of Disasters, their occurrence/ causes, impact and preventive measures:	12
3	Natural. Disasters- Hydro-meteorological Based Disasters like Flood, Flash Flood, Cloud Burst, Drought, Cyclone, Forest Fires; Geological Based Disasters like Earthquake, Tsunami, Landslides, Volcanic Eruptions.	12
4	Man made Disasters: Textile Processing Industrial Hazards, Major Power Break Downs, Traffic Accidents, Fire Hazards.	12
5	Management roll in mitigating Disaster in Indian Textile Industries. Roll of production people in Disaster Management.	3
	<b>Total</b>	<b>40</b>

## Course Overview:

The course introduces Disaster Management, focusing on natural disasters. The problem is addressed in a holistic cross-sectoral and cross-disciplinary manner, including all stages of disaster management cycle: mitigation, preparation, response and recovery. Starting with theory, main definitions and concepts, the course considers other aspects of Disaster Management cycle, such as International Agreements, impact of climate change and urbanization on severity and extent of disasters, case studies of disaster management on national and local levels, some DRR technologies. Some of the topics will be covered by practitioners from corresponding international and national organizations (such as UNDP Bureau for Crisis Prevention and Recovery and UN Office for Outer Space Affairs). Special attention will be paid to information and communication technologies aimed at collecting, processing and analyzing spatial data for better decision-making in disaster risk management. The course will feature a day long field trip to UN-SPIDER (United Nations Platform for Disaster Management and Emergency Response) Headquarters in Vienna.

To pass the course all students (grade and audit) will be required to develop and present an individual course project on disaster management topic of their choice. In case number of registered students exceeds the course cap, the priority in registration will be given to those taking the course for grade.

## Course Outcomes:

CO. NO.	Cognitive Level	Course Outcome
1	Application	Student will be able to understand the concept of management of resources and responsibilities for dealing with all humanitarian aspects of emergencies.
2	Application	Students are taught to learn the issues such as floods, hurricanes, fires, mass failure of utilities, rapid spread of disease and droughts.
3	Synthesis	Students will be able to learn how to monitor signals and indicators of both natural and man-made threat for the ecosystem.
4	Application	Students will be able to increase the knowledge and understanding of the disaster phenomenon, its different contextual aspects, impacts and public health consequences.
5	Design	Students will be able to ensure skills and ability to design, implement and evaluate research on disasters.

## Prerequisites:

1. Student will be able to understand the concept of management of resources
2. Student will be able to Students are taught to learn the issues such as floods, hurricanes
3. Students will be able to learn how to monitor signals and indicators of both natural and man-made threat for the ecosystem.
4. Students will be able to increase the knowledge and understanding of the disaster phenomenon.
5. Students will be able to ensure skills and ability to design, implement and evaluate research on disasters.

## Course Outcome Mapping with Program Outcome:

Disaster Management															
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	2	2	2	1	2	1	1	1	2	2	3
CO2	3	2	2	2	2	2	1	1	2	1	2	2	2	3	3
CO3	3	2	2	2	2	2	1	1	2	1	2	2	2	3	3
CO4	3	2	2	2	1	2	1	1	2	1	1	2	2	2	3
CO5	3	2	2	2	2	2	2	1	2	1	2	1	2	3	3

## Course Coverage Module Wise:

Lecture No.	Unit	Topic
1	1	Introduction: Objective, scope and outcome of the course.
2	2	Student should be able to understanding Disasters and related issues social and environmental.
3	2	Student should be able to understanding Hazards and related issues social and environmental.
4	2	Student should be able to Understanding Disasters Cycle.
5	2	Student should be able to Understanding Disasters Cycle.
6	2	Student should be able to Explain the phase of disaster management system.
7	2	Student should be able to understand Risk and Vulnerability
8	2	Student should be able to understand Risk and Vulnerability
9	2	Student should be able to define different type of Disasters,
10	2	Student should be able to define different type of Disasters,
11	2	Student should be able to study on occurrence of Disaster.
12	2	Student should be able to study on Impact of Disaster.
13	2	Student should be able to study on preventive measures for Disaster.
14	3	Student should be able to natural. Disasters- Hydro-meteorological Based Disaster.
15	3	Student should be able to study natural. Disasters- Hydro-meteorological Based Disaster.
16	3	Student should be able to understand flood and related issue.

17	3	Student should be able to understand Flash flood and related issue.
18	3	Student should be able to understand Cloud burst causes and preventive measure.
19	3	Student should be able to understand Drought, causes and preventive measure.
20	3	Student should be able to understand Cyclone, causes and preventive measure.
21	3	Student should be able to understand Forest Fires, causes and preventive measure.
22	<b>3</b>	Student should be able to understand Geological Based Disasters like Earthquake causes and preventive measure.
23	3	Student should be able to understand Geological Based Disasters like Tsunami causes and preventive measure.
24	3	Student should be able to understand Geological Based Disasters like Land sliding causes and preventive measure.
25	3	Student should be able to understand Geological Based Disasters like Volcanic Eruptions causes and preventive measure.
26	<b>4</b>	Student should be able to understand Manmade Disasters.
27	4	Student should be able to understand Manmade Disaster: Causes and Preventing Measures.
28	4	Student should be able to understand Textile Processing Industrial Hazards
29	4	Student should be able to understand Textile Processing Industrial Hazards
30	4	Student should be able to understand Textile Processing Industrial Hazards
31	4	Student should be able to understand Major Power Break Downs
32	4	Student should be able to understand Major Power Break Downs
33	4	Student should be able to understand Major Power Break Downs
34	4	Student should be able to understand Traffic Accidents, causes and preventive measure.
35	4	Student should be able to understand Traffic Accidents, causes and preventive measure.

36	4	Student should be able to understand Fire Hazards, causes and preventive measure.
37	4	Student should be able to understand Fire Hazards, causes and preventive measure.
38	5	Student should be able to understand Management roll in mitigating Disaster in Indian Textile Industries. Roll of production people in Disaster Management
39	5	Student should be able to understand Roll of production people in Disaster Management
40	5	Student should be able to understand Roll of production people in Disaster Management

## **TEXT/REFERENCE BOOKS**

### **1. Text Book of Disaster Management Nitesh Kumar**

2. Natural Hazards and Disaster Management: Vulnerability and Mitigation
3. Disaster Management in India R. K. Pandey
4. Disaster Management: A Reader S. Rajagopal

### Course Level Problems (Test Items):

CO.NO.	Problem description
1	A. Discuss major issues involved in disaster preparedness, B. Highlight development perspective to disaster management with focus on disaster management in riverine regions. C. Write a note on disaster cycle.
2	A. Define Total Disaster Risk Management Approach and refer to its pertinence for Disaster Management Cycle. B. Sustainable management of natural resources is essential to provide livelihood and environmental security'. Discuss. C. Highlight key environmental concerns pertaining to disasters,
3	A. Analyse the important facets of disaster management in mountainous regions B. Define vulnerability and discuss the process of vulnerability analysis. C. Examine the role of corporate social responsibility as an emerging avenue in managing disasters
4	A. Examine the role of corporate social responsibility as an emerging avenue in managing disasters B. Define vulnerability and discuss the vulnerability profile of India, C. Write a note in brief on important disaster management strategies
5	A. Discuss the important steps in relief distribution, Explain the different types of damages that occur due to disasters. B. The relationship between disaster and development depends on the development choices made by the individual, community and the nation'. Discuss. C. Emergency Operations Centre and Stockpiling practices in disaster Management.

### Assessment Methodology:

1. Practical exam in lab where they have to analyze problem statement. (Once in a week)
2. Assignments one from each unit.
3. Midterm subjective paper based on topics as mentioned in the modules. (Twice during the semester)
4. Final paper at the end of the semester subjective.

## Teaching and Learning resources unit-wise:

INTRODUCTION: Objective, scope and outcome of the course.

Video Tutorials: <https://youtu.be/OSbSSqNkMW4>

Theory concepts: <https://publichealthdisasters.eu/objectives-and-learning-outcomes/>

### DISASTER PREPARADNESS

Video Tutorials: <https://youtu.be/KwAKjtkpdP4>

Theory concepts: <https://www.ifrc.org/disaster-preparedness>

#### A. Natural Disaster

Video Tutorials: <https://youtu.be/OSbSSqNkMW4>

Theory concepts:

[https://en.wikipedia.org/wiki/Natural\\_disaster#:~:text=A%20natural%20disaster%20is%20a,storms%2C%20and%20other%20geologic%20processes.](https://en.wikipedia.org/wiki/Natural_disaster#:~:text=A%20natural%20disaster%20is%20a,storms%2C%20and%20other%20geologic%20processes.)

#### B. Man Made Disaster

Video Tutorials: <https://youtu.be/NJixgVxTB7I>

Theory concepts: <https://www.monroecounty-fl.gov/904/Man-Made-Disaster>





**TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY UDAIPUR**

**Mechanical Engineering Department**

**B. TECH IV– YEAR (VIII Sem.)**

**II MID-TERM (2020-2021)**

**SUBJECT – Disaster Management (8TT6-60.2)**

**Time: 1Hr 30 minutes + 15 Minutes for Submission**

**Max. Marks: 40**

**Attempt any five questions.**

**[5 \* 8 =40]**

1. A) Differentiate between Landslides and Avalanches **(CO2)**  
B) Differentiate between natural and man-made hazards. **(CO3)**
2. What are the various causes of floods? What are the flood management policies enacted in India from time to time? **(CO2)**
3. Discuss various types of natural disasters in India and highlight their effects. **(CO3)**
4. What kind of Emergency medical and essential public health services can be suggested for an Earthquake affected area? **(CO1)**
5. What is meant by Disaster management? Explain the process of disaster management. **(CO1)**
6. A)What are the points to be considered before, during and after natural disaster? **(CO2)**  
B) Write short notes on vulnerability and risk. **(CO1)**
7. What are hazards? Why is the study about hazards important for Indian subcontinent? Explain **(CO1)**

## TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY, UDAIPUR

---

- Q.1** (a) Define- Disaster and Hazard.  
(b) Discuss how a manager can analyze the events.  
(c) Write in detail types of events.
- Q.2** (a) Write a note on Checklists  
(b) Disaster Risk Management in India, Act & Policy  
(c) Explain Disaster cycle-its analysis.
- OR**
- (c) What is the role of Technology in event management?
- Q.3** (a) Write a note on mitigation and preparedness.  
(b) Developing record keeping systems in event management.  
(c) Explain the roles & responsibilities of event manager.
- OR**
- Q.3** (a) Define: Resilience and Risk.  
(b) Role of decision makers in event management.  
(c) Explain step by step procedure to be followed when conducting an event.
- Q.4** (a) What is the meaning of Expense Reimbursement?  
(b) What are causes & effects of natural disaster?  
(c) Role of Panchayat raj institution (PRIs) in disaster management?
- OR**
- Q.4** (a) Short note on Fees & Honorariums.  
(b) Structural-nonstructural measures used for DRR.  
(c) Write in detail about Climate Change Adaptation.
- Q.5** (a) Roles and responsibilities of community in disaster management.  
(b) Preparing a Planning Schedule and its importance in an event.  
(c) What are Mice? Explain each component in detail.

## **TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY, UDAIPUR**

- Q.1** (a) Write a note on various community based disaster management.  
(b) Explain the terms disaster and hazard.  
(c) Define the terms: Disaster, Hazard, Vulnerability, Risk and Capacity
- Q.2** (a) Enumerate the technological disaster and explain any one.  
(b) Explain geological disaster with suitable example.  
(c) Write difference between man-made disaster and biological disaster.
- Q.3** (a) Enumerate the hydro meteorological disaster and explain any one.  
(b) What are the preventive measures for man-made disasters?  
(c) Write a note on urban disaster.
- Q.4** (a) Focus on pre-disaster & post-disaster management.  
(b) Discuss disaster management cycle  
(c) Describe awareness during disaster.
- Q.5** (a) Explain relief and rehabilitation in disaster management  
(b) Explain early warning system in case of flood.  
(c) What is paradigm shift in disaster management?
- Q. 6** (a) Describe national policy on disaster management.  
(b) Give the role of government in disaster.  
(c) Discuss about disaster profile of India.