

# **Techno India NJR Institute of Technology**



## **Course File**

### **DISASTER MANAGEMENT (8TT6-60.2)**

**Session 2022-23**

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**Department of C.E.**



# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

## Open Electives Syllabus

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

### 8TT6-60.2 : DISASTER MANAGEMENT

Credit: 3

Max. Marks: 150(IA:30, ETE:120)

3L+0T+0P

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 is intended to provide a general concept in the dimensions of disasters caused by nature beyond the human control as well as the disasters and environmental hazards induced by human activities with emphasis on disaster preparedness, response and recovery.

The course focuses 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 along with Local National & State policies, to counter disaster, as per act of 2005.

### COURSE OUTCOMES:

Co No	Cognitive Level	Course Outcome
1	Comprehension	Student will be able to categorize the different types of disaster and their characteristics
2	Application	Students will be able to make an Evaluation of hazard and vulnerability
3	Analysis	Students will be able to outline the concept of capacity building and strengthening capacity to reduce disaster risk
4	Analysis	Students will be able to write Disaster coping strategies, industrial safety plan, safety norms, mass media and disaster management in textile industry.
5	Application	Students will be able to describe Planning in disaster management, formulating risk reduction plan and to understand act and polices in India

## Course Outcome Mapping with Program Outcome:

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO12	PSO1	PSO2	PSO3
CO660.2.1	3	1	2	1	1	2	2	1	1	1	1	1	1	1	1
CO660.2.2	3	2	2	1	1	1	1	1	1	1	1	2	1	1	1
CO660.2.3	3	1	2	1	1	2	2	1	1	1	1	1	1	1	1
CO660.2.4	1	1	1	1	1	2	2	1	2	2	1	2	2	1	1
CO660.2.5	1	1	1	1	1	2	2	1	2	2	1	2	2	1	1
CO660.2(Avg)	2.2	1.2	1.6	1	1	1.8	1.8	1	1.4	1.4	1	1.6	1.4	1	1

## Course Coverage Module Wise:

Lecture No.	Unit	Topic
1	1	Introduction: Objective, scope and outcome of the course.
2	2	Understanding Disasters and related issues social and environmental.
3	2	Understanding Hazards and related issues social and environmental.
4	2	Understanding Disasters Cycle.
5	2	Understanding Disasters Cycle.
6	2	Explain the phase of disaster management system.
7	2	Risk and Vulnerability
8	2	Risk and Vulnerability
9	2	Types of Disasters,
10	2	Types of Disasters,
11	2	Study on occurrence of Disaster.
12	2	Study on Impact of Disaster.

13	2	Study on preventive measures for Disaster.
14	3	Natural. Disasters- Hydro-meteorological Based Disaster.
15	3	Natural. Disasters- Hydro-meteorological Based Disaster.
16	3	Understand flood and related issue.
17	3	Understand Flash flood and related issue.
18	3	Cloud burst causes and preventive measure.
19	3	Understand Drought, causes and preventive measure.
20	3	Understand Cyclone, causes and preventive measure.
21	3	Understand Forest Fires, causes and preventive measure.
22	3	Geological Based Disasters like Earthquake causes and Preventive measure.
23	3	Geological Based Disasters like Tsunami causes and preventive Measure.
24	3	Geological Based Disasters like Land sliding causes and Preventive measure.
25	3	Geological Based Disasters like Volcanic Eruptions causes and Preventive measure.
26	4	Understand Manmade Disasters.
27	4	Manmade Disaster: Causes and Preventing Measures.
28	4	Textile Processing Industrial Hazards
29	4	Textile Processing Industrial Hazards
30	4	Textile Processing Industrial Hazards
31	4	Understand Major Power Break Downs
32	4	Understand Major Power Break Downs
33	4	Understand Major Power Break Downs
34	4	Understand Traffic Accidents, causes and preventive measure.
35	4	Understand Traffic Accidents, causes and preventive measure.

36	4	Understand Fire Hazards, causes and preventive measure.
37	4	Understand Fire Hazards, causes and preventive measure.
38	5	Management roll in mitigating Disaster in Indian Textile Industries. Roll of production people in Disaster Management
39	5	Roll of production people in Disaster Management
40	5	Roll of production people in Disaster Management

### Reference Books:

1. “Natural Hazards and Disaster Management: Vulnerability and Mitigation” by R B Singh
2. “Disaster Education and Management” by Rajendra Kumar Bhandari
3. “Disaster Management” by R. Subramanian
4. Disaster Management act 2005

### NPTEL Courses:

1. [NPTEL :: Architecture - NOC:Disaster Recovery And Build Back Better](#)
2. [NPTEL :: Civil Engineering - Non-natural Hazards - Part-1](#)
3. <https://cdn.s3waas.gov.in/s365658fde58ab3c2b6e5132a39fae7cb9/uploads/2018/04/2018041720.pdf>

### Teaching and Learning resources:

#### Unit 1

INTRODUCTION: Objective, scope and outcome of the course.

- <https://youtu.be/OSbSSqNkMW4>
- <https://publichealthdisasters.eu/objectives-and-learning-outcomes/>

#### DISASTER PREPARADNESS

- <https://youtu.be/KwAKjtkpdP4>
- <https://www.ifrc.org/disaster-preparedness>

#### Unit 2

Natural Disaster

- <https://youtu.be/OSbSSqNkMW4>

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

Man Made Disaster

- <https://youtu.be/NJixgVxTB7I>
- <https://www.monroecounty-fl.gov/904/Man-Made-Disaster>

### **Unit 3:**

Hazard Assessment:

- <https://mmrjournal.biomedcentral.com/articles/10.1186/s40779-015-0059-9>
- <http://environmentclearance.nic.in/writereaddata/Online/RiskAssessment/220620160Q65ZGCEAnnexure-RiskAssessment.pdf>

### **Unit 4:**

Man Made Disasters (Textile Industry)

[https://reliefweb.int/sites/reliefweb.int/files/resources/54153\\_23062017wiammtechguideconsultativev.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/54153_23062017wiammtechguideconsultativev.pdf)

<https://www.slideshare.net/88azmir/industrial-hazards-and-their-safety-measure-in-textile-industry>

### **Unit 5:**

Coping With Disaster:

- <http://www.cahsd.org/wp-content/uploads/2017/08/Coping-with-Disaster.pdf>
- [https://www.researchgate.net/publication/312893271\\_Coping\\_strategies\\_preparedness\\_and\\_emergency\\_response\\_of\\_char-land\\_peoples\\_in\\_Flood\\_Disaster\\_A\\_case\\_study\\_in\\_Kurigram\\_Bangladesh](https://www.researchgate.net/publication/312893271_Coping_strategies_preparedness_and_emergency_response_of_char-land_peoples_in_Flood_Disaster_A_case_study_in_Kurigram_Bangladesh)

### **Unit 6:**

Planning for Disaster Management:

- <https://cdn.s3waas.gov.in/s365658fde58ab3c2b6e5132a39fae7cb9/uploads/2018/04/2018041720.pdf>

### **Assessment Methodology:**

1. Mid-term examination
2. Final exams conducted by the university.

### 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. Assignments (online/offline mode)
2. Mid-term examination
3. Final exams conducted by the university



**TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY, UDAIPUR**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**MODEL QUESTION PAPER**

**SUBJECT: DISASTER MANAGEMENT      SUBJECT CODE: 8TT6-60.2**

- 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**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**MODEL QUESTION PAPER 2**  
**SUBJECT: DISASTER MANAGEMENT      SUBJECT CODE: 8TT6-60.2**

- 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.

## Sample Quiz:

- 1) National Institute of Disaster Management was inaugurated on .....
  - A. September 23, 2002
  - B. August 14, 2001
  - C. October 16, 2003
  - D. August 14, 2004
  
- 2) Head office of the National Institute of Disaster Management is situated in India's city/ state?
  - A. Kolkata
  - B. New Delhi
  - C. Hyderabad
  - D. Manipur
  
- 3) When the situation of hazard arise?
  - A. When there is the threat of natural calamity
  - B. When there is a threat to the consequences of the disaster
  - C. When there is a threat to property and lives from calamities
  - D. All of the above
  
- 4) Which one of the following is not a Natural Disaster?
  - A. Volcano eruption
  - B. Flood
  - C. Blow-out
  - D. Tsunami
  
- 5) Seismic waves cause disaster named as .....
  - A. Nino
  - B. Typhoon
  - C. Tsunami
  - D. hurricane
  
- 6) Rolling effect along the earth's surface affect produces a wave of an earthquake?
  - A. L wave
  - B. P wave
  - C. S wave
  - D. None of the above
  
- 7) Where International Tsunami information center is located?
  - A. Honolulu

- B. Hyderabad
- C. Goa
- D. Pondicherry

8) National Disaster Management authority comes under which ministry?

- A. Ministry of Pollution
- B. Ministry of Environment
- C. Ministry of Home Affairs
- D. Ministry of Foreign Affairs

9) In which of the following countries, hurricanes are common?

- A. India
- B. Sri Lanka
- C. Australia
- D. USA

10) Which is the calm part of a tropical cyclone?

- A. Eye
- B. Limb
- C. Periphery
- D. None

11) Where is the Tsunami Warning Center located in India?

- A. New Delhi
- B. Hyderabad
- C. Gujarat
- D. Kolkata

12) Tsunami word is derived from which language word.

- A. Greek word
- B. Indian word
- C. French word
- D. Japanese word

13) Which option is the perfect answer to the Civil war?

- A. Kargil war
- B. World war II
- C. World war I
- D. Syrian War

- 14) Find the following common factors of wildfire hazards.
- A. Volcanic eruption
  - B. El-Nino
  - C. Volcanic Lightning and thundering
  - D. All of the above
- 15) In North America bush fire is known as
- A. Brush fires
  - B. Wildfire
  - C. Volcano fire
  - D. None of the above
- 16) The two atom bombs in World war II has been dropped on which of the following:-
- A. Hiroshima and Nagasaki in Japan
  - B. Germany
  - C. Italy
  - D. Great Britain
- 17) In which year, a terrorist attack was made on the twin tower of the world trade center in the USAA. 1999
- B. 2008
  - C. 2001
  - D. 2005
- 18) In which direction the wind of the tropical cyclone blows in the northern hemisphere.
- A. Straight forward
  - B. Anticlockwise direction
  - C. Clockwise direction
  - D. In any direction
- 19) A deep burn destroys all layers of skin is termed as:-
- A. First-degree burn
  - B. Second-degree burn
  - C. Third Degree Burn
  - D. None of these
- 20) According to the Indian Meteorological Department (IMD), the wind blows at which speed called as storm as ‘Super cyclone’?
- A. Above 200 km
  - B. Above 110 km
  - C. Above 220 km
  - D. None of the above

21) The extreme risk zone during a volcanic eruption is.....

- A. At a distance Upto 100 Mtrs
- B. At a distance of 100-300 mtrs
- C. At a distance of 300mtrs- 3 km
- D. None of these

22) Flow of volcanic mud is called as?

- A. Magma
- B. Lahars
- C. Lava
- D. None of the above

23) The only active volcano in India is .....

- A. Volcano Baratang
- B. Barren Island volcano
- C. Volcano Etna
- D. None of the above

24) India's total flood-prone area is up to.....

- A. 30%
- B. 20%
- C. 12%
- D. 10%

25) India's total cyclone-prone area is .....

- A. 15%
- B. 10%
- C. 8%
- D. 20%

## Previous Year Question Papers

### TECHNO INDIA NJR INSTITUTE OF TECHNOLOGY, UDAIPUR

#### B. TECH 4<sup>th</sup> – YEAR (VIII SEM.) – MT-I

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

**Time:** 1.5 Hr

**Max. Marks:** 20

**Note:**

- 1) Attempt any 4 out of 7 question.
- 2) Each question carries 5 marks

Part- A (20 Marks)

A.	What do you understand by cyclones? Write their classification and impact.
B.	Explain the different causes of floods and their consequences on human and animal life.
C.	What do you understand by geological based disasters? Explain with examples.
D.	Explain the term disasters, write the classification of disasters with examples.
E.	Explain the natural drought, what are the methods to combat the drought situation.
F.	Explain various phases of the Disaster Management Cycle.
G.	Define Hazard

**8E1860**

Roll No. \_\_\_\_\_

[Total No. of Pages : 2]

**8E1860****B.Tech. VIII - Sem. (Back) Examination, January - 2023****Open Elective - II****8TT6-60.2 : Open Elective - II Disaster Management****Time : 3 Hours****Maximum Marks : 120****Min. Passing Marks : 42****Instructions to Candidates:**

*Attempt all Ten questions from Part A, five questions out of seven from Part B and four questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

**PART - A****(Answer should be given up to 25 words only)****ALL questions are compulsory.****(10×2=20)**

1. What do you understand by manmade disasters?
2. Explain the reasons for flood river.
3. What is natural cloud burst?
4. How air pressure speed in cyclone are categorized?
5. How you have fire hazard in textile industries?
6. What are reasons for major power break down in textile Industries?
7. Write the fire fighting devices in textile chemical processing plants.
8. What are the chemical hazards in the textile chemical processing plants?
9. How you measure the intensity of earth quake?
10. What do you understand by traffic accidents?



## **PART - B**

**(Analytical/Problem solving questions)**

**Attempt any FIVE questions.**

**(5×8=40)**

1. What do you understand by the environmental impact? Explain with examples?
2. What are the different methods for environmental impact assessment?
3. Explain the term disasters, write the classification of disasters with examples.
4. Explain the different causes of floods and their consequences on human and animal life.
5. What do you understand by cyclones? Write their classification and impact.
6. What are the reasons for forest fire and how the fire can be prevented?
7. What are the reasons of earthquake? Discuss different earthquake zones.

## **PART - C**

**(Descriptive/Analytical/Problem Solving/Design questions)**

**Attempt any FOUR questions.**

**(4×15=60)**

1. Explain sustainable development in nature and how nature balance the developments.
2. Write short notes on followings.
  - a) Tsunami
  - b) Landslides
3. What do you understand by geological based disasters? Explain with examples.
4. Explain the natural drought, what are the methods to combat the drought situation.
5. Explain disaster management cycle and its components.

<b>8E1860</b>	Roll No. _____	[Total No. of Pages : 2]
	<div style="border: 1px solid black; display: inline-block; padding: 2px 10px;"><b>8E1860</b></div> <b>B.Tech. VIII Sem. (Main/Back) Examination, June - 2022</b> <b>Open Elective - II</b> <b>8TT6-60.2 Disaster Management</b>	

**Time : 3 Hours**

**Maximum Marks : 120**

**Min. Passing Marks : 42**

***Instructions to Candidates:***

*Attempt All ten questions from Part A, five questions out of Seven from Part B and Four questions out of Five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No.205)*

**PART - A**

(Answers should be given up to 25 words only)

All questions are compulsory.

(10×2=20)

1. Define the term Disaster Management?
2. Classify the types of Disaster?
3. What is Human made Disaster?
4. What is the difference between Emergencies and Disaster?
5. List all the phases of Disaster Management Life Cycle?
6. Define Hazard?
7. What is full form of PPE?
8. Which type of Disaster was Bhopal gas tragedy?
9. What do you mean by Disaster Mitigation?
10. What is the difference between Epidemic and Pandemic?

<b>8E1860</b>	Roll No. _____	[Total No. of Pages : 2]
	<b>8E1860</b> <b>B.Tech. VIII Sem. (Main/Back) Examination, June - 2022</b> <b>Open Elective - II</b> <b>8TT6-60.2 Disaster Management</b>	

**Time : 3 Hours**

**Maximum Marks : 120**

**Min. Passing Marks : 42**

**Instructions to Candidates:**

*Attempt All ten questions from Part A, five questions out of Seven from Part B and Four questions out of Five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No.205)*

**PART - A**

(Answers should be given up to 25 words only)

All questions are compulsory.

(10×2=20)

1. Define the term Disaster Management?
2. Classify the types of Disaster?
3. What is Human made Disaster?
4. What is the difference between Emergencies and Disaster?
5. List all the phases of Disaster Management Life Cycle?
6. Define Hazard?
7. What is full form of PPE?
8. Which type of Disaster was Bhopal gas tragedy?
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<b>7E1714</b>	Roll No. <b>7E1714</b>	Total No of Pages: <b>2</b>
<b>B. Tech. VII - Sem. (Main) Exam., Feb.- March - 2021</b> <b>OE - I Open Elective-I Civil Engineering</b> <b>7CE6 – 60.2 Disaster Management</b>		

Time: 2 Hours

[To be converted as per scheme]

Max. Marks: 82

Min. Marks: 29

*Instructions to Candidates:*

*Attempt all ten questions from Part A, four questions out of seven questions from Part B and two questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[10×2=20]**

**All questions are compulsory**

- ~~Q1~~ What are the consequences of disaster on a society?
- ~~Q2~~ What are the major man-made causes of floods?
- ~~Q3~~ Who are the National Disaster Risk Reduction Stakeholders?
- ~~Q4~~ Is there a national disaster management policy, act or related legislation?
- ~~Q5~~ What is response time?
- ~~Q6~~ What is radiological and nuclear disaster?

[7E1714]

Page 1 of 2

[1240]

- Q.7 Describe cyclones.
- Q.8 What is industrial disaster?
- Q.9 What are natural hazards?
- Q.10 What is disaster management cycle?

**PART – B**

**(Analytical/Problem solving questions)**

**[4×8=32]**

**Attempt any four questions**

- Q.1 What are coping strategies with disaster?
- Q.2 Explain dimensions of vulnerability factors for earthquake hazards.
- Q.3 Explain disaster management cycle.
- Q.4 What are industrial safety plans, safety norms and survival kits?
- Q.5 Write about legislative support at the state and national level for disaster management.
- Q.6 Explain disaster phenomena.
- Q.7 Write about disaster resources and their utility in disaster management.

**PART – C**

**(Descriptive/Analytical/Problem Solving/Design Questions)**

**[2×15=30]**

**Attempt any two questions**

- Q.1 Explain Disaster Management Act and Policy in India.
- Q.2 What are the different types of disaster management?
- Q.3 What are the objectives of disaster management?
- Q.4 Explain steps for formulating a disaster risk reduction plan.
- Q.5 What are vulnerabilities to flood and earthquake hazards?