Techno India NJR Institute of Technology

Course File

DISASTER MANAGEMENT (7CE6-60.2)

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7CE6-60.2 DISASTER MANAGEMENT (Open Elective-II)

Credit 3 **Max. Marks: 150(IA:30, ETE:120)**

3L+0T+0P **End Term Exam: 3Hours**

SN	Contents	Hours
1	**INTRODUCTION:** Objective, scope and outcome of the course	1
2	Understanding Disaster: Concept of Disaster - Different approaches- Concept of Risk -Levels of Disasters - Disaster Phenomena and Events (Global, national and regional) Hazards and Vulnerabilities: Natural and man-made hazards; response time, frequency and forewarning levels of different hazards - Characteristics and damage potential or natural hazards; Types of disasters- floods, cyclones, lightening, thunderstorms, hailstorms, avalanches, droughts, cold and heat waves, epidemics, pest attacks, forest fire, chemical, industrial, radiological and nuclear disasters, building collapse, rural and urban fire, road and rail accidents etc.	8
3	Hazard assessment - Dimensions of vulnerability factors; vulnerability assessment -Vulnerability and disaster risk - Vulnerabilities to flood and earthquake hazards Disaster Management Mechanism: Concepts of risk management andcrisismanagements-DisasterManagementCycle- Response and Recovery - Development, Prevention, Mitigation and Preparedness - Planning for Relief	8
4	Capacity Building: Capacity Building: Concept - Structural and Non-structural Measures Capacity Assessment; Strengthening Capacity for Reducing Risk - Counter-Disaster Resources and their utility in Disaster Management - Legislative Support at the state and nationallevels	8
5	Coping with Disaster: Coping Strategies; alternative adjustment processes – Changing Concepts of disaster management - Industrial Safety Plan; Safety norms and survival kits -Mass media and disaster management	7
6	Planning for disaster management: Strategies for disaster management planning - Steps for formulating a disaster risk reduction plan - Disaster management Act and Policy in India - Organizational structure for disaster management in India - Preparation of state and district disaster management plan. Case studies: Natural and man-made disasters, preparedness and planning.	8
	Total	40

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 HERE

Co No	Cognitive Level	Course Outcome
1	Application	Students are taught to learn the issues such as floods, hurricanes fires mass failure of utilities rapid spreads of disease and drought.
2	Application	Students are taught to learn the issues such as floods, hurricanes fires mass failure of utilities rapid spreads of disease and drought.
3	Synthesis	The student will be able to learn how to monitor signals and indicators of both natural and man-made threats to the ecosystem.
4	Application	Knowledge & understanding of the disaster phenomenon, its different contextual aspects, impacts & public health consequences.
5	Design	Students will be able to ensure skills and ability to design, implement & evaluate research on disasters

Disaster Management															
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO482.1	3	1	2	1	1	2	2	1	1	1	1	1	1	2	3
CO482.2	3	2	2	1	1	1	1	1	1	1	1	2	1	2	2
CO482.3	3	1	2	1	1	2	2	1	1	1	1	1	1	2	3
CO481 (AVG)	3	1.33333	2	1	1	1.66667	1.66667	1	1	1	1	1.33333	1	2	2.66667

Lecture No	Topic	Comments

1	INTRODUCTION: Objective, scope and outcome of the course	
2	Understanding Disaster: Concept of Disaster - Different approaches- Concept of Risk -Levels of Disasters	
3	Disaster Phenomena and Events (Global, national and regional) Hazards and Vulnerabilities	
4	Natural and man-made hazards; response time, frequency and forewarning levels of different hazards	
5	Characteristics and damage potential or natural hazards	
6	Types of disasters- floods, cyclones, lightening, thunderstorms	
7	Types of disasters-hailstorms, avalanches, droughts, cold and heat waves	
8	Types of disasters- epidemics, pest attacks, forest fire, chemical, industrial	
9	Types of disasters- radiological and nuclear disasters, building collapse, rural and urban fire, road and rail accidents.	
10	Hazard assessment - Dimensions of vulnerability factors	
11	Hazard assessment - vulnerability assessment	
12	Hazard assessment - Vulnerability and disaster risk assassement	
13	Hazard assessment - Vulnerabilities to flood and earthquake hazards	
14	Disaster Management Mechanism: Concepts of risk management and crisismanagements	
15	Disaster Management Mechanism: DisasterManagementCycle-Response and Recovery	
16	Disaster Management Mechanism: Development, Prevention, Mitigation and Preparedness - Planning for Relief	
17	Disaster Management Mechanism: Development, Prevention, Mitigation and Preparedness - Planning for Relief (b)	
18	Capacity Building: Concept - Structural and Non-structural Measures	
19	Capacity Building: Concept - Structural and Non-structural Measures (b)	
20	Capacity Assessment	
21	Strengthening Capacity for Reducing Risk Counter	
22	Strengthening Capacity for Reducing Risk Counter-Disaster Resources	
23	Utility of Capacity assesment in Disaster Management	
24	Legislative Support at the state and national levels in Disaster Management.	
25	Coping Strategies for disaster management.	
26	Alternative adjustment processes	
27	Changing Concepts of disaster management with time.	

28	Industrial Safety Plan for DM	
29	Safety norms for Industries	
30	Safety norms and survival kits	
31	Mass media and disaster management	
32	Strategies for disaster management planning Steps for formulating a disaster risk reduction plan.	
33	Strategies for disaster management planning Steps for formulating a disaster risk reduction plan. (b)	
34	Act and Policy in India	
35	Disaster management Act and Policy in Organizational structure for disaster management in India	
36	Preparation of state and district disaster management plan.	
37	Case studies: Natural and man-made disasters, preparedness and planning.	
38	Case studies: Natural and man-made disasters, preparedness and planning.	
39	Case studies: Natural and man-made disasters, preparedness and planning.	
40	Case studies: Natural and man-made disasters, preparedness and planning.	

	Text / Reference Books:
1	D B N Murthy Disaster Management: Text & Case Studies, Deep & Deep Pvt. Ltd.
2	S L Goel, Encyclopedia of Disaster Management, Deep & Deep Pvt. Ltd.
3	G K Ghosh, Disaster Management, A P H Publishing Corporation.
4	Satish Modh, Citizen's Guide to Disaster Management Macmilan.
5	Manual on Disaster Management, National Disaster Management, Agency Govt of India.
6	Disaster Management by Mrinalini Pandey Wiley 2014.
7	Disaster Science and Management by T. Bhattacharya, McGraw Hill Education (India) Pvt Ltd Wiley 2015

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NPTEL Courses:

1. NPTEL :: Architecture - NOC:Disaster Recovery And Build Back Better
2. NPTEL :: Civil Engineering - NOC:Natural Hazards - Part-1

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

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Roll No. 7E1714

Total No of Pages: 2

7E1714

B. Tech. VII - Sem. (Main) Exam., Feb.- March - 2021

OE - I Open Elective-I Civil Engineering

7CE6 – 60.2 Disaster Management

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?

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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?
