B.Tech Open Elective Paper- CE1206 Disaster Management And Mitigation
Academic year 2015-2016
(Semester commencing in June 2015)

Instructional objectives no.	Instructional objectives (IO)
1	To understand basic concepts of disaster and hazards of India.
2	To study the various natural disasters.
3	To study the various manmade disasters.
4	To understand the disaster management principles.
5	To study the modern techniques used in disaster mitigation and management.

Student outcomes

Student outcome number	Student outcome (SO)
a	an ability to apply knowledge of mathematics, science, and engineering
c	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
h	the broad education necessary to understand the impact of engineering solutions in global, economic, environmental, and societal context

Mapping of Instructional Objectives (IOs) with Student Outcomes (SOs)
CE1206 Disaster Management And Mitigation

Instructional objectives	Student outcome		
	a	c	h
1. To understand basic concepts of disaster and hazards of India.	X	X	X
2. To study the various natural disasters.	X	X	X
3. To study the various manmade disasters.	X	X	X
4. To understand the disaster management principles.	X	X	X
5. To study the modern techniques used in disaster mitigation and management.	X	X	X

CE1206	Disaster Management and Mitigation	Lecture Hours (L)	Tutorial Hours (T)	Practical Hours (P)	Credits (C)
		3	0	0	3
	Prerequisites NIL				

Lesson Plan – JUNE 2015

Lecture No.	Topic	No. of hours	IOs	SO	Reference
	UNIT I - INTRODUCTION TO DISASTER				
1.	Disaster - Meaning, Nature, Importance of Hazard	1	1	a,c,h	1,,4
2.	Risk and Vulnerability	1	1,2,3	a,c,h	1,,4
3.	Dimensions & Scope of Disaster Management	1	1,4	a,c,h	1
4.	Disaster Management	1	1,4	a,c,h	1,3,4
5.	India's Key Hazards	1	1,2	a,c,h	1,,4,5
6.	Vulnerabilities	1	1,2,3	a,c,h	1,,4,5
7.	National disaster management	1	1,2,4	a,c,h,	1,3,4,5
8.	Disaster management framework	1	1,2,4	a,c,h	1,3,4,5
9.	Disaster Management Cycle	1	1,2,4	a,c,h	1,3,4,5
	UNIT II - NATURAL DISASTER				
10.	Natural Disasters- Meaning and nature	1	2	a,c,h	1,,4,5
11.	Types and effects of natural Disasters	1	2	a,c,h	1,2,4
12.	Floods and Drought Disasters study	1	2	a,c,h	1,3,4
13.	Cyclone and Earthquake Disasters study	1	2	a,c,h	1,3,4
14.	Landslides and Avalanche Disaster study	1	2	a,c,h	1,3,4
15.	volcanic eruptions, Heat and cold waves study	1	2	a,c,h	1,3,4

Lecture No.	Topic	No. of hours	IOs	SO	Reference
16.	Climatic change and Global warming,	1	2,5	a,c,h,	1,2,4
17.	Sea level rise	1	2	a,c,h	1,2,3.5
18.	Ozone depletion study	1	2,5	a,c,h	1,2,4,5
	UNIT III - ANTHROPOGENIC DISASTER				
19.	Man Made Disasters	1	3	a,c,h	1,3,4
20.	Nuclear disasters	1	3	a,c,h	1,4
21.	Chemical disasters	1	3	a,c,h	1,4
22.	Biological disasters	1	3	a,c,h	1,4
23.	Building fire and coal fire	1	3	a,c,h	1, 4
24.	Forest fire and oil fire	1	3	a,c,h	1,4
25.	Air pollution	1	3	a,c,h	1,4
26.	Water pollution	1	3	a,c,h	1, 4
27.	Deforestation and Industrial waste water pollution.	1	3	a,c,h	1,4
	UNIT IV - APPROACHES IN DISASTER MANAGEMENT				
28.	Approaches- Pre- disaster stage preparedness	1	1,4,5	a,c,h	1,2,3,4,5
29.	Preparing hazard zonation maps	1	1,4,5	a,c,h	1,2,3,5
30.	Predictability/ forecasting & warning	1	1,4,5	a,c,h	1,2,3,4,5
31.	Preparing disaster preparedness plan - Land use zoning	1	1,4,5	a,c,h	1,2,3,4,5
32.	Preparedness through Information, education.	1	1,4,5	a,c,h	1,2,3,4,5
33.	Emergency Stage - Rescue training for search & operation	1	1,4,5	a,c,h	1,2,3,4,5
34.	Relief and Assessment surveys	1	1,4,5	a,c,h	1,2,3,4,5
35.	Post Disaster stage – Rehabilitation- Social Aspect	1	1,4,5	a,c,h	1,2,3,4,5
36.	Economic Aspect and Environmental Aspect	1	1,4,5	a,c,h	1,2,3,4,5
	UNIT V - DISASTER MITIGATION				
37.	Meteorological observatory	1	4,5	a,c,h	1,3,4,5
38.	Seismological observatory	1	4,5	a,c,h	1,3,4,5
39.	Hydrology Laboratory	1	4,5	a,c,h	1,3,4,5
40.	Industrial Safety inspectorate study	1	4,5	a,c,h	1,3,4,5
41.	Technology in Disaster Management applications	1	4,5	a,c,h	1,3,4,5
42.	Emergency Management Systems (EMS) in the Disaster Management Cycle	1	4,5	a,c,h	1,3,4,5
43.	Remote Sensing in Disaster Management.	1	4,5	a,c,h	1,2,4,5
44.	Geographic Information Systems(GIS) in Disaster Management.	1	4,5	a,c,h	1,2,4,5
45.	Specific Case studies	1	4,5	a,c,h	1,2,3,4,5
	Model Examination	3			
	Total hours	48			

TEXT BOOKS

1. Sharma.S.R, "Disaster management", A P H Publishers, 2011.

REFERENCE BOOKS

2. VenuGopalRao.K, "Geoinformatics for Disaster Management", Manglam Publishers and Distributors, 2010.
3. Singh.R.B, "Natural Hazards and Disaster Management: Vulnerability and Mitigation", Rawat Publications, 2006.
4. Gupta.H.K, "Disaster Management", University Press, India, 2003.
5. Gupta.M.C, "Manuals on Natural Disaster management in India", National Centre for Disaster Management,IIPA, New Delhi, 2001.

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