

**LESSON PLAN 2022-23**  
**GOVT. POLYTECHNIC, MALKANGIRI**

<b>DISCIPLINE:</b> Civil Engineering	<b>SEMESTER:</b> 6 <sup>th</sup> Semester	<b>NAME OF THE TEACHING FACULTY:</b> Pritiranjana Priyadaeshi Patro (Civil Engg.)
<b>SUBJECT:</b> Disaster Management	<b>NO. OF DAYS/PER WEEK CLASSES ALLOTTED:</b> 4	<b>SEMESTER FROM DATE:</b> 14/02/2023 <b>TO DATE:</b> _____ <b>NO. OF WEEKS:</b> 15
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>
<b>Introduction</b>		
1 <sup>st</sup>	1 <sup>st</sup>	1.1 Definition of hazards, disasters. Explain the difference between hazard and disaster. 1.2 Concept of risk and vulnerability. Risk reduction: preparedness and mitigation
	2 <sup>nd</sup>	1.3 Disaster management cycle.
	3 <sup>rd</sup>	1.4 Personal and community awareness
	4 <sup>th</sup>	1.5 Types of disasters, earthquake, Tsunami, Landslide, cyclone, flood, drought, forest fire, Chemical and industrial accidents
<b>Earthquakes.</b>		
2 <sup>nd</sup>	1 <sup>st</sup>	2.1 Definition and concept, intensity, Richter's scale
	2 <sup>nd</sup>	2.2 Element of risk.
	3 <sup>rd</sup>	2.3 Hazard Zones in India.
	4 <sup>th</sup>	2.4 Typical effects.
3 <sup>rd</sup>	1 <sup>st</sup>	2.5 Main mitigation strategies, safe Engineering practice, Indian Standard code and enforcement Bye-Laws
	2 <sup>nd</sup>	2.5 Main mitigation strategies, safe Engineering practice, Indian Standard code and enforcement Bye-Laws
	<b>Tsunami.</b>	
	3 <sup>rd</sup>	3.1 Definition and concept. 3.2 Onset, Type and Cases
4 <sup>th</sup>	4 <sup>th</sup>	3.3 Warning. 3.4 Elements at risk.
	1 <sup>st</sup>	3.5 Typical effects, Physical damage, Environmental Damage, Casualties and Public health
	2 <sup>nd</sup>	3.6 Specific Preparedness: Hazard Mapping, Early warning systems, Community preparedness
	3 <sup>rd</sup>	3.7 Main mitigation strategies: Site planning and land management, Engineering structures. Flood management.
	<b>Landslides.</b>	
5 <sup>th</sup>	4 <sup>th</sup>	4.1 Definition, concept
	1 <sup>st</sup>	4.1 Definition, concept. 4.2 Onset time and warning. 4.3 Causes.
	2 <sup>nd</sup>	4.4 Elements at risk. 4.5 Hazard zones and Indian landslides.
	3 <sup>rd</sup>	4.6 Typical effects: Physical damage, casualties.
	4 <sup>th</sup>	4.7 Main mitigation strategies: Hazard mapping, Landslide

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		practice, retaining walls, Surface drainage control works, Engineering structures. 4.8 Community based mitigation <b>Cyclones</b>
6 <sup>th</sup>	1 <sup>st</sup>	5.1 Definition, concept 5.2 Onset type, Warning.
	2 <sup>nd</sup>	5.3 Elements at risk. 5.4 Typical effects.
	3 <sup>rd</sup>	5.5 Indian Hazard Zones
	4 <sup>th</sup>	5.5 Indian Hazard Zones
7 <sup>th</sup>	1 <sup>st</sup>	5.6 Main mitigation strategies: Hazard mapping, Land use control, Engineering Structures, Flood management, improving vegetation cover
	2 <sup>nd</sup>	5.7 Community based mitigation <b>Floods.</b>
	3 <sup>rd</sup>	6.1 Definition, concept, Onset type. 6.2 Warning
	4 <sup>th</sup>	6.3 Elements at risk. 6.4 Hazard zones and Indian floods.
8 <sup>th</sup>	1 <sup>st</sup>	6.5 Typical effects: Physical damage, Casualties and Public health, Crops and flood.
	2 <sup>nd</sup>	6.5 Typical effects: Physical damage, Casualties and Public health, Crops and flood.
	3 <sup>rd</sup>	6.6 Main mitigation strategies: Mapping of the flood prone areas, land use control, Flood control and management.
	4 <sup>th</sup>	6.7 Community based mitigation
9 <sup>th</sup>		<b>Droughts.</b>
	1 <sup>st</sup>	7.1 Definition, concept. 7.2 Onset type and warning.
	2 <sup>nd</sup>	7.3 Elements at risk. 7.4 Typical effects
	3 <sup>rd</sup>	7.5 Main mitigation strategies: drought monitoring, water supply augmentation and conservation.
10 <sup>th</sup>	4 <sup>th</sup>	7.5 Main mitigation strategies: drought monitoring, water supply augmentation and conservation.
	1 <sup>st</sup>	7.6 Drought Planning <b>Forest Fire.</b>
	2 <sup>nd</sup>	8.1 Definition and concept. 8.2 Forest fire damages in India.
	3 <sup>rd</sup>	8.3 Operational fire management systems and organizations. 8.4 Community involvement.
11 <sup>th</sup>	4 <sup>th</sup>	8.5 Public policies concerning fire.
	1 <sup>st</sup>	8.6 The needs of fire management
	2 <sup>nd</sup>	8.6 The needs of fire management
		<b>Other type of Hazards and disasters</b>
	3 <sup>rd</sup>	9.1 Chemical and Industrial disasters: brief description, effects, Preparedness.

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	4 <sup>th</sup>	9.1 Chemical and Industrial disasters: brief description, effects, Preparedness.
12 <sup>th</sup>	1 <sup>st</sup>	9.2 Epidemic: Onset type, warning, causes and effects, risk reduction measures.
	2 <sup>nd</sup>	9.2 Epidemic: Onset type, warning, causes and effects, risk reduction measures.
	3 <sup>rd</sup>	9.3 Heat waves: definition, dangers and effects, Forecasts and warning, awareness
	<b>Policy, Planning and Institutions for disaster mitigation</b>	
	4 <sup>th</sup>	10.1 Role of policy makers in disaster risk reduction, course for specific action.
13 <sup>th</sup>	1 <sup>st</sup>	10.1 Role of policy makers in disaster risk reduction, course for specific action.
	2 <sup>nd</sup>	10.2 Institutional arrangement in India: Central level, State Level, District and Block level
	3 <sup>rd</sup>	10.2 Institutional arrangement in India: Central level, State Level, District and Block level
	4 <sup>th</sup>	10.3 Major institutions in National and State level
<b>Geospatial Application for Disaster Risk Management at Global and Local level</b>		
14 <sup>th</sup>	1 <sup>st</sup>	11.1 Overview of Disaster Risk Management (DRM) and relevance of geospatial technologies in DRM
	2 <sup>nd</sup>	11.1 Overview of Disaster Risk Management (DRM) and relevance of geospatial technologies in DRM
	3 <sup>rd</sup>	11.2 Earth observation technologies and their application in disaster management
	4 <sup>th</sup>	11.2 Earth observation technologies and their application in disaster management
15 <sup>th</sup>	1 <sup>st</sup>	11.3 Remote sensing and geospatial intelligence for disaster management.
	2 <sup>nd</sup>	11.4 Application of remote sensing in hydro metrological, geological and environmental disaster.
	3 <sup>rd</sup>	11.5 International systems for disaster risk management:- UN-SPIDER, International Charter for Space and Major Disasters, Copernicus Emergency Management Service & Sentinel Missions
	4 <sup>th</sup>	11.5 International systems for disaster risk management:- UN-SPIDER, International Charter for Space and Major Disasters, Copernicus Emergency Management Service & Sentinel Missions

28/02/23  
13/12/23

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