

		National Institute of Technology Meghalaya An Institute of National Importance							CURRICULUM		
Programme		Master of Technology					Year of Regulation		2025		
Department		Civil Engineering					Semester		1		
Course Code	Course Name	Pre-requisite	Credit Structure				Marks Distribution				
			L	T	P	C	INT	MID	END	Total	
CE 539	Disaster Risk Management and Emergency Response	NIL	3	0	0	3	50	50	100	200	
Course Objectives	- To provide basic conceptual understanding of disasters - To understand approaches of Disaster and risk Management. - To build skills to respond to disaster - To understand Rehabilitation, Reconstruction and Recovery in the event of Disaster		Course Outcomes	CO1	Able to understand the need and significance of studying disaster management						
				CO2	Able to understand the need and significance of studying risk management						
				CO3	Able to create awareness about disaster prevention and risk reduction						
				CO4	Able to understand the Rehabilitation, Reconstruction and Recovery in the event of Disaster						
				CO5	Able to understand various methods of risk reduction measures and risk mitigation with strategic planning						
SYLLABUS											
No.	Content							Hours		COs	
I	Introduction – Disaster: Definition, Concepts of Disaster- Factors and Significance - Disaster cycle - Phases of Disaster. Culture of safety, prevention, mitigation and preparedness community based DRR - Impact of Disasters and Hazards.							11		CO1	
II	Introduction to Risk Concepts: Risk Concepts, Elements of Risk, Perception of Risk, Acceptable risk, Introduction to risk evaluation; Fundamentals and methodologies for risk analysis, assessment, evaluation and management Definitions and Overview of risks and dangers- Assessment of risks for different disaster types, extreme events and environmental health risk, carcinogenic materials and environment. Discussion on selected case studies to analyze the potential impact of disasters.							8		CO2	
III	Approaches to Disaster Risk Reduction (DRR) - Various approaches on DRR - Roles and responsibilities of- community, Panchayati Raj Institutions/Urban Local Bodies (PRIs/ULBs), States, Centre, and other stakeholders- State Disaster Management Authority (SDMA)-Early Warning System- Advisories from Appropriate Agencies.							6		CO3	
IV	Risk Assessment and Reduction: Risk analysis techniques; Process of Risk assessment, Analytical systems for risk assessment, Natural hazard/ risk assessment, understanding climate risk, Mapping of risk assessment, Decision making for risk reduction, Problems in risk assessment Participatory risk assessment							9		CO4	
V	Strategic Planning- Policies and approaches: Data model for collection of information. Risk assessment applications for disaster mitigation and management problems, Prevention and response mechanism, Emergency Management teams, National and International disaster recovery policies and Programs							10		CO5	
Total Hours							42				
Essential Readings											
1. Singhal J.P. "Disaster Management", Laxmi Publications,ISBN-10: 9380386427 ISBN-13: 978-9380386423, 2010											
2. Gupta Anil K, Sreeja S. Nair. Environmental Knowledge for Disaster Risk Management, NIDM, New Delhi, 2011											
3. Rougier, J., Risk and uncertainty assessment for natural hazards, Cambridge University Press, 2013											
Supplementary Readings											
1. Kapur Anu Vulnerable India: A Geographical Study of Disasters ,IIAS and Sage Publishers, New Delhi, 2010.											
2. Govt. of India: Disaster Management Act, Government of India, New Delhi, 2005 Government of India, National Disaster Management Policy, 2009.											
2. Petak, W. J. and Atkisson, A. A. "Natural Hazard Risk Assessment and Public Policy: Anticipating and Unexpected". Springer New York, 2010											