

Sustainability in Disaster Management (Elective)

Code DM-817	Credit Hours 3 – 0
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Course Description:

Aims to equip students with the knowledge and skills to integrate environmental sustainability into disaster risk management. It covers Eco-DRR, climate adaptation, green infrastructure, and policy frameworks like the Sendai Framework and SDGs. Through case studies and practical exercises, students will learn sustainable approaches to disaster preparedness, response, and recovery.

Course Content:

Topics	Learning Outcomes
Introduction to Environmental Sustainability in Disaster Management	Understanding the role of environmental sustainability in disaster risk management (DRM) and resilience-building.
Global Frameworks for Sustainability & Disaster Risk Reduction (DRR)	Familiarity with the Sendai Framework, SDGs, Paris Agreement, IPCC reports, and their role in sustainable disaster management.
Ecosystem-Based Disaster Risk Reduction (Eco-DRR)	Understanding nature-based solutions, green infrastructure, and biodiversity conservation in disaster risk reduction.
Climate Change and Disaster Nexus	Exploring the link between climate change, extreme weather events, and disaster risks at local, regional, and global scales
Sustainable Land & Water Management in DRM	Examining land use planning, watershed management, and sustainable agriculture to mitigate disaster risks.
Environmental Impact Assessment (EIA) &	Learning how EIA & SEA support sustainable disaster preparedness, response, and recovery

Strategic Environmental Assessment (SEA) in DRM	
Circular Economy and Sustainable Recovery	Exploring waste management, resource efficiency, and low-carbon rebuilding after disasters.
Disaster-Resilient Infrastructure & Green Technologies, Environmental Law on Sustainability	Introduction to climate-smart buildings, renewable energy, and resilient urban planning in DRM. Introduction to environmental law on sustainability
Case Studies on Sustainable Disaster Management	Analyzing real-world projects that integrate sustainability in disaster risk reduction and response.
Early Warning Systems & Community-Based Adaptation	Understanding risk identification, forecasting, and participatory approaches for climate resilience
Capstone Project	Applying course knowledge to design a sustainability-driven disaster management strategy for a real-world scenario.

Textbooks:

No textbook for this course. The course will be based on different reference books, reports, and conference and journal publications.

Reference Material:

1. IPCC Reports on Climate Change and Disaster Risk Reduction.
2. UNEP's Guidelines on Eco-DRR.
3. World Bank & ADB Environmental and Social Frameworks.
4. Scientific papers on nature-based solutions for DRR.
5. Case studies from UNDRR and IFRC.

Pre-requisite:

Students with Engineering and Science Background

Assessment System

Quizzes	15%
Assignments	10%
Mid-Semester Exam	25%
Term Project/Paper	10%
End Semester Exam	40%