



Hemvati Nandan Bahuguna Garhwal University
Srinagar Garhwal (Uttarakhand) - 246174
(A Central University)



Ref. No. MPS/Geol/25-26

Date: 02/ 09/2025

HNB Garhwal University
Disaster Management – Syllabus {Credits 04 (2+2)}

(For Undergraduate students B.Sc./B.A First year as an SEC course at HNBGU)

Unit 1: Introduction to Disasters

- Definition and Classification: Natural and Man-made disasters
- Concepts: Hazard, vulnerability, risk, resilience, capacity building
- Disaster Cycle: Preparedness, response, recovery, mitigation
- Brief about Global and Indian perspectives: Case studies from Himalaya

Unit 2: Natural Disasters

- Earthquakes, Landslides, Tsunamis, Floods, Glacial lake outburst floods (GLOFs): Causes and warning System
- Volcanic Eruptions Types, monitoring, volcanic hazards
- Cloud burst, Cyclones & Storm Surges, Classification, impacts, prediction
- Forest Fires: Causes, spread, control measures
- Desertification and Droughts: Types, causes, and management

Unit 3: Anthropogenic Disasters

- Industrial & Chemical Accidents: Bhopal disaster, oil spills
- Nuclear Hazards: Chernobyl, Fukushima, safety measures
- Urban Disasters: Building collapses, fires
- Environmental Pollution: Air, water, soil contamination incidents

Unit 4: Disaster Preparedness and Management & Policies, Institutions, and Governance

- Early Warning Systems: Seismic monitoring, meteorological forecasting
- Disaster Risk Reduction (DRR): Sendai Framework, NDMA guidelines
- Emergency Planning: Evacuation, communication strategies
- Role of Remote Sensing & GIS in hazard mapping and disaster response
- Incident Command Systems and coordination mechanisms
- Relief Operations: Logistics, humanitarian aid, temporary shelters
- Post-Disaster Reconstruction: Rehabilitation, livelihood restoration
- Psychosocial Support and community resilience building
- International Frameworks: UNDRR, Hyogo Framework, Sendai Framework
- Indian Disaster Management Act (2005) and institutional framework
- Role of Armed Forces, NGOs, and Community-Based Organizations
- Insurance and Risk Transfer Mechanisms

Practical/Tutorial/Assignments

- Hazard Mapping using field surveys and GIS
- Community-Based Disaster Risk Reduction (CBDRR) projects



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- Mock Drills for earthquake/flood/fire scenarios
- Case Study Reports on recent disasters

Examination should be MCQ

References

1. Alexander, D. (2002). Principles of Emergency Planning and Management. Oxford University Press.
2. NDMA (2005 & updates). Disaster Management Guidelines. Government of India.
3. Coppola, D.P. (2015). Introduction to International Disaster Management. Elsevier.
4. Shaw, R., & Krishnamurthy, R. (2009). Disaster Management: Global Challenges and Local Solutions. Universities Press.

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