

**Syllabus for Multidisciplinary Course**  
**Centre for Disaster Risk Reduction**

**Multidisciplinary Course**  
**(FYUGP 1<sup>st</sup> Semester)**

Basket	Course Code	Course Title	Credits	L	T	P	S
Science	CDRR100MD	Understanding Natural Disasters	03	3	0	0	0
<b>Course Objectives:</b> This course introduces students to natural disasters, their causes and impacts. The course aims to provide a comprehensive understanding of the key concepts related to disasters and underlying principles of natural disasters and how scientific knowledge can be harnessed to enhance disaster resilience. Through the combination of lectures, theoretical discussions, & case studies, students will gain a comprehensive understanding of how to identify, investigate, monitor, and reduce the risk of potential disasters in the neighbourhood.							
<b>Course Outcomes:</b>							
<ul style="list-style-type: none"> <li>• Key concepts related to disasters,</li> <li>• Nature, origin, and types of natural disasters,</li> <li>• Causes and effects of various types of natural disasters,</li> </ul>							
<b>Course Contents</b>							
<b>Unit-I: Fundamentals of Disasters</b> Key Concepts – Disaster, Hazard, Vulnerability, Risk, and Capacity; Types of Natural Disasters – Geological & Hydro-meteorological Disasters							
<b>Unit-II: Geological Disasters</b> Geological Disasters – Origin and Effects; Earthquakes, Landslides, Volcanoes, & Tsunamis							
<b>Unit-III: Hydro-meteorological Disasters</b> Hydro-meteorological Disasters – Origin and Effects; Floods, Flash-floods, Glacier Lake Outburst Floods (GLOFs), Droughts, Cyclones, Snow Avalanches							

**Suggested Reading:**

1. "Natural disasters" by Alexander D., 2018; Routledge.
2. "Understanding Disasters" [https://nidm.gov.in/PDF/Disaster\\_about.pdf](https://nidm.gov.in/PDF/Disaster_about.pdf)
3. "Geological Hazards and Hydro-meteorological Hazards" [www.nidm.gov.in](http://www.nidm.gov.in)
4. "Natural Hazards & Disaster Management Vulnerability and Mitigation" by R.B. Singh, 2012; Rawat Publications.
5. Earthquake & Natural Disasters; Manik Kar. Motilal Banarsidass Publishers Private Limited.
6. "An introduction to disaster management" by S. Vaidyanathan.
7. Other resources shall be shared during the course

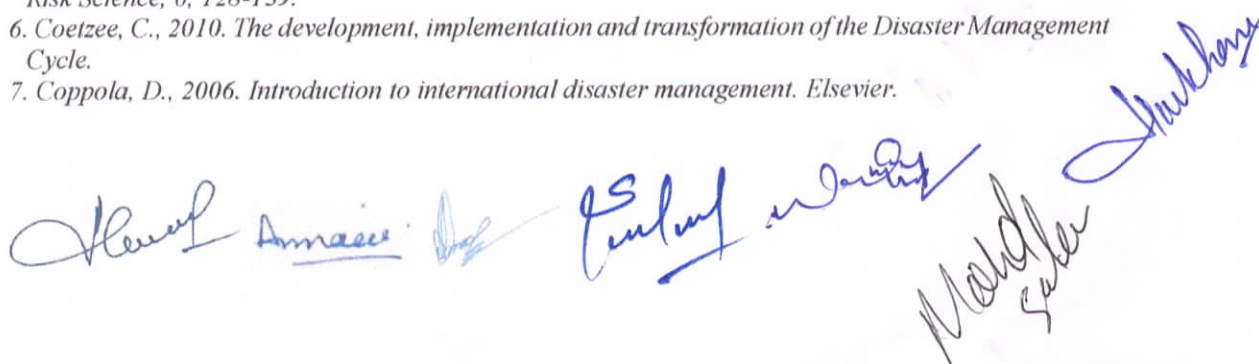
**Syllabus for Multidisciplinary Course**  
**Centre for Disaster Risk Reduction**

**Multidisciplinary Course**  
**(FYUGP 2<sup>nd</sup> Semester)**

Basket	Course Code	Course Title	Credits	L	T	P	S
Science	CDRR200MD	Managing Disasters	03	3	0	0	0
<b>Course Objectives:</b> This course introduces students about the basic principles and various frameworks of disaster management. It aims to provide a comprehensive understanding of the key concepts related to planning and communication in disaster preparedness.							
<b>Course Outcomes:</b> <ul style="list-style-type: none"> <li>• Basic principles of disaster management,</li> <li>• Various framework for disaster management,</li> <li>• Understanding of disaster preparedness plans,</li> </ul>							
<b>Course Contents</b>							
<b>Unit-I: Disaster Management</b> Basic principles of disaster management; Disaster management cycle; Planning and communication in disaster preparedness; Predictability, forecasting, and warning; Disaster Management Act, 2005 (Amendment 2018) – Meaning and Objectives;							
<b>Unit-II: Frameworks in Disaster Management</b> Institutional Framework in India – National Disaster Management Authority (NDMA), State Disaster Management Authority (SDMA), National Disaster Relief Force (NDRF); Yokohama Declaration (1994); Hyogo Framework for Action (HFA, 2005-2015); Sendai Framework for Disaster Risk Reduction (2015-2030);							
<b>Unit-III: Disaster Management Plans</b> Disaster preparedness plan for local community; Vulnerability assessment of a particular hazard/disaster; Develop and present plans for disaster risk reduction in local communities;							

**Suggested Reading:**

1. Patel, A.K., and Jain, D., 2022. *Disaster Risks and Management in India: A Critical Analysis of the Disaster Management Act*. In *5<sup>th</sup> World Congress on Disaster Management*, Routledge, VI, 300-310.
2. Subramanian, R., 2018. *Disaster Management*. Vikas Publishing House.
3. Pandey, R.K., 2016. *Legal framework of disaster management in India*. ILI Law Review, Winter.
4. Sulphery, M.M., 2016. *Disaster management*. PHI Learning Pvt. Ltd.
5. Tozier de La Poterie, A., and Baudoin, M.A., 2015. *From Yokohama to Sendai: Approaches to participation in international disaster risk reduction frameworks*. *International Journal of Disaster Risk Science*, 6, 128-139.
6. Coetzee, C., 2010. *The development, implementation and transformation of the Disaster Management Cycle*.
7. Coppola, D., 2006. *Introduction to international disaster management*. Elsevier.



**Syllabus for Multidisciplinary Course  
Centre for Disaster Risk Reduction**

**Multidisciplinary Course  
(FYUGP 3<sup>rd</sup> Semester)**

Basket	Course Code	Course Title	Credits	L	T	P	S
Science	CDRR300MD	Strategies in Disaster Risk Reduction	03	2	0	0	1
<b>Course Objectives:</b> This course aims to equip students with a comprehensive understanding of disaster risk reduction concepts, conduct risk assessments, develop mitigation strategies, and formulate preparedness plans for effective management.							
<b>Course Outcomes:</b> Upon completion, students will be able to apply DRR concepts, perform risk assessments, design mitigation strategies, create preparedness plans: formulate comprehensive disaster preparedness plans, analyse institutional roles, address psychological and public health aspects and promote community engagement.							
<b>Course Contents</b>							
<b>Unit-I: Disaster Risk Reduction</b> Disaster risk reduction: Terms and concepts; Disaster risk reduction Initiatives at National and Regional Level; Crisis Management; Disaster Risk Governance; Disaster Risk Finance;							
<b>Unit-II: Disaster Preparation</b> Risk assessments with reference to Earthquakes, Floods and Landslides; Preparedness and Mitigation strategies; Search and Rescue; Relief Measures, Reconstruction and Rehabilitation; Disaster Psychological Care and Public Health;							
<b>Unit-III: Training and Capacity Building</b> Disaster Preparedness Plan; Community Based Disaster Risk Management; Community Participation- Training and Capacity Building; Resilient Critical Infrastructure; Role of Institutions in Disaster Management;							

**Suggested readings:**

1. Lee, E.M., and Jones, D.K., 2023. *Landslide risk assessment*. ICE publishing.
2. Clarke, D.J., Mahul, O., Poulter, R., and Teh, T.L., 2017. *Evaluating sovereign disaster risk finance strategies: a framework*. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 42, 565-584.
3. Aven, T., 2016. *Risk assessment and risk management: Review of recent advances on their foundation*. *European journal of operational research*, 253(1), 1-13.
4. Petz, D. 2014. *Strengthening regional and national capacity for disaster risk management: the case of ASEAN*. *Brookings-LSE Project on Internal Displacement*, 14.
5. Ben Wisner, J.C., and Gaillard, I.K., 2012. *Handbook of Hazards and Disaster Risk Reduction*.
6. Shaw, R., 2012. *Community based disaster risk reduction*. Emerald Group Publishing.
7. Reinhard M., 2004. *Natural Disaster Risk Management and Financing Disaster*.

