



आपदा न्यूनीकरण एवं प्रबन्धन उत्कृष्टता केन्द्र, भारतीय प्रौद्योगिकी संस्थान रुड़की,

रुड़की – 247667

CENTRE OF EXCELLENCE IN DISASTER MITIGATION & MANAGEMENT, 3<sup>rd</sup> Floor,  
New Building, Opposite Biotechnology Department

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1. Subject Code : **DMN-507** Course Title : **Disaster Preparedness and Mitigation**
2. Contact Hours: **L: 3 T: 1 P: 0**
3. Examination Duration (Hrs.) : **Theory: 3 Practical: 0**
4. Relative Weight : **CWS 25 PRS 0 MTE 25 ETE 50 PRE 0**
5. Credits: **4** 6. Semester: **Spring** 7. Subject Area: **PEC**
8. Pre-requisite: **Nil**
9. Objective: To impart knowledge towards the assessment of various hazards, disasters and their mitigation.
10. Details of Course :

Sl. No.	Particulars	Contact Hours
1.	<b>Introduction to Various Hazard:</b> Definitions, vulnerability and risk, hazard estimation, hazard mapping, effect of site conditions on structures, event monitoring, processing and integration of data (such as topography, geology, remote sensing, various geophysical anomalies, soil characteristics, economic development)	10
2.	<b>Damages:</b> Grade of damages, direct and indirect damages, damage to structures, lessons learnt	5
3.	Seismic Vulnerability and Risk: Seismic Vulnerability Assessment – various methodologies, building typology survey, empirical and analytical methods, estimation of life loss, direct and indirect economic losses, shelter needs.	8
4.	<b>Disaster Mitigation:</b> Warning and evacuation, do's and don't about disaster, damage survey for designing aid package and detailed survey for reconstruction, repair and retrofitting, post disaster surveys, survey proformas, long term measures- Disaster resistant construction, codal practices, retrofitting cost-benefit analysis.	10
5.	<b>Post Disaster Issues:</b> Post Disaster Reconstruction and recovery for sustainable development, issues and policies	3
6.	<b>Disaster Management Act :</b> Disaster management policy; Techno legal aspect: Techno-Legal and Techno-Financial work; Model Town and country planning legislation land use zoning regulation, development control regulations and building bye-laws registration, qualification and duties of professionals, disaster response policy.	6
	<b>Total</b>	<b>42</b>

11. Suggested Books :

Sl. No.	Name of Authors/Book/Publisher	Year of Publication / Reprint
1.	Dowrick D.J., Earthquake Risk Reduction, John Wiley & Sons	2003
2.	Reiter, L., Earthquake Hazard Analysis: Issues and insights, Columbia University Press	1992
3.	Aki, K. and Richard, P. G., Quantitative seismology: Theory and Methods, Vol I and II, W. H. Freeman & Co.	1980
4.	Mileti D.S., Disasters by Design: A Reassessment of Natural Hazards in United States, The National Academic Press	1999
5.	Bryant E., Natural Hazards, Cambridge University Press	2005
6.	Richter,C.F., Elementary Seismology, W. H. Freeman and Company Inc/ Eurasia	1969