

Centre For Environmental Studies

UG-OPEN COURSE:

Disasters, Environment, Risk Reduction and Climate Change Adaptation

Course Code	
Title of the course	Disasters, Environment, Risk Reduction and Climate Change Adaptation
Semester in which the course is to be taught	5
No. of credits	3
No. of contact hours	72

COURSE OBJECTIVE

1. To widen the perspective of the students' perspective with respect to hazards and disasters.
2. To learn disaster management by adding ecosystem components.
3. To learn the disaster mitigation and resilience.

OUTCOME

Students would widen their perspectives to realize that hazards become disasters only if they are poorly managed and that disaster management can be significantly improved by adding ecosystem components.

COURSE DESIGN

Module 1	15 Hours
Module 2	15 Hours
Module 3	12 Hours
Module 4	20 Hours
Module 5	10 Hours

MODULE 1: INTRODUCTION TO DISASTER MANAGEMENT (15 Hours)

Understanding the Concepts and definitions of Disaster, Hazard, Vulnerability, Risk, Capacity – Disaster and Development, and disaster management. Analyze Relationship between Development and Disasters. Basic concept of Disaster risk reduction (DRR), Climate Change Adaptation (CCA). Ecosystems and biodiversity in relation to CCA and DRR. Disaster management cycle, preparedness and prevention. Disaster relief, recovery & reconstruction.

MODULE 2: ECOSYSTEM-BASED DISASTER RISK REDUCTION (15 Hours)

Global environmental problems and disasters. Fundamental concepts of ecosystems and ecosystem services. Linking sustainable development, disasters and environment. Ecosystem principles for DRR. Major eco-zones, hazards and impact on populations. Ecosystem services for vulnerability reduction. Ecological Engineering for DRR. Valuing ecosystem services.

MODULE 3: ECO-DRR INSTRUMENTS AND APPROACH (12 Hours)

Introduction to instruments and approaches for Eco-DRR. Spatial planning tools and approaches for DRR. Integrated Water Resources Management/River basin management. Integrated Coastal Zone Management. Managing ecosystems for urban risk reduction. Ecosystem-based Adaptation.

MODULE 4: APPLICATIONS OF SCIENCE AND TECHNOLOGY FOR DRR AND CCA (20 Hours)

Geo-informatics in Disaster Management (RS, GIS, GPS and RS) Disaster Communication System (Early Warning and Its Dissemination) Land Use Planning and Development Regulations Disaster Safe Designs and Constructions Structural and Non Structural Mitigation of Disasters S&T Institutions for Disaster Management in India.

MODULE 5: CASE STUDY (10Hours)

Case studies - Different disaster management in different counties with different disaster situation.

REFERENCE

- 1 Coppola D P, 2007. Introduction to International Disaster Management, Elsevier Science (B/H), London.
2. Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi
3. An overview on natural & man-made disasters and their reduction, R K Bhandani, CSIR, New Delhi
4. World Disasters Report, 2009. International Federation of Red Cross and Red Crescent, Switzerland
5. Encyclopedia of disaster management, Vol I, II and III. Disaster management policy and administration, S L Goyal, Deep & Deep, New Delhi, 2006
6. Encyclopedia of Disasters – Environmental Catastrophes and Human Tragedies, Vol. 1 & 2, Angus M. Gunn, Greenwood Press, 2008
- 7 Disasters in India Studies of grim reality, AnuKapur& others, 2005, 283 pages, Rawat Publishers, Jaipur
8. Management of Natural Disasters in developing countries, H.N. Srivastava & G.D. Gupta, Daya Publishers, Delhi, 2006, 201 pages

9. Natural Disasters, David Alexander, Kluwer Academic London, 1999, 632 pages
- 10 Disaster Management Act 2005, Publisher by Govt. of India
- 11 Publications of National Disaster Management Authority (NDMA) on Various Templates and Guidelines for Disaster Management
- 12 NIDM Publications
- 13 High Power Committee Report, 2001, J.C. Pant
- 14 Disaster Mitigation in Asia & Pacific, Asian Development Bank
- 15 National Disaster Management Policy, 2009, GoI
- 16 Disaster Preparedness Kit, American Red Cross