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| <b>Subject Code: 2SC1000332</b>      | <b>Subject Title: Natural calamities &amp; Disaster Management</b> |
| <b>COURSE TYPE: Elective Generic</b> |                                                                    |

**Course Objective:** 1. To provide basic conceptual understanding of disasters.  
2. To understand approaches of Disaster Management  
3. To build skills to respond to disaster

**Learning Outcome:** The students will learn about the environmental disasters, pre disaster management and post disaster management, and social awareness.

| Teaching scheme (hours) per week |           | Credit |           |       | Theory Marks    |                  | Practical Marks |                  | Total |
|----------------------------------|-----------|--------|-----------|-------|-----------------|------------------|-----------------|------------------|-------|
| Theory                           | Practical | Theory | Practical | Total | Uni. Assessment | Cont. Assessment | Uni. Assessment | Cont. Assessment |       |
| 2                                | --        | 2      | --        | 2     | --              | 50               | --              | --               | 50    |

| Unit | Content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Lectures | Weight (%) |
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| 1    | <b>Definition and types of disaster:</b> Hazards and Disasters, Risk and Vulnerability in Disasters, Natural and Man-made disasters, earthquakes, floods drought, landside, land subsidence, cyclones, volcanoes, tsunami, avalanches, global climate extremes. Man-made disasters: Terrorism, gas and radiations leaks, toxic waste disposal, oil spills, forest fires.<br><br><b>Study of Important disasters:</b> Earthquakes and its types, magnitude and intensity, seismic zones of India, major fault systems of India plate, flood types and its management, drought types and its management, landside and its managements case studies of disasters in Sikkim (e.g) Earthquakes, Landside). Social Economics and Environmental impact of disasters. | 15       | 50%        |
| 2    | <b>Mitigation and Management techniques of Disaster</b> Basic principles of disasters management, Disaster Management cycle, Disaster management policy, National and State Bodies for Disaster Management, Early Warning Systems, Building design and construction in highly seismic zones, retrofitting of buildings.<br><b>Training, awareness program and project on disaster management</b> :Training and drills for disaster preparedness, Awareness generation program, Usages of GIS and Remote sensing techniques in disaster management, Mini project on disaster risk assessment and preparedness for disasters with reference to disasters in Sikkim and its surrounding areas.                                                                   | 15       | 50%        |

**Reference Books:**

- Disaster Management Guidelines, GOI-UND Disaster Risk Program (2009-2012)
- Damon, P. Copola, (2006) Introduction to International Disaster Management, Butterworth Heineman.
- Gupta A.K., Niar S.S and Chatterjee S. (2013) Disaster management and Risk Reduction, Role of Environmental Knowledge, Narosa Publishing House, Delhi.
- Murthy D.B.N. (2012) Disaster Management, Deep and Deep Publication PVT. Ltd. New Delhi.
- Modh S. (2010) Managing Natural Disasters, Mac Millan publishers India LTD.