

SEMESTER – I (CORE COURSES)

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| GEOG.801: | ENVIRONMENTAL HAZARDS: IMPACTS AND RECOVERY | 3(3-0) |
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Course Objectives

This course aims to investigate;

1. The distribution and attributes of hazards internationally
2. The patterns and determinants of exposure, risk, vulnerability and resilience to hazards,
3. How people perceive, manage and adjust to hazardous environments.

Learning Outcomes

On completion of this course, the students will be able to:

- Demonstrate knowledge of a range of environmental hazards.
- Research, interpret and synthesize information from a range of sources relevant to the analysis of hazards, risks, vulnerability, resilience, adaptation and management.
- Analyze information to gain understanding of hazards and the landscapes in which they exist and thereby allow critical assessments of hazards and approaches (adaptation, mitigation or avoidance), and how to undertake appropriate decisions.
- Communicate knowledge, interpretations and analysis in text, graphical formats effectively and in a manner appropriate to the field.
- Understand and use the language, frameworks and tools used in hazard geography and emergency management.

Course Outline

1. Introduction to Environmental Hazards

- Terminology and definitions
- Concept of vulnerability
- Trends in natural disasters

2. Risk Assessment and Perception

- The risk management framework
- How to assess risk
- Role of risk perception

3. River and Flood Hazards

- The river systems;
- Types of flood hazards;
- Impact of human activities on flooding;
- Prevention and mitigation measures

4. Droughts

- Types of droughts;
- Effects of ENSO; Human causes; Impacts;
- Mitigation and adaptation strategies; Case studies

5. Coastal Hazards

- Storms and tsunamis: Formation and impacts of tropical cyclones and storm surges; Coastal erosion and mitigation;
- Tsunami wave behaviors;
- Palaeo-tsunami research for risk reduction

6. Bushfires

- Causes; Environmental consequences- pros and cons; Impacts;
- Peat fires and the related hazards;
- Forecasting and adaption;
- Community and individual preparedness

7. Geological Hazards

- Earthquake and volcanic hazards
- Prediction and Preparedness

8. Disaster Recovery

- Response and recovery;
- Response and social media in disaster,
- From disaster to resilience
- Role of National institutions, DDMA, PDMA, NDMA and etc.

9. The Impacts of Disasters

- Short-medium-term effects directly involving people and goods affected by a disaster; Medium- and long-term socio-economic effects;
- Short-to-long-term physical and physiological effects on people
- Psychological effects

Recommended Books

1. Smith, K. (2013) “Environmental Hazards: Assessing the Risk and Reducing Disaster. 6th edition. Rutledge.
2. UN, (2011) “Natural Hazards, And Un-Natural Disasters: The Economics of Effective Prevention”, The WORLD BANK Washington, DC. USA.
3. Pradhan B. Kumar (2007) “Disaster Preparedness for Natural Hazards: Current Status in Nepal”, International Centre for Integrated Mountain Development (ICIMOD) Nepal.
4. Edward Bryant (2005)“Natural Hazards” Edinburgh Building, Cambridge Univ; Press, UK.
5. Wisner, B., Blaikie, P. et.al. (2004) “At risk: Natural Hazards, people's vulnerability and disasters”, 2nd edition. London: Taylor & Francis.
6. Don Schramm and Robert Dries, (1986) “Natural Hazards: Causes and Effects”, UW-DMC Disaster Management Center, University of Wisconsin-Madison, USA.

Recommended Journals

- *Natural Hazards (Springer)*
- *Natural Hazards and Earth System Sciences (EGU)*
- *The International Journal of Disaster Risk Reduction (IJDRR)*
- *Journal of Geography and Natural Disasters*
- *Natural Hazards Review*