

**SEMESTER-IV SPECIALIZATION: PHYSICAL GEOGRAPHY**

**GEOG. 671:**

**APPLIED GEOMORPHOLOGY**

**3(3-0)**

**Course Objectives**

This subject will provide a brief theoretical background on geomorphological issues; geographic, environmental, human intervention, misuse of the environment, potential solutions, effective land-use and decision making processes such as identification of risk zones susceptible to natural hazards or identification of best location of establishing construction works.

**Learning Outcomes**

The students will be able to identify and effectively evaluate the existing conditions and propose suitable measures for reducing risks in decision making process for development.

**Course Outline**

**1. Introduction**

- Nature, status, scope of applied geomorphology in planning and decision making
- Its role in national conservation strategies

**2. Monitoring of Geomorphological Changes in the Environment**

- Endo-genetic Hazards: Earthquakes and Volcanicity: cause, effects and remedies, morpho-tectonic, prediction, damages zoning.
- Hydrological Hazards: causes, effects and remedies, watershed management. Drought; types and geomorphological implications.  
Glacial Hazards: Causes, effects and geomorphological damages; GLOF (Glacial lake outburst Floods).
- Surface Environmental Hazards: Soil erosion; Nature and types, causes and implications of weathering, desertification, mass-wasting and snow avalanches with associated problems.

**3. Techniques for Hazards Mapping**

- Techniques of geomorphological mapping
- Data sources for mapping.

**Recommended Books**

1. John R. Hails (2007) "Applied Geomorphology", Routledge
2. Odschalk, David (2007) "Natural Hazard Mitigation", Routledge
3. Thorne (2005) "Applied Fluvial Geomorphology", Routledge
4. Newson, Malcolm (2004) "Applied Geomorphology", Routledge
5. Singh Chandra Prakash (2002) "Applied Geomorphology", Chand Publications, India
6. Oya, M. (2001) "Applied Geomorphology For Mitigation Of Natural Hazards", Kluwer Academic Publishers Group
7. Amalkar K (1993) "Desertification and Its Control in the Thar Sahara regions", S. Pub. India.
8. Cook (1990) "Geomorphology in Environmental Management", Clarendon Press Oxford
9. Sabh, M. I. (1988) "Natural and Man Made hazards", Academic Pub I. group.
10. Donald A. (1987) "Planning for Drought", West View press UK.