NATURAL HAZARDS

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PRE-REQUISITES : Basic knowledge of Earth Science or Natural Disasters is recommended.

INTENDED AUDIENCE : PG students of Science and Engineering, Advance UG students too can take this course.

COURSE OUTLINE :
The course introduces students to natural disasters and their phenomenon, ground deformations, land-level changes, event recurrence intervals, associated environmental and depositional changes, sedimentation patterns, and all the related hazards. Some of the well-known natural disasters are earthquakes, landslides, floods, tsunamis, volcanic eruptions, storms, and cyclones etc. which cause different types of natural hazards in the associated environment and landscape.This course will emphasize their mechanism, origin, and impacts in the associated regions such as mainland, hilly terrain, floodplain/alluvial plain, and coastal regions etc., and also focus on the approaches for mitigating and minimizing hazards along with related hazard assessment.

ABOUT INSTRUCTOR :
Prof. Javed N. Malik finished his Ph. D in 1998 from M. S. University Baroda, Vadodara. Gujarat (Geology), did Post-Doctrate (Japan Society for Promotion of Science) from (1999-2001) Hiroshima University, JAPAN. Joined IIT Kanpur in 2001.

COURSE PLAN :

Week 1**:** Natural Hazards and Disasters ,Natural Hazards and Disasters ,Human Impact on Natural Disaster

Week 2**:** Mitigating Hazards,Plate Tectonics and related Hazards,Plate Tectonics and related Hazards

Week 3**:** Earthquakes and their causes,Earthquakes and their causes,Ground Motion and Failures

Week 4**:** Tsunami: Gaint Tsunamis,Tsunami: Gaint Tsunamis ,Tsunami: Generation and Movement

Week 5**:** Tsunami Hazard Assessment,Tsunami Hazard Assessment,Volcanic Hazard

Week 6**:** Landslide and their causes, Type of downslope movement, associated hazard,Landslide and their causes

Week 7**:** Floods and Human Interaction,Flood Frequency and Recurrence Interval,Flood Frequency and Recurrence Interval

Week 8**:** Storms: Tropical Cyclone,Storms: Tropical Cyclone,Hurricane, Tornado, Storm damage and safety,Wildfires