EARTH SCIENCES FOR CIVIL ENGINEERING PART - I & II

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TYPE OF COURSE: Rerun | Core | UG
COURSE DURATION: 8 weeks (26 Jul'21 - 17 Sep'21)
EXAM DATE: 26 Sep 2021

PRE-REQUISITES: Basic knowledge of geology is recommended.

INTENDED AUDIENCE: PG students of Science and Engineering (especially Earth Sciences). Advance UG students too can take this course.

COURSE OUTLINE:
The course introduces the student to basic principles of geosciences, geological hazards and their applications in civil engineering. The first 4-week modules of this course will help the student to have better understanding towards interior of the earth, earth system and its process. The next 4 week modules will cover geological hazards and environmental impact, active faults and its related hazard in India, importance of geological structures in dams and tunnels, fluvial geomorphology and ground water, tsunami, landslide and flood hazard, mapping, monitoring and management of hazards.

ABOUT INSTRUCTOR:

COURSE PLAN:
Week 1: Introduction to Geosciences in Civil Engineering, Plate Tectonics and Continental Drift, Rock-forming Minerals and their properties
Week 2: Rock-forming Minerals and their properties, Rock types and their properties, Rock types and their properties, Rock types and their properties
Week 3: Seismology and the internal Structure of the Earth, Geological Structures, Geological Structures
Week 4: Introduction to Geological Hazards, Environmental impacts of Geological hazards
Week 5: Active faults and its related hazard in India, Active faults and its related hazard in India, Active faults and its related hazard in India, Active faults Mapping and Applications
Week 6: Tsunami and related hazard, Landslide and Subsidence
Week 7: Landslide and Subsidence, Flood and related hazard, Groundwater
Week 8: Applications of Earth Sciences in Civil Engineering, Civil Engineering applications – geological considerations in Rivers, Civil Engineering applications – geological considerations in Dams, Civil Engineering applications – geological considerations in Tunnels