

**Course Learning Outcomes:**

Upon successful completion of the course, the student will be able to:

- **Understand** the science of Natural hazards and Geomorphic processes

**COURSE CONTENTS:****1. Introduction**

- Scientific Methods, Principles and logic.
- Universe, Solar System, Earth
- Concept of Time, Space, Scale, Matter, Energy, Form and
- Geomorphic Processes

**2. Dynamic Earth**

- Earth's Structure and Composition
- Plate Tectonics
- Atmospheric Structure
- Earth Heat System

**3. Hydro-meteorological Systems**

- Elements of Weather and Climate
- Hydrological Cycle
- Metrological System
- Hydro-Meteorological Phenomena

**4. Natural Hazards**

- Geo-Hazards
- Hydro-Meteorological Hazards

**Teaching Methodology**

- Lecturing
- Written Assignments
- Seminar Lectures
- Documentaries

**Assessment**

**Note: Each university can adopt the assessment of this course as per their approved criteria. However, the committee proposed the following assessment criteria:**

**1<sup>st</sup> Term (20%)**

- Assignments/Quizzes and Presentations

**Mid Term (30%)**

- Written (Long Questions, Short Questions, MCQs)

**Final Term (50%)**

- Written (Long Questions, Short Questions, MCQs)

**Text and Reference books:**

1. HYNDMAN, Donald and Hyndman, David (2010) Natural Hazards and Disasters. Brooks Cole, 3<sup>rd</sup> Revised Edition, Stamford, Connecticut, USA.
2. KREBS, Robert E. (2003) The Basics of Earth Science. Greenwood, Westport, Connecticut, USA.
3. Khan A.N. (2016) Introduction to Hazards and Disasters. Al-Azhar Environmental planning and management, Peshawar
4. STRAHLER, Alan H. and Strahler, Arthur (2004) Physical Geography: Science and Systems of the Human Environment. John Wiley & Sons, 3<sup>rd</sup> Edition, Hoboken, New Jersey, USA.
5. Rahman A., Khan AN., Shaw R. (2015) Disaster Risk Reduction Approaches in Pakistan. Springer Tokyo.