

UNIVERSITY OF LADAKH



SYLLABUS
OF
THE INTER-DISCIPLINARY COURSE
OF

GEOLOGY

(UNDER NEP – 2020)

(Implemented w.e.f Academic Session 2023-24)

UNIVERSITY OF LADAKH

Detailed Syllabus of **Geology** for B.Sc. **Semester – I** Under NEP – 2020

Course Title: *Geohazard and management*

Course Code: EES -GL-101-G

Credits: 03 (3 Theory)

Max. Marks: 75

Course Objectives: The frequency of extreme events in form of hazard and pollution resulting in widespread loss of lives and assets has been observed to be increasing globally. Collaborative efforts involving everyone are needed at all levels for making Disaster Risk Reduction (DRR) initiatives effective. In this direction/ the introduction of this course as a discipline at this stage is an academic initiative expected to be very productive for the process of education, training, mass awareness, and skill enhancement.

UNIT 1

- 1.1 Introduction to Natural Hazards and Disasters
- 1.2 Disaster and its Types, natural and anthropogenic
- 1.3 Floods its types factors and causes, Draughts causes and consequences, Cyclones
- 1.4 Natural/Geographical Disasters: Earthquakes and Landslides

UNIT 2

- 2.1 Avalanches, Volcanic Eruptions
- 2.2 Climatic Disaster: Heat and Cold Wave, Climate Change, Global Warming
- 2.3 Sea Level Rise and Ozone Depletion
- 2.4 Man-made disasters introduction: Nuclear Disaster, Chemical Disaster and Biological Disaster

UNIT 3

- 3.1 Building Fire, Precautions Required for Each Class of Fire, Coal Fire and Oil Fire
- 3.2 Introduction to Pollution: Water Pollution and Industrial Pollution
- 3.3 Noise Pollution Thermal Pollution and Marine Pollution
- 3.4 Soil Pollution, Nuclear Hazards and Impact of Industrial Waste on the Environment

UNIT 4

- 4.1 Disaster response and recovery: Institutional Arrangements for Disaster Response,
- 4.2 Models of Risk Assessment and Disaster Response, Disaster Response in India
- 4.3 Rehabilitation, Reconstruction and Recovery, Monitoring and Evaluation of Rehabilitation Work,
- 4.4 Managing Relief Camps, Disaster Management in India

Ramchandry
14/8/2023

References

1. Disaster management printed and published by: vikas || publishing house pvt ltd
2. Physical Geology: Exploring the Earth. Sixth Edition. Monroe, J. S., Wicander, R., and Hazlett, R. (2007).
3. A. Introduction to Physical Geology John Wiley & Sons, Inc..• Alan H. Strahler
4. Natural Hazards and Disasters. Third Edition Cengage Learning, 2016 Donald Hyndman, David Hyndman
5. Introduction to Environmental Geology. Printice Hall Keller, E. D. (2012).

UNIVERSITY OF LADAKH

Detailed Syllabus of **Geology** for B.Sc. **Semester – II**

under NEP – 2020

Course Title: Earth Surface processes

Course Code: EES -GL-201-G

Credits: 03 (3 Theory)

Max. Marks: 75

Course Objectives:

To introduce the fundamental concepts governing the landforms. Acquaintance with the concepts of various geomorphological processes and landform evolution.

THEORY (3 credits – 45 Teaching Hours)

- 1.1 Geomorphology as a discipline: its nature approaches and branches.
- 1.2 Models of landscape development: Davis's cycle, Penck's Model, Hack's Model.
- 1.3 Exogenous and endogenous processes.
- 1.4 Weathering and its agents; Types of weathering. Factors affecting weathering
- 1.5 Products of weathering: regolith and soil, Soil profile and horizons; factors affecting soil formation

UNIT-2

- 2.1. Mass wasting; its types and causes; factors responsible for mass wasting.
- 2.2 Drainage system and its types; types of drainage pattern. River profile and development stages of a river
- 2.3 Fluvial erosion: its types, processes and erosional landforms.
- 2.4 Depositional landforms produced by fluvial processes.
- 2.5 Glaciers: types and morphology. Glacial erosion: processes and associated landforms' Depositional landforms produced by glaciers.

UNIT-3

- 3.1 Wind as a transporting agent and processes of wind erosion. Erosional and depositional landforms produced by wind.
- 3.2 Karst topography: erosional and depositional landforms produced by groundwater.
- 3.3 Coastal landforms: erosional and depositional features.
- 3.4 Landforms associated with igneous activities, folding and faulting.
- 3.5 Geomorphic provinces of the Indian Subcontinent.

Suggested Readings:

1. Robert S. Anderson and Suzzane P. Anderson (2010): Geomorphology - The Mechanics and Chemistry of Landscapes. Cambridge University Press.
2. M.A. Summerfield (1991) Global Geomorphology. Wiley & Sons.
3. Savindra Singh: Geomorphology

Rambhadrach
14/5/2023