

Department of Applied Geology, IIT (ISM) Dhanbad
Monsoon Semester 2022-23; Lecture Plan
1st Semester B. Tech Common

Date: 31.10.2022

Course Type	Course Code	Name of Course	L	T	P	Credit
IC	GLI101	Earth Sciences Modular	2	0	0	3

Course Objective
The primary objective of the course is to introduce fundamental aspects of Earth Science to the students of engineering and technology.
Learning Outcomes
Upon completion of the course, students will be able to: <ol style="list-style-type: none"> 1. Understand the importance of Earth as a system 2. Learn about the formation and evolution of Earth 3. Learn about the dynamics of the planet Earth and the causes for volcanism, earthquake and tsunami

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	Solar System, Age of the Earth, Origin of Solar system. Meteors and Meteorites, Mineral, Rocks and Rock Types, Rock cycle, Rock Structures, Origin of life	6 (UB)	This unit will help the student in understanding the Earth System which includes the Solar System and the cosmos, minerals, rocks, and different structures evolved through tectonic processes.
2	Interior of the Earth, Composition of the Earth, Seismic waves, Plate Tectonics, Landslides, Volcanoes, Earthquakes, Tsunami and its causes, Warning system and mitigation	7 (JRD and SS)	It will introduce the student to fundamental concepts of Earth Processes.
3	Hydrologic cycle; Water table, Groundwater fluctuations, Aquifer, and groundwater composition, Glaciation and Glacier Types		This will help in understanding the basic concepts of water resources and quality as well as glaciers.

Text Books:

1. Hefferan, K. and O'Brien, J., 2010. Earth Materials, Wiley-Blackwell, Sussex; 670 p.

Reference Books:

1. Jain, S., 2014. Fundamentals of Physical Geology, Springer, New Delhi; 494 p.

2. Earle, S., 2015. Physical Geology, Creative Commons Attribution 4.0; 621 p.

3. Kenneth, W. and Christiansen, E.H., 2004. Earth's Dynamic Systems, Prentice Hall; 759 p.

5. Mahapatra, G. B. 2003. A text book of Geology. CBS Publishers and distributors.