COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-1): Essentials of Geology (L3, T1)

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course
		Lecture	Tutorial	Practical/ Practice		
GE-1 Essentials of Geology (L3, T1)	4	3	1	0	12th Pass	Nil

Learning Objectives

This course on essentials of geology is to provide students about the Interactive and interdisciplinary nature of geology and its overall significance in the academic world. This to introduce students about the Interplanetary scope of geology and linkage and feedback amongst the atmosphere, hydrosphere, biosphere, and lithosphere.

Learning outcomes

After successful completion of this course, students will develop basic but critical skills to understand the Earth, its origin and concept of geological time, formation of planets and solar system, composition of inner as well as surficial components of planet earth, major geomorphic features, and compositions of various parts of earth and major earth processes, and the Earth Resources.

SYLLABUS OF GE-1
Credits 4
Theory 45 hours

Unit 1: **(9 hours)**

Detailed content

Introduction to geology, scope, sub-disciplines and relationship with other branches of sciences Solar system and its origin: Terrestrial and Jovian planets; Nebular hypothesis.

Unit 2: **(9 hours)**

Detailed content

Earth's size, shape, mass, density, rotational and evolutional parameters Earth in comparison to other bodies in the solar system.

Unit 3: **(9 hours)**

Detailed content

Internal constitution of the earth - core, mantle and crust (Chemical and mechanical differentiation) Convections in the earth's core and production of magnetic field; Concept of Plate Tectonics as a unifying theory.

Unit 4: **(9 hours)**

Detailed content

Origin and composition of hydrosphere and atmosphere; Origin of biosphere; Origin of oceans, continents and mountains.

Unit 5: **(9 hours)**

Detailed Content

Geological Time Scale Radioactivity dating and its application in determining the age of the rocks. Earth Resources and their sustainable use.

Tutorials (30 hours)

Student in small batches or groups will be given assignments based on basic geological concepts in terms of interdisciplinary nature of geoscience, interplanetary aspects of Earth, origin and evolution of Earth and resolve the key issues under guidance.

Essential readings

Holmes, A. (1992). Principles of Physical Geology, 1992, Chapman and Hall.
Emiliani, C. (1992). Planet Earth, Cosmology, Geology and the Evolution of Life and Environment, Cambridge University Press.

Suggestive readings

Holmes, A. (1992). Principles of Physical Geology, 1992, Chapman and Hall.
Emiliani, C. (1992). Planet Earth, Cosmology, Geology and the Evolution of Life and Annexure-IV Page 25 of 25 Environment, Cambridge University Press.
Gross, M.G. (1977). Oceanography: A view of the Earth, Prentice Hall.
Grotzinger, J.P. & Jordan, T.H. (2020) Understanding Earth. 8th Edition, W.H. Freeman and Company