

Semester : First		Course : Core		Course Code : C-1					
Title : Introduction to Earth Science									
Credit	Theory (4 Credit) Marks				Practical (2 Credit) Marks				Total Marks
	End Semester Exam	Internal Assessment	Exam Duration in Hours	Total	End Semester Exam	Internal Assessment	Exam Duration in Hours	Total	
6	50	20	2½	70	20	10	3	30	100

Objectives: This paper enables learners to explore, understand, communicate and teach the earth as a planet, its complex processes, past and future evolution and interaction with society. In short language, it provides integrated understanding of the earth system. It also deals with complex interaction among lithosphere, biosphere and atmosphere.

THEORY

Units	Topics	Class	Marks
Unit 1: Universe and Solar System	Formation and evolution of the Universe, Galaxies and Solar System Structure of Solar System and Formation of Planetary Systems General ideas about - Milky Way, Nebula, Sun, Planets - Terrestrial and Jovian planets, natural satellites, meteorites and asteroids	12	10
Unit 2: Earth System	Planet Earth, moon, planetary properties, orbital and rotational characteristics, physical characteristics. Earth's gravity, atmosphere, hydrosphere, lithosphere, biosphere and magnetic field Brief geological history and age of earth. Interior of the Earth: core, mantle and crust.	12	10
Unit 3: Introduction to Geology	Various branches of geology and relation to other branches of science Minerals and rocks: concept of native elements, mineraloids, rock forming minerals. Brief introduction to rocks: igneous, metamorphic and sedimentary rocks. Gradational processes: weathering & erosion. Brief idea about geomorphic environments – fluvial, glacial, aeolian and coastal. Karst topography Physiographic divisions of Indian subcontinent. Concept of plate tectonics, origin of ocean basins and ocean water, continents, mountains and rift valleys. Earthquake and earthquake belts. Volcanoes- types, products and their distribution. Atmospheric and hydrological processes: difference between sea waves and oceanic current system, Coriolis Effect, Global Conveyer Belt and role of salt in current formation, concepts of eustasy, land-air-sea interactions, wave erosional activities. Atmospheric circulation, wind, weather and climatic changes, earth's heat budget. Stratigraphy and historical geology (understanding the past from stratigraphic records, nature of stratigraphic records, standard stratigraphic time scale and relationship between time and geology, introduction to geochronological methods and their application in geological studies, history of development in concepts of uniformitarianism, laws of superposition and faunal succession). Introduction to the geology of India.	40	30

PRACTICALS (C-1 Lab)

Sl.	Exercise	Class	Marks
1	Study of major geomorphic features from physiographical models	8	4
2	Exercises on topographical map reading	8	4
3	Study of earthquake and volcanic belts of the world	8	4
4	Study of major ocean currents of the World	8	4
5	Note Book		2
6	Viva Voce		2