

21GGE503T - EARTH ENDOGENIC AND SURFACE PROCESSES										
Teaching Scheme					Examination Scheme					
L	T	P	C	Hours/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
2	0	0	2	2	25	50	25	-	-	100

Unit I

Hours: 12

Earth: origin, internal structure and constitution; introduction to earth's lithosphere, atmosphere, hydrosphere, and biosphere and their interaction; Plate tectonics: tectonic elements of continents and oceans, types of plate margins and tectonic process.

Unit II

Hours: 8

Crustal divisions, composition and processes with short-term and long-term landscape development. Mantle and core dynamics for short- and long-term endogenic processes

Unit III

Hours: 12

Climate, Tectonics, and Surface Processes, Human-Landscape Dynamics, soil erosion, climate change, Transport laws that govern the evolution of earth's surface, Co-evolution of ecosystem and landscapes, Controlling factor for landscape change, Contribution of the knowledge towards a sustainable Earth's surface

Unit IV

Hours: 8

Grand Challenges in Earth Surface Processes: Earth's past and future on local and global scale- based on surface processes, landscape, climate and tectonics. Monitoring Earth surface processes at high resolution in space and time with new technologies: *Digital Topography*, *Geochronology*, The Cosmogenic Radionuclide Revolution, study consideration and report structure

MAX <40 Hrs>

TEXT / REFERENCE BOOKS

1. Emiliani C.: Planet Earth: Cosmology, Geology, and the Evolution of Life and Environment
2. Landscapes on the Edge: New Horizons for Research on Earth's Surface (2010), National Research Council 2010. Landscapes on the Edge: New Horizons for Research on Earth's Surface. Washington, DC: The National Academies Press. <https://doi.org/10.17226/12700>