

Course Code and Title : PGEVS1C003T Fundamentals of Earth Science
 Credit Hours : 04
 Total Number of Lectures : 60
 Course Teachers : Dr. Pankaj Mehta

Teaching Plan:

Topic	No. of Lectures	Teacher
UNIT-I: INTRODUCTION TO ORIGIN OF EARTH		
Introduction to various branches of Earth Sciences	2	Dr. Pankaj Mehta
General characteristics and origin of the Universe, Solar System and its planets	4	Dr. Pankaj Mehta
Primary differentiations of the earth and the formation of crust, mantle and core	4	Dr. Pankaj Mehta
Geodynamic elements of Earth: Mid Oceanic Ridges, trenches, transform faults and island arcs	4	Dr. Pankaj Mehta
UNIT-II: GEO-INVESTIGATION AND PETROLOGY		
Earthquake and Distribution of earthquake belts	3	Dr. Pankaj Mehta
Volcanoes: Cause, types products and distribution	3	Dr. Pankaj Mehta
Introduction to geophysical methods of earth investigations	3	Dr. Pankaj Mehta
Plate tectonics, Mountain building, Formation of igneous, sedimentary and metamorphic rocks	5	Dr. Pankaj Mehta
UNIT-III: GEOMORPHOLOGY		
Basic concepts of geomorphology	2	Dr. Pankaj Mehta
Introduction to global geomorphology and overview of Indian geomorphology	3	Dr. Pankaj Mehta
Minerals: definition and classification, physical and chemical composition of common rock forming minerals.	4	Dr. Pankaj Mehta
UNIT-IV: ENGINEERING GEOLOGY		

Geology vs. Engineering	2	Dr. Pankaj Mehta
Environmental considerations related to civil engineering projects	3	Dr. Pankaj Mehta
Construction materials	2	Dr. Pankaj Mehta
Geological hazards (landslides and earthquakes) their significance, causes and preventive/remedial measures.	4	Dr. Pankaj Mehta
Unit-V: HYDROGEOLOGY		
Scope of hydrogeology and its societal relevance	3	Dr. Pankaj Mehta
Geological formations as aquifers, types of aquifers, geological classification of aquifers, springs	3	Dr. Pankaj Mehta
Groundwater occurrence in igneous, metamorphic and sedimentary rocks	2	Dr. Pankaj Mehta
Darcy's law and its validity.	2	Dr. Pankaj Mehta
Groundwater provinces of India	2	Dr. Pankaj Mehta

REFERENCE BOOKS:

1. Singh, S. 1998. Geomorphology. Prayag PustakBhavan, Allahabad.
2. Todd, D.K. Groundwater hydrology, 2nd Ed., John Wiley & Sons, N.Y.
3. Emiliani, C, 1992. Planet Earth, Cosmology, Geology and the Evolution of Life and Environment. Cambridge University Press.
4. Press and Siever, The Earth; W.H. Freeman