

## Core VIII

## Semester IV

# Stratigraphy

### Course Objectives

- Introduce the principles of stratigraphy and geological time scale
- Exposure on Stratigraphic Nomenclature and Indian stratigraphic systems and their significance
- Describe the use of fossils for paleoecology, paleobiogeography, paleoclimate and paleoenvironmental study

### Learning Outcome:

After completion of this course successfully, the students will be able to

- Explain the principles of advanced stratigraphy and details of geological time scale
- Assess Indian stratigraphic systems and their significance
- Discuss on the use of fossils for paleoecology, paleobiogeography, paleoclimate and paleoenvironmental study

### Unit - I: Introduction

Definition and scope of Stratigraphy, Principles of Stratigraphy, Geological Time Scale. Stratigraphic Contacts and types (conformable contacts, unconformities)., Stratigraphic correlation and types, Classification and nomenclature of units, Indian code of Stratigraphic Nomenclature, Elements of Paleogeography

### Unit - II: Precambrian Stratigraphy of India

Precambrian stratigraphy of Karnataka, Odisha, Jharkhand, Rajasthan, Madhya Pradesh and Maharashtra. Stratigraphy of Cuddapah and Vindhyan basins, Delhi supergroup

### Unit – III: Paleozoic, and Mesozoic Stratigraphy of India

Gondwana rocks with special emphasis on fossils, climate and economic importance. Triassic of Spiti, Jurassic of Kutch and Cretaceous of Trichinopoly.

### Unit - IV: Cenozoic Stratigraphy of India

Deccan traps, , Tertiary of Assam, Siwalik (with special reference to mammal fossils).

### Practical:

- Drawing of stratigraphic units in outline map of India and Odisha;
- Identification and interpretation of stratigraphic assemblages;
- Drawing of paleogeographic maps as mentioned in theory

### Textbook:

- ✓ *Ramakrishnan & Vaidyanadhan (2008) Geology of India, Volumes 1 & 2, Geological society of India, Bangalore.*
- ✓ *Boggs, S., 1995. Principles of Sedimentology and Stratigraphy, Prentice Hall, New Jersey.*

### Suggested readings:

- ✓ *Krishnan, M.S. (1982) Geology of India and Burma, CBS Publishers, Delhi*
- ✓ *Doyle, P. & Bennett, M. R. (1996) Unlocking the Stratigraphic Record. John Wiley*
- ✓ *Valdiya, K. S. (2010) The making of India, Macmillan India Pvt. Ltd.*