

MDC-168: PHYSICAL GEOLOGY & GEODYNAMICS

(Contact Hour-45, Credit-3)

Course Objectives (COs): To familiarise students about the internal structure of the earth, endogenetic processes, deformation in the rocks. To understand the various principles of Stratigraphy and its correlation.

Learning Outcomes (LOs): The students will be able to understand the process of earthquakes, interpret the structural features of deformed rocks, and stratigraphic units.

UNIT I (15 hours) Primary differentiation; Internal structure of the Earth. Earthquakes: Seismic waves and causes. Plate Tectonics: Types of Plate, Plate boundaries and Plate movement.

UNIT II (15 hours) Rock deformation. Stress: Concept and types. Strain: Concept and types. Preliminary concepts of Linear and Planar Structures: Bedding plane, Fold, Joints, & Faults.

UNIT III (15 hours) Principles of Stratigraphy. Stratigraphic correlation. Tertiary rocks of Upper Assam and Lithostratigraphy of Meghalaya.

Suggested Readings:

- Billings, M. P., 1987. Structural Geology, 4th edition, Prentice-Hall.
Datta A. K., An introduction to Physical Geology –Dastane Ram Chandra and Co. Pune.
Holmes A., 1993. Principle of Physical Geology 4th Ed., Chapman and Hall, London.
Park, R. G., 2004. Foundations of Structural Geology. Chapman & Hall.
Verma, V. K. 2002. Lectures on Geomorphology, Pilgrims Book House.