

DEPARTMENT OF GEOLOGY

(In accordance with IQAC)

Organizes

A Certificate Course

On

"GEOLOGY FOR EVERYONE"

(30/09/2019 - 01/10/2019)

&

(01/11/2019 - 08/11/2019)

"Every day we are bombarded with information about what is happening on the surface of the Earth. But about the Earth itself, we know very little, other than to report about an earthquake or to try to find out more about a mineral resource. We could almost forget that the Earth is a rocky planet subject to very specific natural laws and that it has shaped our history. Those who know it best are the geologists who survey and examine it."

Course objective:

This course is an introduction to Geology topics through the history of planet Earth. It is aimed at giving the student knowledge of 'why and how we know what we know in Earth Science'.

Course outcome:

- ✓ Learn about the history and workings of planet Earth.
- ✓ Learn about global phenomena, rocks, crystals, plate tectonics, geologic time, and how rocks form.
- ✓ Learn how geology influences everything from the shape of the landscape to natural events (often called disasters.)

Course duration:

From 30/09/2019 to 01/10/2019 and 01/11/2019 to 08/11/2019; total ten days (30 hours).

Participants:

Interested under graduate students of all the disciplines are invited to join. This course is intended for the beginners, intermediate students as well as common people.

Patron:

Sri Aloke Kumar Das (Officer-in-Charge); Dr. Aresh Kumar Maji (IQAC Coordinator)

Resource person:

Dr. Aresh Kumar Maji (Course coordinator)

Course fee: Nil

Assessment process: Written Examination, Viva voce, Attendance

COURSE SCHEDULE

Date	Unit No.	Title	Duration (Hours) & Time
30/09/2019	1	Introduction to Geology	3hrs (11.00AM-2.00PM)
01/10/2019	2	Earth's materials, minerals and rocks	4hrs (11.00AM-1.00PM & 1.30PM-3.30PM)
01/11/2019	3	Structures found in Igneous, Sedimentary and Metamorphic rocks	4hrs (11.00AM-1.00PM & 1.30PM-3.30PM)
02/11/2019	4	Basic idea of Earth's internal processes	4hrs (11.00AM-1.00PM & 1.30PM-3.30PM)
03/11/2019	5	Study of rock strata	4hrs (11.00AM-1.00PM & 1.30PM-3.30PM)
04/11/2019	6	Evolution of life and fossil record	4hrs (11.00AM-1.00PM & 1.30PM-3.30PM)
05/11/2019	7	Earth and its resources	4hrs (11.00AM-1.00PM & 1.30PM-3.30PM)
06/11/2019	Written Examination		2hrs (11.00AM-1.00PM)
07/11/2019	Viva voce		1hrs (11.00AM-12.00 Noon)
08/11/2019	Distribution of participation certificate		11.00AM onwards
		Total	30 hours

COURSE CONTENT

Unit No. 1: Introduction to Earth System Science

Definitions, Scope and brief history of the subject of Geology

Unit No. 2: Earth's materials, minerals and rocks

Broad chemical groups of minerals; classification of rocks: igneous rocks, sedimentary rocks and metamorphic rocks- major types, their megascopic and microscopic characters (mineral assemblage and texture)

Unit No. 3: Structures found in Igneous, Sedimentary and Metamorphic rocks

Attitudes of planes and lines; extrusive and intrusive igneous rock bodies, lava flows, sills, dykes, batholiths; Bed, stratification, cross beds, ripple marks, graded beds, repetitive beds; folds, joints, foliation, lineation, fault, unconformity.

Unit No. 4: Basic idea of Earth's internal processes

Magmatism and metamorphism; layered structure of earth (evidence from seismic waves); concepts of continental drift, sea-floor spreading and plate tectonics; relative motion of plates, plate map of the earth; relation of volcanism and earthquake with plate tectonics; major tectonic units and their geological character: mid-oceanic ridges, subduction zones, trenches, island arcs, hot spots; idea of Wilson cycle

Unit No. 5: Study of rock strata

Study of natural stratification involving assessment of time and space; stratigraphic principles, their applications and limitations; basic idea on litho, bio and chronostratigraphy; stratigraphic correlation; Walther's law; brief description of important stratigraphic sequences of India

Unit No. 6: Evolution of life and fossil record

Origin of life; story of evolution spanning over 3 billion years; fossils as evidence of past life; modes of preservation of fossils; uses of fossils in understanding evolution of life in geological time.

Unit No. 7: Earth and its resources

Definition of economic mineral; ore, protore, gangue; distribution of major metal deposits of India; brief description of major fossil fuel deposits of India; brief idea on nuclear fuel.

Suggested Reading:

1. Mukherjee, P.K., 2010. A Textbook of Geology. World Press.
2. Mahapatra, G. B., 2019. A Textbook of Geology.