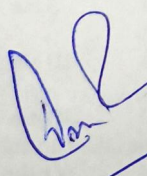


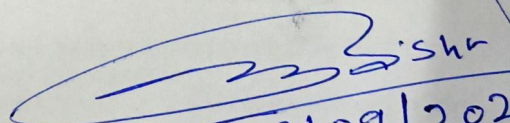
B. Sc. Geology**NEP Program****First Year**

Course Category	Semester-I				Semester-II			
	Subject/Title	No. of Paper	Credits		Subject/Title	No. of Paper	Credits	
			T	P			T	P
Discipline Specific Core	DSC Subject -I Physical & Structural Geology	1	2	2	DSC Subject -I Crystallography & Mineralogy	1	2	2
	DSC Subject-II	1	2	2	DSC Subject-II	1	2	2
MD/ID Subject-I	MD-I/ID-I Elementary Knowledge of Earth PART I	1	2	2	MD/ID-II Elementary Knowledge of Earth PART II	1	2	2
MD/ID* Subject-II		1	2	2	MD/ID-II		2	2
SEC	Field work/SEC/ Communication Skills Or AMSC/Field Work/SEC	1	2	-	AMSC/Field Work/SEC Or Field work/SEC/ Communication Skills	1	2	-
VAC	Understanding and Connecting with the Environment OR Life Skills & personality development	1	2	-	Understanding and Connecting with the Environment OR Life Skills & personality development	1	2	
Total		5	12	8		5	12	8

*-This course will be offered by Department for whole University as "Disaster Management"

Co-ordinator- Prof. MPS Bisht: HOD


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18/09/2025
Head
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FIRST SEMESTER – ONE (Ist)

DSC-Subject-I

PHYSICAL AND STRUCTURAL GEOLOGY

THEORY

(02 CREDITS) (70 + 30)

- Unit I:** Introduction to geology and its scope, Origin, shape, size, mass density, and its atmosphere; a brief account of various theories regarding the origin and age of the earth, brief ideas of the interior of the earth and its composition
- Unit II:** Physical and Natural Agents of Weathering and Erosion, factors, types, and their effects. Earthquakes: nature of seismic waves and their intensity, causes of earthquakes; Volcanoes: types, products, causes, and distribution.
- Unit III:** Introduction to Structural Geology; contours, topographic and geological maps, Elementary idea of dip and strike, true and apparent dip, outcrops, and effects of different structures on outcrop
- Unit IV:** Folds, Faults, and Joints and Unconformities: Nomenclature and Their Classification. Fault: terminology and classification

PRACTICAL

(02 CREDITS) (70 + 30)

Physical Geology: Study of topographic maps, identification of geomorphic features/models
(20 Marks)

Structural geology: Learning use of Clinometers/Brunton compass, Exercises on structural problems, preparation of cross-sectional profiles
(20 Marks)

Practical records:
(15 Marks)

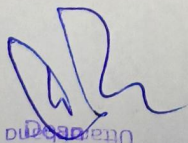
Viva – voice:
(15 Marks)

MD/ID Subject I

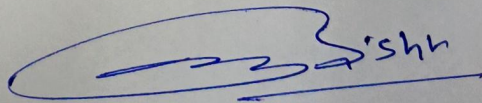
ELEMENTARY KNOWLEDGE OF EARTH SCIENCES PART I

(02 CREDITS) (70+30)

- Unit I:** Introduction to Geology and its scope, Earth and Solar System, Big Bang Theory
- Unit II:** Brief idea of interior of the earth and its composition
Elementary ideas of Weathering and Erosion Earthquake and volcano their causes and distribution.
- Unit III:** Contours, topographic maps, elementary idea of dip and strikes, outcrops. Brief idea of folds, and their geometrical classification.
- Unit IV:** Elementary idea of faulting and Brief account of joints and unconformities.



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PRACTICAL**(02 CREDITS) (70+30)**

Physical Geology: Study of topographic maps; Identification of geomorphic features; models
(25 Marks)

Structural Geology: Learning use of clinometers/Brunton compass, Preparation of cross-sections profiles.
(25 Marks)

Practical Records (10 Marks)

Viva – voice (10 Marks)

SEC COURSE**GEOLOGICAL FIELD TRAINING****Credits :02**

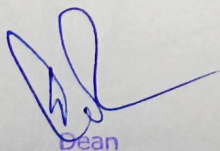
Students will be required to carry out Geological Field training in an important geological terrain to study the elementary aspects of field geology for one week and to submit a report thereon.

SEMESTER – SECOND (IInd)**DSC Subject-I CRYSTALLOGRAPHY AND MINERALOGY****THEORY****(02 CREDITS) (70 + 30)**

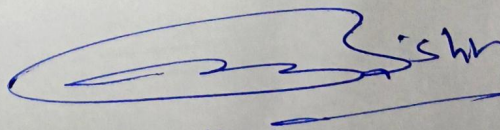
- Unit I:** Crystal: Definition and external morphology
Unit II: Interfacial angles and their measurements, Parameters in crystals, Weiss and Miller system of notations.
Unit III: Symmetry elements and forms of normal class of Isometric, Tetragonal, Hexagonal, Trigonal, Orthorhombic, Monoclinic and Triclinic systems
Unit IV: Introduction to Mineralogy, Definition and characters of mineral.
Unit V: Physical properties and chemical composition of minerals, diagnostic properties of the following minerals: Quartz, Orthoclase, Microcline, Hornblende, Garnet, Muscovite, Biotite, Chlorite, olivine and Calcite
Unit VI: Ordinary and polarized lights; Polarizing microscopes and its parts with functioning important optical properties observed under polarized and crossed Nicols.
Unit VII: Optical properties of following rock forming minerals: Quartz,, Orthoclase, Microcline, olivine, Garnet, Augite, Hypersthene, Hornblende, Biotite, Calcite and Zircon.

PRACTICAL**(02 CREDITS) (70 + 30)**

Crystallography: Study of symmetry elements of normal class of Isometric, Tetragonal, Hexagonal, Trigonal, Orthorhombic, Monoclinic and Triclinic systems
(25 Marks)



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Mineralogy: Study of physical properties of minerals mentioned in theory course, Use of polarizing microscope, Study of optical properties of common rock forming minerals mentioned in theory course

(25 Marks)

Practical records:

(10 Marks)

Viva – voice:

(10 Marks)

MD/ID Subject I ELEMENTARY KNOWLEDGE OF EARTH SCIENCES PART II

THEORY

(02 CREDITS) (70 + 30)

- Unit I:** Crystal form, face, edge, solid angle, Interfacial angle and their measurements
Unit II: Miller system of notations, Symmetry elements and description of normal class of Isometric, tetragonal, Hexagonal, Trigonal, Orthorhombic, Monoclinic and Triclinic systems.
Unit III: Introduction to Mineralogy and its importance, Common physical properties of minerals such as Quartz, Orthoclase, Hornblende, Garnet, Muscovite, Biotite, Olivine and Calcite.
Unit IV: Polarizing microscope, its parts and functioning, Optical properties of some common rock forming minerals: Quartz, Orthoclase, Olivine, Augite, Hypersthene, Hornblende, Biotite, Calcite.

PRACTICAL

(02 CREDITS) (70 + 30)

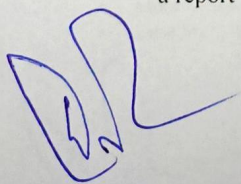
- Crystallography: Study of symmetry elements of normal class of Isometric, Tetragonal, Hexagonal, Trigonal, Orthorhombic, Monoclinic and Triclinic systems (25 Marks)
Mineralogy: Study of physical properties of minerals mentioned in theory course, Use of polarizing microscope, study of physical properties of minerals mentioned in theory course, Use of Polarizing Microscope (25 Marks)
Practical records: (10 Marks)
Viva – voice: (10 Mark)

SEC COURSE

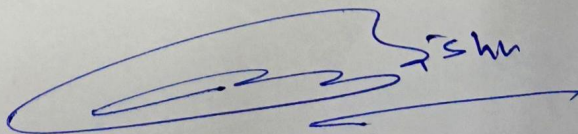
GEOLOGICAL FIELD TRAINING

Credits :02

Students will be required to carry out Geological Field training in an important geological terrain to study the elementary aspects of field geology for one week and to submit a report thereon.



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