

GEOLOGY DEPARTMENT

Pt. Neki Ram Sharma Govt. College Rohtak

Lesson Plan session 2023-24 Even Semester

Dr. Priyanka Shandilya

Class-B.Sc. 2nd Semester

January, 2024 to April, 2024

Week	Physical Geology (201)	Mineralogy (202)	Practical (203)
1 st (1 Jan-6 Jan)	Soil Formation and Soil Profile	Minerals and their classification	Separating Ore forming and rock forming minerals
2 nd (8 Jan-13 Jan)	Soil types and Geological work of River	Physical Properties of Minerals	Moh's Hardness Scale
3 rd (15 Jan-20 Jan)	Erosional and depositional features produced by river	Continued..... Physical Properties of Minerals	Demo for physical properties like streak, hardness, color and Lustre
4 th (22 Jan -27 Jan)	Types of erosion, transportation done by wind	Silicate structures classification with suitable examples	Demo for physical properties like cleavage, fracture and Specific Gravity
5 th (29 Jan-3 rd Feb)	Eolian landforms/ Erosional and depositional landforms produced by wind	Atomic minerals, Isomorphism, Pseudomorphism	Demo for physical properties like Diaphaneity, crystal form, odor, reaction with acid etc.

February, 2024

Week	Physical Geology (201)	Mineralogy (202)	Practical (203)
1 st (5 Feb-10 Feb)	Formation and Geological works of Lakes	Silica and Mica Group (physical properties, composition, classification)	Physical properties of Talc, Gypsum, Calcite in hand specimen
2 nd (12 Feb-17 Feb)	Important Indian lakes example and their importance	Pyroxene and Group (physical properties, composition, classification)	Physical properties of Fluorite, Apatite, Orthoclase in hand specimen
3 rd (19 Feb-24 Feb)	Revision of River wind and Lakes	Feldspar Group (physical properties, composition, classification)	Physical properties of Quartz, Pyroxene and Muscovite
4 th (26 Feb-2 March)	Types of Volcanoes and distribution	Amphibole Group (physical properties, composition, classification)	Revision of Physical properties of 9 minerals

March, 2024

Week	Physical Geology (201)	Mineralogy (202)	Practical (203)
1 st (4 - 9 March)	Geological work of Glaciers	Iron and Copper Group (physical properties, composition and occurrence)	Comparison between Pyroxene and Amphibole group minerals
2 nd (11-16 March)	Erosional and depositional features of Glaciers	Aluminium Group (physical properties, composition and occurrence)	Symmetry elements of Normal class of cubic crystal system
3 rd (18-23 March)	Indian mountain system and their origin and distribution	Manganese Group of minerals (physical properties, composition and occurrence)	Practice different symmetry elements of cubic normal class Galena type
4 th (25-31 March)	HOLI VACATIONS		

April, 2024

Week	Physical Geology (201)	Mineralogy (202)	Practical (203)
1 st (1-6 April)	Test and revision of 1 st Unit	Test and revision of 1 st Unit	Practice of Moh's Hardness scale
2 nd (8-13 April)	Test and revision of 2 nd & 4 th Unit	Test and revision of 2 nd & 3 rd Unit	Practice of Mineral identification
3 rd (15-20 April)	Test and revision of 3 rd Unit	Test and revision of 4 th Unit	Practice of Mineral identification
4 th (22-27 April)	External Practical Exams started		

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Lesson Plan session 2023-24 Even Semester

Dr. Priyanka Shandilya

Class-B.Sc. 4th Semester

January, 2024

Week	Petrology and Optical Mineralogy (401)	Palaeontology (402)	Practical (403)
1 st (1 Jan-6 Jan)	Sedimentary rock formation, composition and classification	Fossils and essential conditions of Fossilization	Study and identification of Obsidian and Pumice (Igneous rocks)
2 nd (8 Jan-13 Jan)	Textures and structures of Sedimentary rocks	Modes of preservation of fossils, Index fossils	Study and identification of Dolomite and Laterite (Sedimentary rocks)
3 rd (15 Jan-20 Jan)	Descriptive studies of important Sedimentary rocks	Standard GTS (Geological Time Scale)	Study and identification of Flexible sandstone and Limestone in hand specimen
4 th (22 Jan -27 Jan)	Metamorphism and factors affecting metamorphism	Economic and stratigraphic Significance of Fossils	Study and identification of Schist and Gneiss foliated Metamorphic rocks
5 th (29 Jan-3 Feb)	Metamorphic grades and Zones. Stress and antistress minerals	Morphological characters and Geological history of Foraminifera	Study and identification of Nepheline Gneiss and Augen Gneiss foliated Metamorphic rocks

February, 2024

Week	Petrology and Optical Mineralogy (401)	Palaeontology (402)	Practical (403)
1 st (5 Feb-10 Feb)	Types of Metamorphism and Metasomatism	Morphological characters and Geological history of Brahiopods	Morphological studies of Lower Gondwana fossils-Glossopteris
2 nd (12 Feb-17 Feb)	Classification of Metamorphic rocks	Stratigraphy of Gondwana super group and their characteristic fossils	Morphological studies of L. Gondwana fossils-like Gangmopteris
3 rd (19 Feb-24 Feb)	Textures and structures of Metamorphic rocks	Morphological characters, age and distribution of Plant fossils of Upper Gondwana	Morphological studies of U. Gondwana fossils-Ptilophyllum

4 th (26 Feb-2 March)	Descriptive studies of important Metamorphic rocks	Significance of microfossils in hydrocarbon exploration	Morphological studies of U. Gondwana fossils- Williamsonia and Nilsonia
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March, 2024

Week	Petrology and Optical Mineralogy (401)	Palaeontology (402)	Practical (403)
1 st (4 – 9 March)	Optical microscope: Parts and functioning	Revision of plant fossils	Brachiopods fossils Identification and studies
2 nd (11-16 March)	Optical properties of Minerals : In PPL i.e. color, Pleochroism, Refractive Index, Relief, Cleavage etc. (Theory)	Revision of brachiopods and foraminifera fossils	Foraminifera fossils identification and studies
3 rd (18-23 March)	Optical properties of Minerals : Under XPL i.e. Crossed nicol e.g. Extinction, bireferengence optic sign etc.	Morphology and Geological history of Corals. Types of coral formation.	Optical properties of Quartz, Garnet, Plagioclase
4 th (25-31 March)	HOLI VACATIONS		

April, 2024

Week	Physical Geology (401)	Mineralogy (402)	Practical (403)
1 st (1-6 April)	Test and revision of 2 nd Unit	Test and revision of 1 st Unit	Practice of Moh's Hardness scale
2 nd (8-13 April)	Test and revision of 1 st & 3 rd Unit	Test and revision of 4 th & 3 rd Unit	Practice of Mineral identification
3 rd (15-20 April)	Test and revision of 4 th Unit	Test and revision of 2 nd Unit	Practice of Mineral identification
4 th (22-27 April)	External Practical Exams started		

GEOLOGY DEPARTMENT

Pt. Neki Ram Sharma Govt. College Rohtak

Lesson Plan session 2023-24 Odd Semester

Dr. Priyanka Shandilya

Class-B.Sc. 1st Semester

21st July, 2023 to 24th November, 2023

July + August, 2023

Week	General Geology (101)	Crystallography (102)	Practical (103)
4 th Week (July)	Geology and its perspective	Crystals, crystal systems Elementary ideas about crystal structures	Introduction of Bearing and types of bearing
1 st Week (August)	Earth origin hypothesis	Crystal faces, edges, solid angle and Zones. Type of forms	Whole circle bearing and quadrant bearing
2 nd Week	Earth size shape mass density and its development. Earth relation to solar system	Interfacial angle and its measurement. Law of constancy of interfacial angles	Understanding of Dip, strike and attitudes of a bedding plane and geological structures
3 rd Week	Internal Constitution of the Earth	Normal Class of the cubic crystal system	Use of clinometer
4 th Week	Rock Weathering and its type	Parameter system of Weiss and Index system of miller	Use of Brunton Compass
5 th Week	Factors affecting weathering. Atmospheric circulation and its impact on weathering	Normal class of Tetragonal system	Explain formation of Unconformity with the help of Geomorphological model

September, 2023

Week	General Geology (101)	Crystallography (102)	Practical (103)
1 st Week	Elementary ideas of Continental Drift and Plate tectonics	Normal class of Monoclinic systems	Understanding of different symmetry elements of cubic system
2 nd Week	Formation of Hydrosphere, atmosphere and Biosphere	Normal class of Hexagonal system	Understanding of different forms of Normal class of cube with the help of wooden block
3 rd Week	Formation and types of Unconformity. Detection of Unconformity in the field	Normal class of Triclinic system	Understanding Normal class of hexagonal crystal system with the help of wooden blocks

4 th Week	Faults terminology and causes of faulting Classification of faults and recognition of faults	Twinning and types.	Interfacial angles understanding and measurements with the help of Goniometer and crystal
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October, 2023

Week	General Geology (101)	Crystallography (102)	Practical (103)
1 st Week	Parts of folds, classification of folds and causes of folding	Normal class of Orthorhombic system	Understanding Interior of Earth with the help of Geomorphological model
2 nd Week	Outcrops, dip ,strike, outlier, inlier and overlap (elementary idea)	Symmetry classes of cubic crystal system in details	Practice different symmetry elements of cubic normal class Galena type
3 rd Week	Test and revision of 2 nd Unit	Test and revision of 1 st Unit	Revision of usage of Brunton and Compass
4 th Week	Test and revision of 4 th Unit	Test and revision of 2 nd Unit	Revision of Interfacial angle measurement techniques

November, 2023

Week	General Geology (101)	Crystallography (102)	Practical (103)
1 st Week	Test and revision of 3 rd Unit	Test and revision of 3 rd Unit	Revision of interior of Earth, Unconformity with the help of model
2 nd Week	Test and revision of 1 st Unit	Test and revision of 4 th Unit	Practice different forms of Normal class of cube
3 rd Week	Diwali Vacations		
4 th Week	Revision and quizzes		

GEOLOGY DEPARTMENT

Pt. Neki Ram Sharma Govt. College Rohtak

Lesson Plan session 2023-24 Odd Semester

Class-B.Sc. 3rd Semester

Dr. Priyanka Shandilya

21st July, 2023 to 24th November, 2023

July + August, 2023

Week	Petrology and Optical Mineralogy (301)	Palaeontology (302)	Practical (303)
4 th Week (July)	Rock association in time and space. Concept of rock series	Definition and scope of paleontology. Applications of Palaeontology in paleoecology, evolution, stratigraphy and palaeogeographic reconstruction.	Study and identification of Granite and Basalt (Igneous rocks)
1 st Week (August)	Magma: Definition, origin, composition and crystallization	Standard GTS (Geological Time Scale) Era , Periods, Age and their major geological events.	Study and identification of Rhyolite and Dolerite (Igneous rocks)
2 nd Week	Crystallization of Unicomponent magma, Bowen reaction series	Introduction, morphological characters of a Trilobite shell. Geological History of Trilobite.	Study and identification of Gabbro and Pegmatite (Igneous rocks)
3 rd Week	Crystallization of Bi-component magma	Important fossils of Trilobite with their morphological characters, age and distribution.	Study and identification of Sandstone and Shale (Sedimentary Rocks)
4 th Week	Magmatic differentiation and assimilation	Echinodermata: Introduction, morphological characters and geological history of echinoids	Study and identification of Conglomerate and Breccia (Sedimentary rocks)

September, 2023

Week	Petrology and Optical Mineralogy (301)	Palaeontology (302)	Practical (303)
1 st Week	Formation of Igneous, Sedimentary and Metamorphic rocks and their differences	Morphological characters and geological history of Gastropods.	Study and identification of Slate and Phyllite (Metamorphic rocks)
2 nd Week	Igneous Petrology: Igneous rocks formation and their types	Important fossils, their morphological characters and age - Physa, Natica, Trochus	Study and identification of Quartzite and Marble (Metamorphic rocks)
3 rd Week	Igneous rocks composition and forms	Important fossils, their	Identification of Trilobites on the basis of

		morphological characters and age- Turritella, Certhium, Murex,	Morphological Characters
4 th Week	Chemical Mineralogical and tabular Classification of Igneous rocks	Important fossils, their morphological characters and age- Voluta, Cypraea.	Identification of Trilobites on the basis of Morphological Characters

October, 2023

Week	Petrology and Optical Mineralogy (301)	Palaeontology (302)	Practical (303)
1 st Week	Definition origin and important Igneous structures	Lamellibranchia : Morphological characters and geological history of Pelecypods. Dentition in lamellibranchia.	Identification of Gastropods on the basis of Morphological Characters
2 nd Week	Definition, origin and different types of Textures of Igneous rocks	Study of plant fossils of Lower Gondwana. Morphology and Geological history of Corals. Types of coral formation.	Identification of Gastropods on the basis of Morphological Characters
3 rd Week	Descriptive megascopic studies of Important Igneous rocks	Fossils of Pelecypoda : Pecten, Nucula, Arca, Gryphaea, Trigonina, Cardita, Unio	Morphological studies of Lower Gondwana fossils- Glossopteris
4 th Week	Test and revision of 1 st Unit	Test and revision of 1 st Unit	Morphological studies of L. Gondwana fossils-like Gangmopteris

November, 2023

Week	Petrology and Optical Mineralogy (301)	Palaeontology (302)	Practical (303)
1 st Week	Test and revision of 2 nd Unit	Test and revision of 3 rd Unit	Practice of Igneous rock Identification
2 nd Week	Test and revision of 3 rd Unit	Test and revision of 2 nd Unit	Practice of Sedimentary rocks identification
3 rd Week	Diwali Vacations		
4 th Week	Test and revision of 4 th Unit	Test and revision of 4 th Unit	Practice of Metamorphic rocks identification