

ShikshanPrasarakMandal's  
**Gopal Krishna Gokhale College, Kolhapur**  
**Course Outcomes**  
**Department of Geology**

<b>Class</b>	<b>Semester</b>	<b>Paper Name &amp; Number</b>	<b>Outcomes</b>
<b>B.Sc.I CBCS</b>	<b>Sem.-I</b>	<b>DSC-21A- Physical Geology paper I</b>	<ol style="list-style-type: none"> <li>1. The students will get introduced to the subject Geology and it's scope.</li> <li>2. They will get the introductory knowledge of the Solar system and the Earth.</li> <li>3. The students will understand the Concepts of origin of the Earth, different methods to determine the age of the Earth and interior of the Earth.</li> <li>4. The students will go through the weathering concept.</li> <li>5. They will get the knowledge of earthquakes, measurement of earthquakes, scale of earthquake and its causes.</li> <li>6. They will know the types, products and causes of volcano.</li> </ol>
		<b>DSC-22A- Structural Geology paper II</b>	<ol style="list-style-type: none"> <li>1. The students will know the basics of Structural Geology.</li> <li>2. The students can be able to differentiate and describe the topographic and Geological maps.</li> <li>3. They will know about the use of Brunton and Clinometer compass in the laboratory and in the field as well.</li> <li>4. The students will get knowledge of different structures like folds, faults, joints and unconformities and their types and significance.</li> </ol>
	<b>Sem.-II</b>	<b>DSC 21B: Crystallography Paper-III</b>	<ol style="list-style-type: none"> <li>1. The students will understand definition of a crystal and elements of a crystal.</li> <li>2. They will know the different aspects of crystallography, like interfacial angle, crystallographic axes and angles.</li> <li>3. The students will be able to determine the parameters and indices of the crystals according to their systems and classes and will study the classification of crystal systems and know the elements of symmetry.</li> <li>4. The students will identify all the aspects of crystals of normal class of all the systems.</li> <li>5. They will gain the knowledge of chemical bonding in minerals, definition of mineral, and characteristics of minerals related to all the crystal systems.</li> </ol>

		<b>DSC-22B- Mineralogy Paper IV</b>	<ol style="list-style-type: none"> <li>1. The students will be able to describe physical properties of major mineral groups.</li> <li>2. The students will get the knowledge to differentiate all the major mineral groups depending on their chemical composition, crystal system, and physical properties.</li> <li>3. They will get the knowledge to differentiate ordinary and polarized light.</li> <li>4. The student will get the knowledge of polarizing microscope and its parts and functioning.</li> <li>5. The student will get the knowledge of optical properties of minerals in plane polarized light and between crossed nicols and can differentiate the common rock forming minerals depending on optical properties.</li> </ol>
<b>B.Sc. II CBCS</b>	<b>Sem.-III</b>	<b>DSC- 21C – Igneous Petrology paper No. V</b>	<ol style="list-style-type: none"> <li>1. The students will get the knowledgw of magma, it's composition, types and origin.</li> <li>2. The students will be familiar with the knowledge of forms and textures of igneous rocks.</li> <li>3. They will know the different processes of magma differentiation and role of volatiles in it..</li> <li>4. The students will acquire the knowledge of processes of assimilation during the magmatism.</li> <li>5. They will be familiar to the classification of igneous rocks based on different aspects.</li> <li>6. The students will go through the processes of crystallization of unicomponent magma, bicomponent magma and ternary magma.</li> </ol>
		<b>DSC-22C- Sedimentary and Metamorphic Petrology paper No. VI</b>	<ol style="list-style-type: none"> <li>1. The students will get the knowledge of processes of formation of sedimentary rocks depending on different conditions.</li> <li>2. The students will understand the textures and structures of sedimentary rocks based on different aspects.</li> <li>3. They will go through the different depositional environments of sedimentation.</li> <li>4. They will get the basic information of metamorphism and agents of metamorphism.</li> <li>5. The students will get the basic knowledge of types of metamorphism.</li> <li>6. They will know the zones, grades and outline of facies of metamorphism..</li> </ol>

			7. They can differentiate the metamorphic rocks depending on their textures and structures.
	<b>Sem.-IV</b>	<b>DSC-21D- Stratigraphy paper No. VII</b>	<ol style="list-style-type: none"> <li>1. The students will understand basic principles of stratigraphy.</li> <li>2. They will study the Geological Time Scale and stratigraphic classification.</li> <li>3. The student will study the Physiographic divisions of India.</li> <li>4. Student will be capable to differentiate Precambrian successions of India, and will be able to describe the different Phanerozoic successions in Palaeozoic, Mesozoic and Cenozoic successions/formations.</li> <li>5. They will study the type localities like Gondwana flora and fauna and Deccan Volcanic Province.</li> </ol>
		<b>DSC- 22D - Palaeontology paper No. VIII</b>	<ol style="list-style-type: none"> <li>1. The students will get the knowledge about the Palaeontology and fossils, particularly binomial nomenclature in taxonomy, modes of preservation, conditions of fossilization and significance of fossils.</li> <li>2. They will acquire the knowledge of morphology, geological distribution and age of different invertebrate fossil Phylum.</li> <li>3. The students will get the knowledge of microfossils, particularly Foraminifera and its significance.</li> <li>4. They will go through the study of Vertebrate palaeontology and plant fossils as well.</li> </ol>
<b>B.Sc. III CBCS</b>	<b>Sem.-V</b>	<b>DSE-41E – Economic Geology Paper No. –IX</b>	<ol style="list-style-type: none"> <li>1. The students will get knowledge of concept of ore deposits, ore minerals, gangue minerals; tenor of ores; strategic, critical and essential minerals.</li> <li>2. They will get the knowledge of different processes of formation of ore deposits.</li> <li>3. The students will study all the metallic and non-metallic ore minerals.</li> <li>4. They will go through the formation and distribution of coal and petroleum in India.</li> </ol>
		<b>DSE-42E - Hydrogeology Paper No. X</b>	<ol style="list-style-type: none"> <li>1. The students will understand hydrogeology, hydrological cycle and hydrological parameters and water bearing properties of rocks as well.</li> <li>2. The students will get knowledge of origin and sources of groundwater and go through the vertical distribution of groundwater.</li> <li>3. They will get the knowledge of types of aquifers and different methods of groundwater exploration.</li> <li>4. They will go through the movement of groundwater through Darcy's law.</li> </ol>

			5. The students will know the groundwater provinces of India.
		<b>DSE- 43E- Applied Geology – Engineering Geology Paper No. XI</b>	<ol style="list-style-type: none"> <li>1. The students will study the building stones and engineering properties of rocks and soils.</li> <li>2. They will study soil and soil groups of India.</li> <li>3. They will study the geology of bridge sites and types of bridges.</li> <li>4. The students will get knowledge the dams, their types and their geological and environmental considerations.</li> <li>5. They will study the Geological problem of reservoirs; tunnels, their geology, structure, seepage problem and role of water table.</li> </ol>
		<b>DSE-44E- Applied Geology – Prospecting and Mining Geology paper No. XII</b>	<ol style="list-style-type: none"> <li>1. The students will able to understand the techniques of prospecting and elementary idea of geological and geophysical prospecting.</li> <li>2. They will get the knowledge of mineral exploration and sampling methods.</li> <li>3. They will go through the elementary ideas of mining.</li> <li>4. The students will get knowledge of open cast and underground mining methods</li> <li>5. They will know the environmental considerations for mining.</li> </ol>
	<b>Sem.-VI</b>	<b>DSE-41F- Photogeology and Remote Sensing Paper No. – XIII</b>	<ol style="list-style-type: none"> <li>1. The students will able to understand the elementary ideas about photogeology and factors affecting aerial photography and factors affecting scale.</li> <li>2. They will know the fundamentals of remote sensing; remote sensing systems and remote sensing sensors.</li> <li>3. They will know the importance of remote sensing in geology.</li> <li>4. Students will know about types of Indian foreign remote sensing satellites.</li> <li>5. They will be introduced to Digital image processing; will know about fundamental steps in image processing and will get the knowledge of elements of pattern recognition and image classification.</li> <li>6. They will be introduced to GIS, components of GIS and integration of GIS with remote sensing.</li> </ol>
		<b>DSE-42F- Geomorphology and</b>	<ol style="list-style-type: none"> <li>1. The students will get knowledge of basic concepts of geomorphology; slope.</li> <li>2. They will know geomorphological cyclic concept and different cyclic concepts given by different geomorphologists.</li> <li>3. Student will learn geological work of different natural agents.</li> </ol>

		<p><b>Geotectonics Paper No. XIV</b></p>	<ol style="list-style-type: none"> <li>4. The students will get knowledge of earth as a dynamic system, crustal movements and types of mountains.</li> <li>5. They will know the concepts of continental drift, sea-floor spreading and mid-oceanic ridges and paleomagnetism as well.</li> <li>6. They will get detailed knowledge of plate tectonics and tectonic framework of India.</li> </ol>
		<p><b>DSE-43F- Environmental Geology Paper No. XV</b></p>	<ol style="list-style-type: none"> <li>1. The students will get knowledge earth and its spheres; earth material, energy budget.</li> <li>2. They will know solar radiation; global environments and be introduced to concept of global warning and climate change.</li> <li>3. They will be introduced to all possible geological hazards, their mitigation and resource management for it.</li> <li>4. Students will go through energy resources; watershed management, landuse planning, management of water resources and land reclamation.</li> </ol>
		<p><b>DSE-44F- Geochemistry Paper No. XVI</b></p>	<ol style="list-style-type: none"> <li>1. Students will be introduced to geochemistry, they will get basic knowledge about crystal chemistry.</li> <li>2. Students will able to understand atom and atomic structure, types of chemical bonds, coordination number, colloids, ion exchange etc.</li> <li>3. Students will get the elementary idea of periodic table; cosmic abundance of elements, geochemical evolution of the earth and geochemical cycles.</li> <li>4. They will know the Gold Schmidt's geochemical classification of elements.</li> <li>5. Students will able to understand distribution of major, minor and trace elements in all rock types.</li> <li>6. They will be introduced to geochemical thermodynamics, and get the knowledge of isomorphism, polymorphism and isotope geochemistry.</li> </ol>