Yashwantrao Chavan College of Science, Karad Dep artment of Geology <u>Program Outcomes (PO) - B.Sc. Geology</u>

PO1	Graduates will demonstrate proficiency in conducting geological analyses, including the interpretation of geological maps, stratigraphic sequences, and geological structures.
PO2	Graduates will be able to apply appropriate field and laboratory techniques to collect, analyze, and interpret geological data accurately.
PO3	Graduates will be able to identify, assess, and address environmental challenges related to geological processes, such as groundwater contamination, natural hazards, and land use planning, while promoting responsible utilization of Earth's resources.
PO4	Graduates will develop critical thinking and problem-solving abilities necessary for addressing complex geological issues.

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	PSO's for B.Sc. Geology
	Upon successful completion of the course, students will be able to:
PSO1	Provide basic knowledge of the solar system and different spheres of the Earth.
PSO2	Identify and propose preventive measures for natural calamities like earthquakes, volcanoes, etc.
PSO3	Evaluate various structural and geomorphological features on the Earth.
PSO4	Apply mineralogical and petrological knowledge in lab and field operations.
PSO5	Understand the preservation process and evolutionary changes in species.
PSO6	Understand and recall the stratigraphic sequence of various geological provinces in India.
PSO7	Recommend groundwater resource development and management strategies.
PSO8	Evaluate, explore, exploit, and manage various natural resources.
PSO9	Provide technical assistance in GIS and geotechnical operations.
PSO10	Develop ability and geological skills through an appropriate blending of theoretical education, practical exercises, and field work.

Course Outcomes (CO) as per Blooms' Texonomy		
B. Sc I		
Course Name	Course Outcome (CO)	
	Upon successful completion of the course, students will be able to:	
Physical Geology	CO1. Describe the Earth and Solar system in details.	
	CO2. Illustrate the internal structure of the Earth and atmosphere.	
	CO3. Explain weathering processes with their agents and controlling factors.	



	CO4. Explain earthquakes and volcano
Structural Geology	CO1. Analyze the different geological structures.
	CO2. State the origin of folds, faults, joints and unconformities
	CO3. Interpret the topographic and geological maps.
	CO4. Use the clinometer and Brunton Compass.
Mineralogy	CO1. Define and identify mineral specimens.
	CO2. Explain the physical and optical properties of minerals.
	CO3. Assess the physical and optical properties of different mineral groups.
Crystallography	CO1. Understand the crystal and discuss different crystal elements.
	CO2. Describe and classify crystals into 7 systems and 32-point groups.
	CO3. Identify crystal system of minerals.

B. Sc. – II	
Course Name	Course Outcome (CO)
	Upon successful completion of the course, students will be able to:
Igneous Petrology	CO1. Understand magma generation and discuss its types.
Tenology	CO2. Describe the common forms, structures and textures of igneous rocks.
	CO3. Classify igneous rocks based on the different classification schemes.
	CO4. Explain magma differentiation and assimilation.
	CO5. Discuss phase diagrams in details.
Sedimentary and	CO1. Discuss the processes of formation of sedimentary rocks.
Petrology	CO2. Interpret the depositional environments of sedimentary rocks.
	CO3. Explain agents and types of metamorphism.



	CO4. Illustrate the common textures and structures of sedimentary and metamorphic rocks.
	CO5. Explain facies and grades of metamorphism
Stratigraphy	CO1. Discuss the principles of stratigraphy.
	CO2. Discuss and recall geological time scale
	CO3. Explain different stratigraphic provinces of India
	CO4. Describe Gondwana basin and Deccan Volcanic Province as type localities
Paleontology	CO1. Explain Basics and terminologies of paleontology.
	CO2. Identify and describe the modes and processes of fossil preservation.
	CO3. Identify and describe invertebrate, vertebrate, plant fossils and microfossils.
	CO4. Explain the evolutionary changes in Humans, Elephant and Horses.

B. Sc. – III	
Course Name	Course Outcome (CO)
	Upon successful completion of the course, students will be able to:
Economic Geology	CO1. Appraise ore minerals and related processes.
	CO2. Formulate mineralization processes at different levels.
	CO3. Evaluate occurrence and distribution of beach and placer deposits.
	CO4. Investigate occurrence of petroleum deposits of India.
	CO5. Examine the metallic and non-metallic mineral deposits.
Hydrogeology	CO1. Convince society for groundwater fluctuation throughout the year.
	CO2. Estimate the rate of groundwater flow and flow types.
	CO3. Evaluate different groundwater exploration methods.
	CO4. Recommend groundwater resource development and management strategies.
	CO1. Appraise requirement of good building stones as well as engineering properties of rock and soil.



Applied Geology- Engineering	CO2. Propose the suitability of site for construction of dams, reservoir, bridges, tunnel etc.
Geology	CO3. Formulate different environment aspects during construction of civil engineering project.
Applied Geology- Prospecting and	CO1. Propose different geophysical methods for subsurface investigations
Mining Geology	CO2. Investigate different ore deposits by Geobotanical prospecting.
	CO3. Justify mining concept with environmental consideration.
Photogeology and	CO1. Design photogrammetry and geometry of aerial photographs.
Remote Sensing	CO2. Select various acquisition techniques of aerial photographs.
	CO3. Rewrite the image characteristics of geological features in imageries.
	CO4. Produce the topographic and tectonic features in the satellite images.
	CO5. Develop various images with the help of GIS Software
Geomorphology	CO1. Formulate various concepts of geomorphology.
and Geotectonics	CO2. Illustrate different geomorphological features developed by different agents.
	CO3. Evaluate crustal movements and explain mountain building processes.
	CO4. Describe plate tectonics in details.
Environmental	CO1. Formulate the fundamental concepts of Environmental geology.
Geology	CO2. Investigate the different environmental resources.
	CO3. Evaluate effects of various energy resources on environment.
	CO4. Develop mitigation strategies for studied different geohazards.
Geochemistry	CO1. Estimate the major, minor and trace elements in the Earth
	CO2. Describe the concepts of geochemistry with respect to petrology.
	CO3. Appraise the knowledge of different radioactive and Radiogenic isotopes.
	CO4. Evaluate geochemistry of hydrosphere, biosphere and atmosphere.

Principal Yashwantrao Chavan College of Science, Karad

GEOLOGY

HEAD Department of Geology Yashwantrao Chavan College of Science, Karad