

**PROGRAMME OUTCOME, PROGRAMME  
SPECIFIC OUTCOME AND COURSE OUTCOME**

**FOR**

**B. SC. GEOLOGY (MAJOR)**

**FYUGP**

**PRAGJYOTISH COLLEGE**

# PROGRAMME OUTCOME

## Programme Name: Bachelor of Science (B.Sc.)

**PO1. Disciplinary Knowledge:** Demonstrate comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.

**PO2. Social Interaction:** Express thoughts and ideas effectively in writing and speaking; listen and communicate with others using appropriate media. Work effectively and respectfully with diverse teams; act together as a group or a team in the interests of a common cause; Elicit views of others, mediate disagreements and help reach conclusions in group settings.

**PO3. Effective Citizenship:** Demonstrate empathetic social concern and equity centered national development, and act with an informed awareness of issues and participate in civic life through volunteering; embrace moral/ ethical values in conducting one's life, possess knowledge of the values and beliefs of multiple cultures and a global perspective; engage in a multicultural society and interact respectfully with diverse groups.

**PO4. Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.

**PO5. Information and Digital Literacy:** Use ICT in a variety of learning situations; demonstrate ability to access, evaluate and use a variety of relevant information sources; and use appropriate software for analysis of data.

**PO6. Research-related skills:** Critically evaluate practices, policies and theories by following scientific approach to knowledge development. Have a sense of inquiry and capability for asking relevant/ appropriate questions, problematizing, synthesizing and articulating; ability to recognize cause- and- effect relationships, define problems, formulate hypotheses, interpret and draw conclusions from data, ability to plan, execute and report the results of an experiment or investigation; ability to apply one's learning to real life situations.

# PROGRAMME SPECIFIC OUTCOME

## B. SC. GEOLOGY (HONOURS)

**PSO1:** The Bachelor of Science in Geology programme of Pragjyotish College under Gauhati University includes graded semester system which combines detailed theoretical knowledge, practical knowledge and extensive field survey/field work. The primary goal of this undergraduate programme is to provide students' academic competencies, ethical values and professional skills that facilitate their transition from undergraduate to post graduate work or professional positions. This programme inspires geology graduates to be life-long learners in a diverse global community and prepare them to pursue a geology career through innovative and hands-on engagement in the classroom, laboratory and field.

**PSO2:** Students will acquire a solid base of knowledge in the science of geology as a whole as well as earth materials, earth history, mineralogy, petrology and stratigraphy, deformational processes and structural features, geomorphic processes and landforms.

**PSO3:** Students will learn about the process of formation, application, economic significance and resource locations of geologic resources. Students will cultivate expertise in articulating intricate geological concepts through clear, precise and technically accurate writing, integrating conceptual and observational knowledge to analyze and resolve complex geological data and problems. They will develop expertise in geologic concepts and effectively communicate their knowledge through oral presentations.

**PSO4:** Students will develop expertise in interpreting, analyzing and critiquing geological issues, including natural hazards such as earthquakes, tsunamis, landslides, volcanic eruptions, floods, erosion etc. by producing high quality written analyses of data, results, interpretations and conclusions in a scientific format.

**PSO5:** As geology is mainly a field work based subject so students are to be trained to carry out extensive field work and to do advanced geological and scientific analysis, there by imparting practical knowledge/ hands- on training in the geological field work for augmenting practical/ professional knowledge which has implication in near future. Students will greatly strengthen their observational accuracy in the field, and this skill will translate into other aspects of data description and interpretation and they will gain new field experience, perspective, competence, and confidence as a field geologist.

**PSO6:** Students will develop the capability to produce geologic maps and cross sections of unknown terrains working individually and/or in groups. Production of geologic maps will allow students to demonstrate the capacity for synthesizing and interpreting field data and compiling that information into an appropriate and concise field report.

# COURSE OUTCOME

**Subject: Geology**

**Semester: First Semester**

**Course name: Earth Systems Science (ESS)**

Course Outcome	Unit no. and Name	Bloom's Taxonomy Level
After completion of the course students will be able to: <ol style="list-style-type: none"> <li>1. Understand the interactions and dependencies of the elements of the earth system, the natural and anthropogenic forcing factors and contextualize how human interventions has been changing the balance of these elements.</li> <li>2. Establish the cause-and-effect relationship of earth surface processes and climate and, thereby understand the science behind natural disasters, contribute towards effective disaster management.</li> <li>3. Identify the landscape elements from spatial data-viz., topographic maps, satellite images and relate them with natural world</li> <li>4. Carry out simple statistical analysis including trend analysis of meteorological parameters.</li> </ol>	Unit 1: Understanding the earth as a system:	Remember, Understand
	Unit 2: The earth dynamics	Remember, Understand
	Unit 3: Atmosphere and hydrosphere:	Remember, Understand,
	Unit 4: Practical	Remember, Understand, Analysis

Mapping of CO to syllabus

	Unit 1	Unit 2	Unit 3	Unit 4
CO 1	H	M		
CO 2			H	

CO 3				H
CO 4				H

**Subject: Geology**

**Semester: Second Semester**

**Course name: Rocks and rock forming minerals**

Course Outcome	Unit no. and Name	Bloom's Taxonomy Level
After completion of the course students will be able to: <ol style="list-style-type: none"> <li>1. Identify common rock-forming minerals in hand specimens using diagnostic properties.</li> <li>2. Identify mineral constituents of rocks, their typical textural as well as structural features.</li> <li>3. Identify and classify rocks in the laboratories as well as in the field.</li> </ol>	Unit 1: Rocks: Definition of rock, major rock types.	Remember, Understand
	Unit 2: Igneous and Metamorphic rocks.	Remember, Understand, Analysis
	Unit 3: Sedimentary Rocks.	Remember, Understand, Analysis
	Unit 4: Practical	Remember, Understand, Analysis

	Unit 1	Unit 2	Unit 3	Unit 4
CO 1	H			
CO 2	H	H		
CO 3			M	H

**Subject: Geology**

**Semester: Third Semester**

**Course name: Mineralogy and Thermodynamics in Geological Systems**

Course Outcome	Unit no. and Name	Bloom's Taxonomy Level
After completion of the course students will be able to: 1. Gather comprehensive knowledge on the most vital attributes of the minerals including crystallographic aspects, compositions, optical properties and the thermodynamic principles that govern their formation and stability. 2. Identify and differentiate minerals which would inculcate a key skill in the students as a geologist.	Unit 1: Introduction	Remember, Understand
	Unit 2: Physical and Optical properties of minerals	Remember, Understand
	Unit 3: Laws of thermodynamics	Remember, Understand, Analysis
	Unit 4: Practical	Remember, Understand, Analysis

Mapping of CO to syllabus

	Unit 1	Unit 2	Unit 3	Unit 4
CO 1	H	M	H	
CO 2				H