Semester Lecture Plan

Name of the College: Government College of Arts Science & Commerce, Sanquelim Goa

Name of Faculty: Mr. Brahmanand Sawant | **Subject:** Geology

Paper code: GEO221 Engineering Geology | **Program/Course: S.Y. B.Sc.** | **Division:**

Academic year: 2025 - 2026 | **Semester: IV** | **Total Lectures: 45**

Course Objectives:

1) To describe the engineering properties of rocks
2) To get acquainted with various tests carried out on rock samples
3) To carry out geological investigations for selection of sites for engineering projects
4) To suggest remedial measures for the improvement of sites

Expected Course Outcome:

This Course will help the students:

1. To identify and select the appropriate sites for engineering projects
2. Will be able to suggest remedial measures for the improvement of site

Student Learning Outcome

1) Students will be able to suggest the suitability of sites for various engineering projects
2) They can determine the engineering properties of rocks performing various tests
3) They can prepare a report giving suggestions for the improvement of site if not suitable for construction

Month	Lectures From:	To:	No. of lectures	Topic, Subtopic to be covered	Exercise /Assignment	ICT Tools	Reference books
DEC				Introduction to Engineering Geology	Reading material shared	Power point presentation	1.Engineering & General Geology by Parbin Singh 2. Textbook of Engineering Geology by N Chenna Kesavulu
	1-12-2025	6-12-2025	3	Role of a geologist in geotechnical projects		Power point presentation	
	8-12-2025	13-12-2025	3	Engineering properties of rocks.	Reading material shared	Power point presentation	
January				Rock as material for construction,		Power point presentation	

	15-12-2025	20-12-2025	03	Rocks as site for construction.			
				Geological Investigations and methods of investigation (geophysical)	Reading material shared	Power point presentation	
	2-01-2026	10-01-2026	03	Gravity Dam		Power point presentation	
				Arch Dam		Power point presentation	
	12-01-2026	17-01-2026	03	Butress Dam	Reading material shared	Power point presentation	Engineering & General Geology by Parbin Singh
				Composite Dam		Power point presentation	
						Power point presentation	

							2. Textbook of Engineering Geology by N Chenna Kesavulu
Jan/Feb	19-01-2026	24-01-2026	3				1 Engineering & General Geology by Parbin Singh 2. Textbook of Engineering Geology by N Chenna Kesavulu
				Embankment Dam		Power Point Presentation	
				Forces acting on a Dam		Power Point Presentation	
	26-01-2026	31-01-2026		Parts of Dams	Reading material shared	Power Point Presentation	
				Induced Seismicity			
						Power Point Presentation	
March	2-02-2026	7-02-2026	03				1 Engineering & General Geology by Parbin Singh 2. Textbook of Engineering
				Suitability of Rocks	Literature review	Power Point Presentation	
				Suitability of igneous rocks		Power Point Presentation	
	9-02-2026	14-02-2026	03	Suitability of sedimentary rocks		Power Point Presentation	

				Suitability of metamorphic rocks	Literature review	Power Point Presentation	Geology by N Chenna Kesavulu
						Power Point Presentation	
	16-02-2026	21-02-2026	03	Effect of intrusion on stability of dam		Power Point Presentation	
				Effect of weathering on dams		Power Point Presentation	
	23-2-2026	28-02-2026	03	Effect of rock structures on stability of a dam		Power Point Presentation	Engineering & General Geology by Parbin Singh 2. Textbook of Engineering Geology by N Chenna Kesavulu
				Tunnels	Literature review	Power Point Presentation	
				Types of tunnels		Power Point Presentation	
	2-03-2026	7-03-2026	03	Hard ground tunneling		Power Point Presentation	
				Soft ground Tunneling		Power Point Presentation	
	9-03-2026	14-3-2026	03	Effect of structures on stability of tunnel		Power Point Presentation	Engineering & General Geology by Parbin Singh 2. Textbook of Engineering
				Roads and Highways	Literature review	Power Point Presentation	
				Effect of structures on Road stability		Power Point Presentation	

							Geology by N Chenna Kesavulu
March	16-3-2026	21-3-2026	03	Bridges		Power Point Presentation	
				Types of Bridges		Power Point Presentation	
				RQD		Power Point Presentation	
March	23-3-2026	31-3-2026	03	Improvement in sites: Grouting, Backfilling	Literature review	Power Point Presentation	
				Revision		Power Point Presentation	
				Revision		Power Point Presentation	

COMPONENT	MAXIMUM MARKS
ISA I	7.5
ISA II	7.5
ISA III	7.5
PRACTICAL	25
SEMESTER END EXAM	60
TOTAL	100