

Lecture Plan							
Name of the College: Government College of Arts, Science and Commerce. Sanquelim - Goa							
Name of Faculty: Shritesh Mhapsekar				Subject: Major			
Paper code: GEO-203, Introduction to Mining Geology				Program: BSc		Division:	
Academic year: 2025-26				Semester: IV		Total Lectures: 45	
Course Objectives: 1. Explain the types and processes involved in the mining industry. CL2 2. Discuss laws governing the mining industry. CL2 3. Describe environmental concerns related to mining. CL2 4. Demonstrate preparation of mine development plan, Environmental Management Plan and Key Plan. CL2							
Course Outcome: 1. Explain the different processes related to the mining industry. CL3 2. Evaluate mineral resources. CL3 3. Practice sustainable mining methods. CL3 4. Interpret lithologs and cross-sections based on borehole data. CL4							
Student Learning Outcome:							
Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
December 2025	December 1, 2025	December 7, 2025	3	Mining: Introduction to Mining			1. Arogyaswamy, R. N. P. (1973). Courses in Mining Geology. III

				Mining methods (Surface)			Edition, Oxford and IBH publication Co. 2. Babu S.K. and Sinha D. K. Practical Manual of Exploration and Prospecting, CBS Publishers and Engineers. 3. McKinstry, H. E. (1948). Mining Geology, Prentice Hill Inc.
	December 8, 2025	December 14, 2025	3	Mining methods (Surface) Mining methods (Underground)			
				Mining methods (Underground)			
	December 15, 2025	December 21, 2025	3	Overview of the Mining Industry (Exploration stage, Planning stage, Mining stage, Ore processing, Exports, Environmental management)			
				Overview of the Mining Industry (Exploration stage, Planning stage, Mining stage, Ore processing, Exports, Environmental management)			
				Role of a geologist in the mining industry			
January, 2026	December 29, 2025	January 4, 2026	3	Case study: Mining Scenario in Goa			
				Mineral exploration (G4, G3, G2 and G1)			

			Mineral exploration (G4, G3, G2 and G1)		
January 5, 2026	January 11, 2026	3	Geological mapping		
			Types of drilling, drilling equipment and accessories		
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January 12, 2026	January 18, 2026	3	Sampling techniques		
			borehole logging, core, sludge		
			Mineral resources and reserves, Types of mineral resources		
January 19, 2026	January 25, 2026	3	Categorization of reserves based on UNFC		
			Categorization of reserves based on UNFC		
			Categorization of reserves based on UNFC		
January 26, 2026	February 1, 2026	3	Estimation of ore reserve		
			Estimation of ore reserve		
			Grades of Ore: mine cut-off, mill cut-off, breakeven grades		

February, 2026	February 2, 2026	February 8, 2026	3			
				Offshore Areas Minerals Concession Rules 2006, Mineral Auction Rules 2015,		
				MCDR 2017, MCR 2016		
	February 9, 2026	February 15, 2026	3	Mineral (Evidence of Mineral Content) Rules 2015		
				Manual for preparation of Mining plan, NMET Rules		
				Regulatory Bodies and their role- National Mineral Exploration Trust (NMET),		
	February 16, 2026	February 22, 2026	3	Ministry of Earth Sciences (MOES), Ministry of Environment & Forest (MoEF)		
				District Mineral Foundation (DMFs), Indian Bureau of Mines (IBM),		
				Central Pollution Control Board (CPCB), Directorate of Mine (DMG - Goa		
	February 23, 2026	March 1, 2026	3	Mine Planning		
				Mine Planning		

	March, 2026				Mining machinery			
		March 2, 2026	March 8, 2026	3	Mining below water table and mine drainage			
					quality control			
					Mineral beneficiation (dry, wet)			
		March 9, 2026	March 15, 2026	3	Mineral beneficiation (dry, wet)			
					Environmental impact due to mining			
		Environmental impact due to mining						
		March 16, 2026	March 22, 2026	3	Environmental Impact Assessment (EIA)			
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			Environmental Management Plan (EMP)					
		March 23, 2026	March 29, 2026	3	Utilization and conservation of mineral resources			
					Utilization and conservation of mineral resources			
		Case studies						
	April, 2026	March 30, 2026	April 5, 2026	3	Revision			
					Revision			
					Revision			
	Assessment Rubrics	Component	Max Marks					
		ISA 1	7.5					
		ISA 2	7.5					

Practical	25
Project	
Semester End Exam	