

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: <ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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						

December 8, 2025	December 14, 2025	3	<p>Mining methods (Surface)</p> <p>Mining methods (Surface)</p> <p>Mining methods (Underground)</p> <p>Mining methods (Underground)</p>			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 15, 2025	December 21, 2025	3	<p>Overview of the Mining Industry (Exploration stage, Planning stage, Mining stage, Ore processing, Exports, Environmental management)</p> <p>Overview of the Mining Industry (Exploration stage, Planning stage, Mining stage, Ore processing, Exports, Environmental management)</p> <p>Role of a geologist in the mining industry</p>			
January, 2026	December 29, 2025	3	<p>Case study: Mining Scenario in Goa</p> <p>Mineral exploration (G4, G3, G2 and G1)</p>			

				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		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			

					Mining machinery					
March, 2026	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)					
					Environmental Impact Assessment (EIA)					
					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					
Assessment Rubrics	April, 2026	March 30, 2026	April 5, 2026	3	Revision					
					Revision					
					Revision					
		Component	Max Marks							
		ISA 1	7.5							
		ISA 2	7.5							

Practical	25
Project	
Semester End Exam	