

Semester Lecture Plan

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

Name of Faculty: Shritesh Mhapsekar

Subject: Geology

Paper code: GEO-241 Crystals and Gemstones

Program/Course: SY B.Sc.

Division:

Academic year: 2025- 2026

Semester: III

Total Lectures: 15

Course Objectives:

1. Discuss the occurrence of minerals in rocks and the processes involved in their formation. CL2
2. Describe the natural, synthetic, and organic gemstones. CL2
3. Describe the physical and optical properties of crystals and gemstones. CL1

Course Learning Outcome:

1. Explain the Physical and optical properties of crystals/gemstones. CL2
2. Examine imperfections in crystals and gemstones. CL3
3. Identify crystals and gemstones. CL3

Month	Lectures From: To:		No. of lectures allotted	Topic, Subtopic to be covered	Learning outcome	ICT Tools	Reference books
July 2025	June 30, 2025	July 06, 2025	1	Introduction			Fernandes S. and Choudhary G., (2010). Understandin g Rough Gemstones,
	July 07, 2025 to	July 13, 2025	1	Minerals and Mineraloids			

	July 14, 2025 to	July 20, 2025	1	Occurrence of Minerals in rocks.			Indian Institute of Jewellery.
	July 21, 2025 to	July 27, 2025	1	Crystals and their characteristics - Faces, Systems, Symmetry, Forms.			2. Karanth, R V; (2000). Gem and
	July 28, 2025 to	August 03, 2025	1	Gemstones - natural, synthetic gemstones and organic products.			Gem deposits of India, Geological Society of India.
August 2025	August 04, 2025	August 10, 2025	1	Physical and optical properties of crystals/gemstones Colour, Pleochroism, Lustre, Play of colours (Iridescence, Labradorescence,			
	August 11, 2025	August 17, 2025	1	Adularescence, Aventurescence, Opalescence), Luminescence (Fluorescence,Phosphorescen ce, Thermoluminescence, Triboluminescence),			
	August 18, 2025	August 24, 2025	1	Crystal habit, Cleavage, Parting, Fracture			
	August 25, 2025	August 31, 2025	1	Holiday			
	September 01, 2025	September 07, 2025	1	Imperfections in Crystals.Internal (point defects, Inclusions),			
September 2025	September 08, 2025	September 14, 2025	1	Imperfections in Crystals.Internal (point defects, Inclusions),Chatoyancy, Asterism.F			
	September 15, 2025	September 21, 2025	1	Factors deciding the cost of a gemstone.			

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	September 22, 2025	September 28, 2025	1	.Enhancement and Treatments of gemstones.
	September 29, 2025	October 05, 2025	1	Synthesis of gemstones. Need for Faceting. Styles of cut.
	October 06, 2025	October 12, 2025	1	Revision
October 2025	October 13, 2025	October 19, 2025	1	Revision

*Note: Data filled in the above form is sample data.