

## 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:** 60

**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<br>From: To: |               | No. of<br>lectures<br>allotted | Topic, Subtopic to be<br>covered     | Learning<br>outcome | ICT Tools | Reference<br>books                                                    |
|-----------|-----------------------|---------------|--------------------------------|--------------------------------------|---------------------|-----------|-----------------------------------------------------------------------|
| July 2025 | June 30, 2025         | July 06, 2025 | 1                              | Introduction                         |                     |           | Fernandes S. and Choudhary G., (2010). Understanding Rough Gemstones, |
|           | July 07, 2025<br>to   | July 13, 2025 | 1                              | Study of crystal models/<br>crystals |                     |           |                                                                       |

|                   |                       |                       |   |                                                                                                                                                            |  |  |                                                                                                           |
|-------------------|-----------------------|-----------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------|
|                   | July 14, 2025<br>to   | July 20, 2025         | 1 | Study of crystal models/<br>crystals                                                                                                                       |  |  | Indian<br>Institute of<br>Jewellery.                                                                      |
|                   | July 21, 2025<br>to   | July 27, 2025         | 1 | Study of crystal models/<br>crystals                                                                                                                       |  |  |                                                                                                           |
|                   | July 28, 2025<br>to   | August 03,<br>2025    | 1 | Study of crystal models/<br>crystals                                                                                                                       |  |  |                                                                                                           |
| August 2025       | August 04,<br>2025    | August 10,<br>2025    | 1 | Identification and<br>description of minerals                                                                                                              |  |  | 2. Karanth, R<br>V; (2000).<br>Gem and Gem<br>deposits of<br>India,<br>Geological<br>Society of<br>India. |
|                   | August 11,<br>2025    | August 17,<br>2025    | 1 | Identification and<br>description of minerals                                                                                                              |  |  |                                                                                                           |
|                   | August 18,<br>2025    | August 24,<br>2025    | 1 | Identification and<br>description of minerals                                                                                                              |  |  |                                                                                                           |
|                   | August 25,<br>2025    | August 31,<br>2025    | 1 | Description &<br>Identification of cuts in<br>gemstones.                                                                                                   |  |  |                                                                                                           |
|                   | September<br>01, 2025 | September<br>07, 2025 | 1 | Description &<br>Identification of cuts in<br>gemstones.                                                                                                   |  |  |                                                                                                           |
|                   | September<br>08, 2025 | September<br>14, 2025 | 1 | Description &<br>Identification of cuts in<br>gemstones.                                                                                                   |  |  |                                                                                                           |
|                   |                       |                       | 1 | Identification of<br>gemstones using<br>Dichroscope,<br>Polariscope,<br>Spectroscope,<br>Refractometer, Ultra<br>Violet lamp,<br>Gemological<br>Microscope |  |  |                                                                                                           |
| September<br>2025 | September<br>15, 2025 | September<br>21, 2025 |   |                                                                                                                                                            |  |  |                                                                                                           |

## Semester Lecture Plan

|              |                    |                    |                                                                                                                                    |
|--------------|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------|
|              |                    | 1                  | Identification of gemstones using Dichroscope, Polariscope, Spectroscope, Refractometer, Ultra Violet lamp, Gemological Microscope |
|              | September 22, 2025 | September 28, 2025 |                                                                                                                                    |
|              |                    | 1                  | Identification of gemstones using Dichroscope, Polariscope, Spectroscope, Refractometer, Ultra Violet lamp, Gemological Microscope |
|              | September 29, 2025 | October 05, 2025   |                                                                                                                                    |
|              | October 06, 2025   | October 12, 2025   | 1<br>Revision                                                                                                                      |
| October 2025 | October 13, 2025   | October 19, 2025   | 1<br>Revision                                                                                                                      |

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

