Title: **Application Methods in Geosciences**

Eligibility: Bachelor's degree in any Faculty

Objectives: To create awareness of Environment quality

To develop skills in handling equipment's related to survey of water,soil,rocks

To create manpower in Gemmology and Geological Surveying and Mapping

Course Structure: The course is equivalent to 4 credits . The course can be run in any of the four semesters.

Syllabus:

I **1. Industrial Mineralogy** **(1 credit)**

- Study of physical properties of industrial minerals and materials in hand specimens with respect to industrial specifications

2. Gemmology

- Introduction to Gems
- Identification of gemstones
- Jewellery Designing Skills – Use of Jewel CAD

3. Thin Section Making, Polishing and Mineral Identification

II. **1.Introduction to Survey Methods** **(1 credit)**

- Geological Surveying and Mapping – Plane Table, Magnetic Compass etc
- Site Survey
- Rock Stability
- Rock Mechanics and
- Slope Stability

2. Engineering aspects of Soil and Water conservation Structures and its relevance in Watershed Management

III **1. Exploration Methods** **(1 credit)**

- Resistivity Method
- GM Counter Method
- Related Softwares

2. Logging Methods

- Core Logging

3. Water Budgeting, Rain Water Harvesting Techniques and Well Hydraulics

IV 1. Analytical Methods (1 credit)

- Ore Analysis and Ore Dressing
- Analytical Methods of Geomaterials (Water, Soil and Rock samples)
- RS-GIS methodologies and related softwares

Methodology: Lectures supplemented with case studies that may include visits.

Assessment: Final assessment by written and group discussion. Skill based assessment will be as per the case study.