## MGP 405: MINERALOGY AND GEOCHEMISTRY (Lab, Hard core)

**Skills, employability and entrepreneurship:** This practical subject is very useful for transforming the knowledge from four walls to the field as the Earth Science is a field Science. Therefore, practical's of this subject are very relevant students to enhance skills to work in quarrying, mining, rock polishing, cement, silica/glass, sand mining, brick, ceramic, pottery and refractory industries and also in chemical labs to analyze the quality of water and sediment/soil. They will be suggested to start their own entrepreneurship.

### MINERALOGY (Lab)

1. Megascopic study of important rock forming minerals.
2. Crystallography: Crystal systems and angular relationships.
3. Calculation of mineral formula from chemical data of olivine, garnet, pyroxene and amphibole.
4. Identification of mineral samples collected by students during field work.
5. Interactive sessions of teaching to enhance students-teacher interactions through hands-on demonstrations and exercises in the recent advancement of the subject related to the curriculum.

### GEOCHEMISTRY (Lab.)

1. Introduction to principals of geochemical analyses.
2. Determinations of moisture content, porosity, and density of sediment samples.
3. Determination of chlorosity and estimation of salinity of water.
4. Measurements of hardness, calcium and magnesium carbonates.
5. Estimation of dissolved oxygen in natural waters. Importance of oxygen in aquatic, marine and terrestrial environments.
6. Estimation of partial pressure of carbon dioxide in water samples.
7. Standards of knowing the water quality: WHO, EPA and Indian standards.
8. Geochemical analysis of samples collected by students.
9. Interactive sessions of teaching to enhance students-teacher interactions through hands-on demonstrations and exercises in the recent advancement of the subject related to the curriculum.