Department: Mining Engineering **Division:** Mining Exploration and Mineral Processing

Level and Major: BSc, Mining Exploration and Mineral Processing

Course Title: Geochemical Exploration 2 **Number of Credits:** 2

Prerequisite: Geochemical Exploration 1 **Lecturer:** Dr. Ardeshir Hezarkhani

Course Goals and Objectives

The field of geochemistry involves study of the chemical composition of the Earth and other planets, chemical processes and reactions that govern the composition of rocks, water, and soils, and the cycles of matter and energy that transport the Earths chemical components in time and space, and their interaction with the hydrosphere and the atmosphere.

Course Topics

- Geochemical Principals
- Different types of elemental distribution in the time and space
- Mineral Complexes
- Instrumental Analysis
- Statistical applications in Geochemical Expressions - Analysis
- Application of Gas geochemistry on mineral explorations
- Application of Hydro-geochemistry on mineral explorations
- Application of Bio-geochemistry and geobotany on mineral explorations

Reading Resources

- Principles of Environmental Geochemistry by Nelson Eby Hardcover
- Geochemistry, Groundwater and Pollution, Secon... by C. A. J. Appelo
- Pending GNews Rattan Lal Soil Carbon Dynamics: An Integrated Methodology (2010), Cambridge University Press
- Elementsv.6/1, Feb 2010 Jon Davidson Principles of Igneous and Metamorphic Petrology (2008), Cambridge University Press
- Principles of Geochemical Exploration, Hassani Pak, University of Tehran Publications (In Persian)