Department: Mining Engineering **Division:** Rock Mechanics

Level and Major: MSc, Rock Mechanics

Course Title: Geotechnics **Number of Credits:** 2

Lecturer: Dr. Hossein Salarirad

Course Goals and Objectives

Learning of the basic principles of geotechnics and the ability to apply these principles in the construction of engineering structures in the soil.

Course Topics

- Introducing the course and its syllabus, getting acquainted with students
- Introducing some projects and engineering construction in geotechnics
- Understanding the origin and engineering properties of soil
- Identification of Atterberg Limits in Soil, Soil Grading Curve
- Engineering Classification of soil
- Phasic relations and physical composition of soil
- Soil Compaction
- Effect of water in soil layers, effective stress
- Soil consolidation theory
- Settlement in Soil
- Soil shear strength
- Flow net in Soil layers
- Lateral Pressure in soil, Introduction to retaining walls analysis
- Geotechnical Soil Investigation
- Laboratory tests for Atterberg limits, grading and shear strength

Reading Resources

- Principles of Geotechnical Engineering, Braja Das