

Department: Mining Engineering

Division: Mining Exploitation and Rock Mechanics

Level and Major: BSc, Mining Exploitation and Rock Mechanics

Course Title: Laboratory Of Rock Mechanics

Number of Credits: 1

Corequisite: Principles of Rock Mechanics

Lecturer: Eng. Hamid Zarei

Course Goals and Objectives

Teaching of theoretical principles and how to accurately carry out rock mechanic tests based on instructions.

Course Topics

- Necessity of laboratory rock mechanic tests execution
- Evaluation of rock mass geomechanical properties according to intact rock properties and geological structures
- Necessity of observance of safety tips at laboratory
- Principles of field sampling to conduct laboratory tests
- Introduction of measurement instruments used in rock mechanic laboratory
- Rock block drilling and preparation of rock core specimens for different tests
- Cutting and correction of rock core specimen ends
- Uniaxial compressive strength test and determination of elastic moduli of intact rock core specimens
- Indirect tensile test (Brazilian test) and determination of tensile strength
- Determination of compression and tensile strength under point load test
- Slake durability test
- Evaluation of uniaxial compression strength and elastic moduli of rocks using Schmidt hammer
- Direct shear strength test of rock specimens under constant normal force
- Measurement of physical properties of rocks
- Determination of cohesion and internal friction angle of rock core specimen using triaxial compression test
- How to write a technical report for different rock mechanic tests