

Department: Mining Engineering

Division: Tunneling and Underground Spaces

Level and Major: MSc, Tunneling and Underground Spaces

Course Title: Advanced Rock Mechanics

Number of Credits: 2

Lecturer: Dr. Hamed Molladavoodi

Course Goals and Objectives

Introduction to advanced rock mechanics.

Course Topics

- Stress and strain tensor, principal stress and plane
- Intact rock characters
- Laboratory tests
- Discontinuity characters
- Strength of anisotropic rock and rock mass
- Strength and deformability of rock mass
- Failure criteria and nonlinear behavior
- Discontinuity and rock mass failure criteria
- Rock dynamic characters
- Rock time-dependent behavior
- Hydraulic rock behavior
- Hydraulic conductivity
- In situ stress measurement
- Stress distribution around the opening
- Stress distribution around some openings

Reading Resources

- Up-to-date articles