

Department: Mining Engineering

Division: Mining Exploitation and Rock Mechanics

Level and Major: BSc, Mining Exploitation and Rock Mechanics

Course Title: Underground Spaces Excavation

Number of Credits: 2

Prerequisite: Blasting Engineering+ Ground Control and Support System

Lecturer: Dr. Kourosch Shahriar

Course Goals and Objectives

Gain ability to research, design and supervise the implementation of specialized projects in the field of well-drilling and tunneling

Course Topics

- Course introduction, references introduction, definitions, history, and classifications
- Planning
- Geotechnical discoveries
- Design and planning considerations, limitations, advantages, and disadvantages of drilling methods
- The effect of geological terrain and defects on rock behavior
- Traditional equipment and methods of tunnel drilling
- Full-section mechanized methods
- The new Austrian method
- Roadheader machines and their application in tunneling
- Tunnel boring machines (TBM)
- Drilling and design of mine wells