

Department: Mining Engineering

Division: Mining Exploitation

Level and Major: MSc, Mining Exploitation

Course Title: Advance Shaft and Underground Spaces Excavation

Number of Credits: 2

Lecturer: Dr. Kourosh 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