

Department: Mining Engineering

Division: Mining Exploitation

Level and Major: MSc, Mining Exploitation

Course Title: Subsidence Engineering

Number of Credits: 2

Lecturer: Dr. Kourosch Shahriar

Course Goals and Objectives

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

Course Topics

- Course introduction, references introduction, acquaintance and history
- Natural subsidence
- Developing engineering subsidence concepts
- Mining and land movement
- Movements caused by underground mining
- The final subsidence pit
- Dynamic subsidence pit
- Subsidence prediction using the NCB empirical model
- Different subsidence prediction methods
- Impact function
- Profile function
- Numerical methods
- Empirical methods
- Physical Models
- Subsidence caused by room and pillar mining
- Subsidence caused by the extraction of sloping layers
- Subsidence caused by drilling shallow tunnels
- Subsidence caused by water, petroleum and gas extraction
- Subsidence control

Reading Resources

- Surface Subsidence Engineering, Syd .s. Peng, SME, 1992

- Subsidence, Prediction and Control, Whitaker, Reddis, 1989
- Subsidence Engineering Handbook, NCB, 1966
- Longwall Mining, SYD S. Peng, H. Schiang, John Wiley, USA, 1984
- Michael Karmis, 2009, Enhancing Mine Subsidence Prediction and Control Methodologies for Long-term Landscape Stability, Blacksburg, Virginia