Department: Mining Engineering **Division:** Rock Mechanics

Level and Major: Ph.D., Rock Mechanics

Course Title: Mechanics of Strata Control

Number of Credits: 3 **Lecturer:** Dr. Kourosh Shahriar

Course Goals and Objectives

Getting abilities for understanding strata behavior and mechanics for design and implementation of mining and rock engineering projects.

Course Topics

- Rock burst- Their mechanics and control
- Importance of Strata control for mineral and energy development
- Mining for oil-Innovations in energy development
- Tunneling for storage- Nuclear waste disposal in deep underground repositories
- Strata control in shaft and oil well design and construction
- Control of floor failure
- Stability of rock pillars
- Strata control and pillar design for submerged works
- Stabilization principals in static and dynamic environments

Reading Resources

- Evillascusaey Potvin (ed.). Ground support in mining and underground construction, Balkema, Singapore.
- Z.T. Bienawski, 1987. Strata control in mineral Engineering, Balkema, Rotterdam.
- M.J. Jermik, 1987. Ground mechanics in hard rock mining, Balkema, Rotterdam.
- S. Peng, J. Zhang, 2007. Engineering geology for underground rocks, Springer, New York.
- A. Hudson, P. Harrison, 1997. Engineering Rock Mechanics, Pergamon, UK.
- Y. Zhao, J. Zhao (ed.), 2011. Advances in rock dynamics and applications. Taylor and Francis, UK.