Department: Mining Engineering **Division:** Mineral Processing

Level and Major: Ph.D., Mineral Processing

Course Title: Seminar I **Number of Credits:** 1

Lecturer: Dr. Kourosh Shahriar

Course Goals and Objectives

Designing special topics in underground mines for specific issues in extraction.

Course Topics

- Principles of Gravity Flow of Materials Factors that control the gravity flow, Laboratory research and field tests
- Loss of mineral in mining, Classification and incorporation of Losses, Coefficients of completeness of mineral extraction, Estimation of dilution of ore in mining
- Determination mining enterprise capacity and parameters of mining system, Theoretical methods, Experimental methods
- Rapid excavation system performance, Cost estimating, Disk cutting, Button cutting
- Hydraulic mining development, water-jet cutting of rock, Limitations of water jets alone
- Methane drainage, Calculation of gas content, Geologic influences, Impact of mine design, Regional impacts
- In situ gasification and combustion of coal, Underground coal gasification, In situ combination of coal
- Marine mining, Marine mining environment, Technology for marine mining
- Geotechnical design for sublevel open stopping, Rock mass characterization, Span and pillar design
- Block caving Geomechanics, Determine the degradability of the Block caving method, different ways

Reading Resources

- Up-to-date articles