

**Department:** Mining Engineering

**Division:** Mining Exploration and Mineral Processing

**Level and Major:** BSc, Mining Exploration and Mineral Processing

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**Course Title:** Drilling Engineering

**Number of Credits:** 2

**Prerequisite (Corequisite):** Field Geology and Mine Visit+ (Principles of Rock Mechanics)

**Lecturer:** Dr. Morteza Gholi Osanloo

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### **Course Goals and Objectives**

- Review of drilling method and exploratory drilling
- Introduction of all type drilling machines included percussive, rotary and percussive-rotary drills and its application on mine engineering division

### **Course Topics**

- Drilling methods
- Air drilling
- Rotary percussion drilling
- Principal of drilling in well, hole, borehole
- Cable drilling
- Mud circulation
- Mud pump
- Rotary drilling
- Core drilling
- Coring tools and rigs
- Bits
- Drill pipes
- Fishing
- Rock strength introduction

### **Reading Resources**

- Drilling methods by Dr. Morteza Osanloo
- Exploratory drilling