

**Department:** Mining Engineering

**Division:** Mining Exploration and Mineral Processing

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

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**Course Title:** Hydrogeology

**Number of Credits:** 2

**Prerequisite:** Fluid Mechanics

**Lecturer:** Dr. Homayoon Katibeh

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### **Course Goals and Objectives**

This course aims to familiarize students with the topic of groundwater and hydrogeology and to learn the definitions and concepts of this topic as well as the water wells hydraulic.

### **Course Topics**

- Hydrogeology
- Aquifer characteristics
- Aquifer appearance
- Types of aquifers
- Darcy's law
- Bernoulli's law
- Flow nets
- Isopotential maps
- Water well hydraulics
- Water well pumping tests
- Water well drawdown
- Water well efficiency
- Step drawdown test.

### **Reading Resources**

- Groundwater Hydrology by Dr. K, Todd
- Groundwater Hydrology, Homayoon Katibeh, Yazd University (in Persian)
- Land and Water Resources, Mahmoud Sedaghat, Payam Noor Publications, (in Persian)
- Drainage and Water Supply in Mines, Hasan Madani, Amirkabir University of Technology Publications, (in Persian)

### **Evaluation**

- Midterm exam: 35%
- Final exam: 60%
- Assignments: 5%