

**Department:** Mining Engineering

**Division:** Mining Exploration

**Level and Major:** MSc, Mining Exploration

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**Course Title:** Metallic Ore Deposits Exploration

**Number of Credits:** 2

**Lecturer:** Dr. Abbas Maghsoudi

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### **Course Description**

Metals occur in all kinds of rocks as a result of special geologic processes and they have supplied useful or valuable materials for human consumption. The study of ore deposit requires a background in other disciplines of geology including mineralogy, petrology, structural geology and stratigraphy.

### **Course Goals and Objectives**

Evaluate general characteristics, various geologic settings of ore deposits and the role of plate tectonic in the formation of ore deposit types.

### **Course Topics**

- Mineral Economics
- Classification of ore deposits
- Ore-forming processes
- Chromium and Nickel/PGE deposits
- Iron deposits
- Gold deposits
- Copper deposits
- Lead and Zinc deposits
- Tin and Tungsten deposits
- Rare earth elements deposits

### **Reading Resources**

- Walter L. P., 2011. Economic Geology Principles and Practice: Metals, Minerals, Coal and Hydrocarbons - Introduction to Formation and Sustainable Exploitation of Mineral Deposits.
- Pirajno. F., 2009. Hydrothermal Processes and Mineral Systems.
- Dill; H., 2010. The “chessboard” classification scheme of mineral deposits Mineralogy and geology from aluminum to zirconium.

- Misra, K., 2000. Understanding Mineral Deposits

### **Evaluation**

- Presentation: 30%
- Final Exam: 70%