

**Department:** Mining Engineering

**Division:** Mining Exploration and Mineral Processing

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

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**Course Title:** Ore Reserve Evaluation

**Number of Credits:** 2

**Prerequisite:** Engineering Statistics and Probabilities+ Economic Geology

**Lecturer:** Dr. Mohammad Jalali

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### **Course Goals and Objectives**

Geological concepts, sampling theory, determining structural geology parameters and their application on 3D ore modelling, 3D ore modeling.

### **Course Topics**

- Statistics and its application on 3D ore modelling
- Fundamental concepts of prospecting, exploration and ore reserve modelling
- Geological concepts and determining the genesis of a deposit
- Fundamental information for 3D ore modelling
- Sampling theory
- Ore reserve estimation by classical methods
- Ore reserve estimation by geostatistical method

### **Reading Resources**

- Fundamental of exploration methods, H. Madani, Amirkabir University Press (In Persian)
- Ore reserve estimation, Behzad Tokhmechi, Shahroud University Press (In Persian)
- Mineral Reserves Estimation, Hassan Madani, Payam Noor University Press, (In Persian)
- Guidelines for the Preparation of the End of Exploration Operations, Publication No. 495 of the State Budget Organization (In Persian)
- Modeling and calculation guidelines for inventory, program organization and budget
- Exploratory data analysis, Ali Asghar Hassani Pak, University of Tehran Publications (In Persian)
- Applied Mineral Inventory Estimation, Alastair J. Sinclair Cambridge University Press

### **Evaluation**

- Final Exam: 100 Grade

- Midterm Exam: 50 Grade
- Assignments: 40 Grade
- class attendance: 10 Grade