

**Department:** Mining Engineering

**Division:** Mining Exploration

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

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**Course Title:** Design of Geophysical Exploration Projects

**Number of Credits:** 2

**Lecturer:** Dr. Hamidreza Ramazi

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### **Course Goals and Objectives**

Learning and training of Geophysical Exploration Projects Design

### **Course Topics**

- Fundament of Geophysical exploration projects planning
- Seismic exploration projects: Planning of refraction profiles
- Seismic exploration projects: Planning of Micro-seismic profiles and Engineering seismic surveying and site investigations
- Seismic Tomography
- Planning of Velocity Gradient surveying
- Planning of Geophysical surveying in aquifers study
- Planning of Geophysical surveying in Oil fields study
- Planning of Geoelectrical surveyings- Resistivity
- Planning of Geoelectrical Surveyings– IP and R
- SP measurements planning
- Planning of Geoelectrical Surveying: the combination of SP, RS, IP and Mise-a-la-Masse in mineral exploration
- Planning of Gravity projects
- Planning of Magnetic projects
- Planning of EM projects
- Planning of Radioactive projects

### **Reading Resources**

- All the applied Geophysics Journals and related technical reports and case studies
- Ramazi Hamidreza, 2018, "Applied Geoelectrical Methods" Amirkabir University of Technology Publications
- Field Geophysics

- Ramazi Hamidreza "Engineering Seismic Methods" Published by Amirkabir University of Technology Tehran, Iran, 2016