

**Department:** Mining Engineering

**Division:** Rock Mechanics

**Level and Major:** Ph.D., Rock Mechanics

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**Course Title:** Special Topics I

**Number of Credits:** 1

**Lecturer:** Dr. Saeid Nikoosokhan

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### **Course Goals and Objectives**

This course involves analyzing and evaluating the sustainability of oil wells..

### **Course Topics**

- Introduction
- In-situ stress
- Stress directions from fracture traces
- Rock strength
- Formation pore pressure
- Formation fracture gradient
- Stresses around a wellbore
- Equations governing stress analysis
- Wellbore instability analysis
- Analysis procedure
- Wellbore fracturing pressure
- Wellbore collapse pressure

### **Reading Resources**

- Up-to-date articles