

**GED 594 Selected Topics Earthquakes and Faults (3+0+0) 3 ECTS 7**  
**Autumn 2019-2020**

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**COURSE DESCRIPTION**

Stress/strain. Solids/fluids. Fracture mechanics. Earth's structure, thermal state and basic motions. Plate tectonics. Faulting and earthquake processes.

**REFERENCE BOOKS**

- Christopher Scholz, *"The mechanics of earthquakes and faulting"*, 2002.
- Donald Turcotte, Gerald Schubert, *"Geodynamics"*, 2002

**COURSE OBJECTIVES**

Introducing a wide variety of earth science problems and understanding the dynamics of the Earth on local and global scale. Broadening earth science view integrating geodesy, geophysics, and geology.

**COURSE CONTENT**

Basic Concepts

- Stress and Strain
- Elasticity and Plasticity
- Solids and Fluids
- Fractures

Earth's Dynamics

- Structure
- Thermal State
- Motions
- Convection and Mantle Flow
- Instability

Crustal Deformation

- Plates
- Faults
- Earthquakes

**GRADING**

Term project/homework	30%
Midterm exam	30%
Final exam	40%