

**GED 541 Geodesy and Geodynamics (3+0+0) 3 ECTS 7**  
**Autumn 2018-2019**

**Instructor: Fatih Bulut (bulutf@boun.edu.tr)**

**COURSE DESCRIPTION**

Annual motion of the earth; spinning, precession and nutation; polar motion; earth tides and response of the solid earth to other external effects; tectonic plate movements; crustal deformations; mean and time-varying sea surface; geodynamical effects to geodetic means; earthquake prediction and global geodynamics programs.

**REFERENCE BOOKS**

- 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**

Homework	30%
Midterm exam	30%
Final exam	40%