

GED 516 Fundamentals of Geodesy (3+0+0) 3 ECTS 7
Autumn 2019-2020

Instructor: Aslı Doğru

COURSE DESCRIPTION

Euclidean space on the sphere and ellipsoid of revolution. Astronomical positioning and orientation. Gravity field of the earth. Heights above sea level. Terrestrial and space techniques. Geodetic networks. Contribution of geodesy to geodynamics studies.

REFERENCE BOOKS

- ✓ Geodesy: The Concepts by Peter Vanicek, E.J. Krakiwsky, Elsevier
- ✓ Geodesy by Wolfgang Torge, de Gruyter
- ✓ Introduction to Geodesy by James R. Smith, Wiley
- ✓ Satellite Geodesy by Günter Seeber, de Gruyter

COURSE OBJECTIVES

The purpose of this course is to introduce students to the basic concepts of geodesy and to enhance their knowledge on modern space geodetic technologies. At the completion of this course, the students will be able to convert point coordinates between different geodetic reference systems and explain theoretical concepts of geodetic methods.

COURSE CONTENT

Definition and History of Geodesy
Geodetic Measurements
Map Projections, Datum and Transformations
Heights, Geopotential, Vertical Datum
GPS/GNSS
Adjustment Computations
Statistical Methods in Geodesy
Gravity Field
Space Geodesy
Geodetic Networks
Geodesy and Geophysics
Advances in Geodesy

GRADING

Presentations	30%
Midterm exam	30%
Final exam	40%