GED 516 Fundamentals of Geodesy (3+0+0) 3 ECTS 7  
Spring 2017-2018

Instructor: Aslı Doğru

COURSE DESCRIPTION

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 OUTLINE
WEEK 1. Definition and History of Geodesy  
WEEK 2. Geodetic Measurements  
WEEK 3. Map Projections, Datum and Transformations  
WEEK 4. Heights, Geopotential, Vertical Datum  
WEEK 5. GPS/GNSS  
WEEK 6. Adjustment Computations  
WEEK 7. Mid-term Examination  
WEEK 8. Statistical Methods in Geodesy  
WEEK 9. Gravity Field  
WEEK 10. Space Geodesy  
WEEK 11. Geodetic Networks  
WEEK 12. Geodesy and Geophysics  
WEEK 13. Advances in Geodesy  
WEEK 14. Term project presentations  
WEEK 15. Term project presentations

GRADING
Term project 30%  
Midterm exam 30%  
Final exam 40%