GED 531 Potential Theory (3+0+0) 3 ECTS 8
Spring 2018-2019

Instructor: Onur Yılmaz

COURSE DESCRIPTION

REFERENCE BOOKS
✓ The Earth's Shape and Gravity by G. D. Garland, Pergamon
✓ Potential Theory and Static Gravity Field of the Earth by C. Jekeli, The Ohio State University
✓ Theory of the Earth's Gravity Field. Miloš Pick , Jan Picha , Vicenc Vyskočil, Elsevier
✓ Geodesy and Gravity by John Wahr, Samizdat Press
✓ Gravity and the Earth by A.H. Cook, Crane Russak & Co
✓ Physical Geodesy, Helmut Moritz, Springer

COURSE OBJECTIVES
The purpose of this course is to introduce students to the basic concepts of potential theory and geodesy related subjects to enhance their knowledge on physical geodesy. At the completion of this course, the students will be able to understand the principals of potential theory.

COURSE CONTENT
Attraction and potential of a solid body
Spherical Harmonics.
Legendre’s and Harmonic functions
Definition of Gravity
Level Surfaces and Plumb Lines and Curvature
Gravity Field of the Level Ellipsoid
Geoid Undulations and Deflections of the Vertical
Spherical Approximation and Expansion of the Disturbing Potential
Height systems

GRADING
Homework 50%
Final exam 50%

ATTENDANCE
50 % attendance is compulsory.