Course title : Physical Geodesy and Tectonic

Course Basic Information	
Academic Unit:	Faculty of Civil Engineering
Course title:	Physical geodesy and tectonic
Level:	Master
Course Status:	Mandatory
Year of Study:	Year 2, Semester 3
Number of Classes per Week:	2+2
ECTS Credits:	6 ECTS
Time /Location:	According to the Timetable
Teacher:	Prof.asoc.dr. Perparim Ameti
Contact Details:	perparim.ameti@uni-pr.edu
Course Description:	Gravitational law, Laplace's equation and boundary value problems; Gravity field, normal field and anomalous field of the earth; Global gravitational field and spherical harmonic expansions; Stokes' theory; Inversion of Poisson' integral; Molodenski's theory, Bjerhammar's methods and collocation; Global Geopotential Models; Geoid modelling Combination of Stokes' formula with global gravitational models
Course Goals:	This course offers knowledge about determination of gravity field of the earth as one of the main tasks in geodesy, based on measurements on and under the earth; theoretical and practical knowledge on measurements of these parameters
Expected Learning Outcomes:	By completing the module, the student should: - Be familiar with the mathematical and physical fundamentals of physical geodesy. - Understand the principles of gravity field determination. - Be able to carry out practical geoid computations.

Student Workload (should be in compliance with student's Learning Outcomes)			
Activity	**Hours**	**Day/ Week**	**Total**
Lectures	2	15	30
Theory/ Lab Work/Exercises	2	15	30
Practical Work	1	10	10
Consultations with the teacher	5	1	5
Field Work	1	5	5
Test, seminar paper	1	15	15
Homework	1	15	15
Self-study (library or home)	1	10	10
Preparation for final exam	1	15	15
Assessment time (test, quiz, final			

exam)			
Projects, presentations, etc.	1	15	15
Total			**150**

Teaching Methods:	- *Lecture* - *Discussion during lectures* - *Exercises* - *Work in group*
Assessment Methods:	In evaluation, the percentage of the attendance of each partial evaluation in the final evaluation must be determined. One of the ways of evaluation would be: First Evaluation: 15% Second Evaluation: 15% Homework or other engagement: 10% Attendance 5% Final Exam 55% Total 100%
Primary Literature:	1)Fan, H. (2008). Theoretical Geodesy. KTH 2)Moriz, H.: Advanced Physical Geodesy, WichmanVerlag, Karlsruhe 1989.
Additional Literature:	1)Klak, S.: Geophysic (Lecture Notes in Croatian), University of Zagreb, 1984.

Designed teaching plan

Week	Title of the Lecture
Week 1:	Introduction to potential theory
Week 2:	Gravity field of the earth
***Week 3*:**	Gravitational law
Week 4:	Laplace's equation and boundary value problems.
Week 5:	Gravity field, normal field and anomalous field of the earth.
***Week 6*:**	Global gravitational field and spherical harmonic expansions
Week 7:	Stokes' theory
Week 8:	Inversion of Poisson and formulas of VeningMeinesz
Week 9:	Evaluation errors
Week 10:	Combination of Stokes' formula with global gravitational models
***Week 11*:**	Gravimetrical methods
***Week 12*:**	Astro-geodetical methods
***Week 13*:**	Gravity field outside of earth area
***Week 14*:**	Statistical methods in physical geodesy
***Week 15*:**	Modern methods for determination of shape of the earth

Academic Policies and Code of Conduct

We start and finish class on time.
Tools used during class must be cleaned and stored away at the end of class.
Mobile/smart phones, and other electronic devices (e.g. iPods) must be turned off (or on vibrate) and hidden from view during class time.
Laptop and tablet computers are allowed for quiet use only; other activities such as checking personal e-mail or browsing the Internet are prohibited.

Note | If a student has more than 3 class assignements evaluated below 50% he/she loses the right on taking the final exam. Evaluation is done from 0-100 %.