STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Surveying Measurements Training		**1010101121010110121**
Field of study	Profile of study (general academic, practical)	Year /Semester
Civil Engineering First-cycle Studies	**general academic**	**1 / 2**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**
Cycle of study:	Form of study (full-time,part-time)	
First-cycle studies	**full-time**	

No. of hours				No. of credits
Lecture: **-**	Classes: **90**	Laboratory: **-**	Project/seminars: **-**	**3**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
other	**university-wide**

Education areas and fields of science and art	ECTS distribution (number and %**)**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Knowledge of analytic geometry, trigonometry and knowledge of the basic methods in the field of mathematical analysis. The knowledge gained in the classroom with surveying conducted in the semester preceding the practice of surveying.
2	**Skills**	Ability to solve basic tasks in mathematics of geometry and trigonometry. Skills gained in the classroom with surveying conducted in the semester preceding the practice of surveying.
3	**Social competencies**	Diligence and regularity in acquiring knowledge and skills.

Assumptions and objectives of the course:

Fieldwork with geodetic surveying practices are known to develop in students the skills acquired during laboratory classes. This is done by consulting and implementation of practical actions clearly formulating surveying tasks. Linking the theme of fieldwork tasks include training in mastering the techniques of measurement, which is measured repeatedly length, angles, etc. determines the height differences. Entire job including the development is to develop the ability to work in a team and perform well let alone some of the tasks encountered in engineering practice .

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. The student knows how to properly interpret the task of surveying, choose the equipment and perform them with the required accuracy. - [K_W03]

Skills:

1. Unable to correctly measure angles, distances and height differences, calculate the most probable value and assess the accuracy of the measurements. - [-K_U14]
2. Able to perform basic calculations directly surveying and using computer programs. - [-K_U14]
3. It can update the map essential directly and using CAD software. - [-K_U14]

Social competencies:

1. Able to work in a team on a designated task. - [-K_K01,K_K05]
2. Students deepen their knowledge in the field of geodesy and verifies it in legal terms. - [K_K03,K_K06]

Assessment methods of study outcomes

Continuous assessment of student involvement and contribution to the work done by measuring assembly.
Control and checking the daily progress of fieldwork and chamber measuring units.
Evaluation of the implementation of single practical tasks.
Final evaluation of the implementation of the sampling surveying.
Way of checking individual skills and score sets a leading of group practice.

Course description

Implementation of the selected tasks:
Task 1: Development of a situation and altitude maps in scale 1: 1000 or 1: 500.
Task 2: Surveying the development of building design and building lay on the ground.
Task 3: Testing the verticality of high object.
Task 4: Study of the vertical shape of the road bridge.
Task 5: Paving the axis of the road route.
Task 6: Development of longitudinal profile path with cross sections.
Task 7: Determination of longitudinal decline in the water table and the average water velocity.
Task 8: Develop cross-section of the river valley.

Basic bibliography:

1. Przewodnik do ćwiczeń terenowych z geodezji - praca zbiorowa, Wydawnictwo Politechniki Poznańskiej 2008

Additional bibliography:

1. Geodezja - M. Wójcik, I. Wyczałek, Wydawnictwo Politechniki Poznańskiej 1997
2. Geodezja dla kierunków niegeodezyjnych - Stefan Przewłocki PWN, Warszawa 2002
3. Geodezja. Podręcznik dla studiów inżynieryjno-bodowlanych - M.Odlanicki-Poczobutt PPWK, Warszawawa 1989

Result of average student's workload

Activity	Time (working hours)
1. Preparing to perform the task of surveying.	10
2. Performing surveying tasks.	75
3. Preparing to pass the surveying field exercises.	5

Student's workload

Source of workload	hours	ECTS
Total workload	90	3
Contact hours	90	0
Practical activities	90	0