STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Surveying Measurements Training**		Code **1010134241010120121**
Field of study **Environmental Engineering Extramural First-**	Profile of study (general academic, practical) **general academic**	Year /Semester **2 / 4**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **part-time**	
No. of hours Lecture: **-** Classes: **30** Laboratory: **-** Project/seminars: **-**		No. of credits **2**
Status of the course in the study program (Basic, major, other) **other**	(university-wide, from another field) **from another field**	
Education areas and fields of science and art **technical sciences** **Technical sciences**		ECTS distribution (number and %) **2 100%** **2 100%**

Responsible for subject / lecturer:

mgr inż. Michał Moczko
email: michal.moczko@put.poznan.pl
tel. 616652421
Faculty of Civil and Environmental Engineering
ul. Piotrowo 5 60-965 Poznań

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_W09]

Skills:

1. Unable to correctly measure angles, distances and height differences, calculate the most probable value and assess the accuracy of the measurements. - [-K_U08,K_U10,K_U15]
2. Able to perform basic calculations directly surveying and using computer programs. - [-K_U08,K_U10,K_U15]
3. It can update the map essential directly and using CAD software. - [-K_U01,K_U07,K_U10,K_U15]

Social competencies:

1. Able to work in a team on a designated task. - [-K_K03]
2. Students deepen their knowledge in the field of geodesy and verifies it in legal terms. - [-K_K01,K_K02]

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.
Persons conducting exercises - employees of the Department of Surveying:
dr hab. inż. Ireneusz Wyczałek
dr inż. Artur Plichta
mgr inż. Hanna Lelonkiewicz-Rowińska
mgr inż. Joanna Papis
mgr inż. Michał Moczko
mgr Michał Wyczałek

Course description

Learning methods: Observation, field measurement.
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 project of the collector and the demarcation of its axis in the field.
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.	4
2. Performing surveying tasks.	21
3. Participation in consultations.	2
4. Preparing to pass the surveying field exercises.	3
5. Own work.	20

Student's workload

Source of workload	hours	ECTS
Total workload	50	2
Contact hours	30	1
Practical activities	36	1