



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Field training of surveying [N1Bud1>PRGD]

### Course

Field of study

Civil Engineering

Year/Semester

2/3

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

compulsory

### Number of hours

Lecture

0

Laboratory classes

0

Other

0

Tutorials

48

Projects/seminars

0

### Number of credit points

3,00

### Coordinators

mgr inż. Michał Moczko

michal.moczko@put.poznan.pl

### Lecturers

### Prerequisites

**KNOWLEDGE:** Student has knowledge of analytic geometry, trigonometry and knowledge of the basic methods in the field of mathematical analysis; Student has knowledge gained in basics of geodesy course preceding this internship. **SKILLS:** Student has an ability to solve basic tasks in mathematics of geometry and trigonometry; Student has skills gained in basics of geodesy course preceding this internship. **COMPETENCIES:** Student is diligent and systematic in acquiring knowledge and skills.

### Course objective

Fieldwork with geodetic surveying internship are aimed for students to develop 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.

### Course-related learning outcomes

**KNOWLEDGE:** Student:

1. Knows how to properly interpret the task of surveying, choose the equipment and perform them with the required accuracy.

SKILLS: Student:

1. Is able to correctly measure angles, distances and height differences, calculate the most probable value and assess the accuracy of the measurements.

2. Is able to perform basic calculations directly surveying and using computer programs.

3. Can update the map essential directly and using CAD software.

SOCIAL COMPETENCES: Student:

1. Is able to work in a team on a designated task.

2. Deepens his/her knowledge in the field of geodesy and verifies it in legal terms.

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

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 Geodesy Laboratory: DSc Eng. Joanna Papis, MSc Eng. Anna Małek, MSc Eng. Aleksandra Bręk, MSc Eng. Michał Moczko.

## Programme content

Implementation of the selected tasks:

1. Development of a situation and altitude maps in scale 1: 1000 or 1: 500.

2. Surveying the development of building or road design and it's delineation on the ground.

3. Testing verticality.

4. Geodesic analysis concerning water aspects.

## Course topics

The tasks performed during surveying internships should be selected from those listed below. The limitation in their number is the time frame of the internship.

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: Delineating an axis of a road.

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.

The implementation of individual tasks is discussed in detail in the Guide to field exercises in geodesy - collective work, Wydawnictwo Politechniki Poznańskiej 2008. Due to the development of measurement technologies and the increasing access to spatial data contained in geoportals, measurement and processing of results are subject to improvement and may differ from those described. However, as a rule, the goal contained in the topic is achieved under the guidance and control of the supervisors of the internship groups using available tools.

## Teaching methods

Observation, field measurement. Project method.

## Bibliography

Basic:

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

Additional:

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 inżyniersko-budowlanych - M.Odlanicki-Poczobutt PPWK, Warszawa 1989.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	80	3,00
Classes requiring direct contact with the teacher	48	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	32	1,00