



COURSE DESCRIPTION CARD - SYLLABUS

Course name

BASICS OF GEODESY

Course

Field of study

Civil Engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

Number of hours

Lecture

18

Laboratory classes

10

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

mgr inż. Michał Moczko

Responsible for the course/lecturer:

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Prerequisites

Knowledge of analytical geometry, trigonometry and knowledge of basic methods of mathematical analysis. Ability to solve basic tasks in mathematics of geometry and trigonometry. Diligence and regularity in acquiring knowledge and skills. The student can work in a team.

Course objective

Activities are intended to familiarize the students towards the construction of the large scale trends studies geocartographic and the basic work of the geodesic used in the construction industry, including: Mastering the techniques of surveying in the field to separate the execution of measurement of lengths, angles, the designation of the differences of method of geometric leveling and trigonometric, calculation of the coordinates and the surface. Skills of formulating and solving simple tasks of



surveying. The ability to determine the impact of errors in measurements and the accuracy of the measurements. Surveying literacy materials and documentation prepared in the traditional and digital.

Course-related learning outcomes

Knowledge

1. Know the basic measuring methods used in geodesy and useful means of the processing of measurement results. - [-KB_W03]
2. Know what are the fundamentals of geometric and technical implementation of the basic maps and other geomapping studies. - [-KB_W02]
3. Know what geodetic works are performed in the construction industry. - [-KB_W03]

Skills

1. Knows how to correctly measure the angles, distances and differences in height, calculate their most likely values and assess the accuracy of the measurements. - [-KB_U14]
2. It can convert the size observed on the coordinates and their derivatives, and vice versa; know how to use computer software to the public. - [-KB_U14]
3. Can read the map key directly and with the use of CAD programs, as well as to enrich it with new content. - [-KB_U14]

Social competences

1. Deepens Student knowledge of surveying and verifies it legally. - [-KB_K03]
2. The Student works in team. - [-KB_K01]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Conditions for inclusion of lectures:

Seminar on written on the last classes lasting 45 minutes for a maximum of 20 points.

Rating scale:

The number of points P-max 20

$P > 18$ - 5,0

$16 < P < 18$ - 4,5

$14 < P < 16$ - 4,0

$12 < P < 14$ - 3,5

$10 < P < 12$ - 3,0

$P < 10$ - 2,0



Conditions for inclusion of laboratories:

2 completed surveys (projects) together for a maximum of 7 points,

4 practical exercises performed, each for a maximum of 2 points,

seminar on written on the last classes lasting 45 minutes for a maximum of 5 points.

Rating scale:

The number of points P-max 20

$P > 18 - 5,0$

$16 < P < 18 - 4,5$

$14 < P < 16 - 4,0$

$12 < P < 14 - 3,5$

$10 < P < 12 - 3,0$

$P < 10 - 2,0$

Programme content

LECTURES

Legal space geodesy. Tasks of Geodesy and geodetic documentation in construction investment process. Spatial reference System: coordinate systems, mapping. The classification of occupancy: measurements of situational-altitude, implementation, control. Situational-altitude and geodetic warp. Methods of measurement of basic size measured in surveying: direction, length, azimuth, altitude difference. Geodetic measurement techniques: built, ways of measurement and presentation of results. The principle and application of geometric leveling and trigonometric. Evaluation of the accuracy of the measurements. Source and accidental biases in measurements. Geodetic instruments (rangefinders, Theodolites, tachimetry, levels, satellite receivers): construction, maintenance, control of the correctness of the operation. Map as a source of spatial information. The classification of maps due to the content of the criteria and scales. Map of the main and derivatives, as follows: for the purposes of map design, map standard. The main map in the form of analog and digital. The Bill on the coordinates and the theory of errors (the basics).

LABORATORIES

1. Measurement and calculation of horizontal and vertical angle. Measurement of the length of the geodetic warp side
2. Calculation of coordinates on the plane and surface area.



3. Reading the content of the underground utilities network and elements of land and building records on the fragment of the basic map.
4. Perform the procedure for checking the correct operation of the level. Measurement and calculation of the leveling chain established on both sides.

Teaching methods

LECTURES

Educational methods: Information lecture.

LABORATORIES

Educational methods: Practice method. Demonstration method.

Bibliography

Basic

1. Geodezja - M. Wójcik, I. Wyczałek, Wydawnictwo Politechniki Poznańskiej 1997
2. Geodezja dla kierunków niegeodezyjnych - Stefan Przewłocki PWN, Warszawa 2002

Additional

1. Geodezja w budownictwie i Inżynierii - Michał Gałda Rzeszów 2001
2. Geodezja 1 - A. Jagielski, Kraków 2005
3. Geodezyjne pomiary inżynierskie - I. Wyczałek, E. Wyczałek, Poznań 2005
4. Geodezja. Podręcznik dla studiów inżyniersko-budowlanych - M. Odlanicki-Poczobutt PPWK, Warszawa 1989
5. Inne pozycje książkowe z podstaw geodezji lub geodezji dla kierunków niegeodezyjnych.

Breakdown of average student's workload

	Hours	ECTS
Total workload	86	3,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes, preparation for tests, project preparation) ¹	56	2,0

¹ delete or add other activities as appropriate