COURSE DESCRIPTION CARD - SYLLABUS

Course name
Field training of surveying [S1BZ1E>PRGD]

Course

Field of study
Sustainable Building Engineering

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other
0

Tutorials
80

Projects/seminars
0

Number of credit points

3,00

Coordinators

dr inż. Artur Plichta
artur.plichta@put.poznan.pl

Lecturers

Prerequisites

Basic knowledge on mathematics, geometry, trigonometry

Course objective

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 .

Course-related learning outcomes

Knowledge:
1. The student knows how to properly interpret the task of surveying, choose the equipment and perform them with the required accuracy.

Skills:

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

Social competences:
1. Ability to work in a team on a designated task.
2. Students deepen their 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.

Programme content

Legislation basis in geodesy and cartography. Theoretical and practical foundations of situational and height measurements in geodesy. Basics of using surveying instruments. Basics of geodetic calculations. Principles of creating base map databases.

Course topics

The tasks performed during surveying internships should be selected from those listed in the program content. The limitation in their number is the time frame of the internship. 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 tutors of the internship groups using available tools. However, the following tasks are carried out during the classes: Setting up a reference frame in the 2000 coordinate system. Tacheometric measurement of a reference frame. Situational measurement using the polar method with a Leica/Topcon electronic total station. Height measurement of the reference frame using the geometric leveling method. Calculation of the height of reference frame points. Performing an elevation measurement of a fragment of the area using the tachymetric method. Preparing a situational and elevation map on a scale of 1:500 in the MikroMap application. Measurement of the height of an inaccessible point using the trigonometric leveling method. Geodetic development of the construction design, including drawing up a documentary sketch and setting out the facility in the field in relation to the reference frame.

Teaching methods

Teaching methods: Observation, field measurement.

Bibliography

Basic
John Uren, Bill Price, Surveying for Engineers (5th Edition), ISBN 978-0230221574
Barry Kavanagh, Tom Mastin, Surveying: Principles and Applications (9th Edition). ISBN 978-0137009404
Łyszkowicz A., Łyszkowicz S., Surveying. Wyd. Politechniki Warszawskiej, ISBN 978-83-7207-876-6
Additional
Barry Kavanagh, Dianne Slattery Surveying: with construction applications (7th Edition). ISBN 978-0132766982
Hycner R., Dobrowolska-Wesołowska M., Geodesy, Surveying and Professional Ethics, Wyd. Gall, 2008
Wyczałek I., Mróczyńska M., Plichta A., Pomiary sytuacyjne w zastosowaniach inżynierskich. Wyd. PP, 2019
Wyczałek I., Plichta A., Mapa w zastosowaniach inżynierskich. Wyd. PP, 2020
Wyczałek I., Plichta A., Pomiary wysokościowe i sytuacyjno-wysokościowe w praktyce inżynierskiej, Wydawnictwo Politechniki Poznańskiej, 2022

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,00
Classes requiring direct contact with the teacher	45	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	25	1,00