COURSE DESCRIPTION CARD - SYLLABUS

Course name
Geotechnics and special foundations [S2Bud1-BDMiK>GiF]

Course

Field of study
Civil Engineering

Year/Semester
1/2

Area of study (specialization)
Road, Bridge and Railway Engineering

Profile of study
general academic

Level of study
second-cycle

Course offered in
polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
15

Other (e.g. online)
0

Tutorials
0

Projects/seminars
15

Number of credit points

3,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge on building mechanics, soil mechanics and engineering geology

Course objective

Knowledge on types and technologies of foundations and soil improvement.

Course-related learning outcomes

Knowledge:
Has detailed knowledge of the rules of foundation engineering of complex building structures.

Skills:
Can design foundations and soil improvement in complicated soil conditions, for II and III structures category for road, bridge and railway structures.

Social competences:
Take responsibility for the reliability of working results and their interpretation.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Exam, soil improvement design project.

Programme content

Soil mechanics. Soil improvement methods including soil gouting techniques - design and execution. Pile foundations methods - execution and caculations of bearing capacity and settlements. Bearing capacity of other deep foundations - barrettes. Latteral earth pressure, deep excavations and retaining structures. Dewatering of deep excavations. Presentation of case studies.

Teaching methods

Lectures, design project

Bibliography

Basic
1. “Ground Improvement”. Klaus Kirsch, Alan Bell
2. “Fundamenty palowe – technologie i obliczenia” Kazimierz Gwizdała, PWN
3. “Fundamenty palowe – badania i zastosowania” Kazimierz Gwizdała, PWN
4. „Prefabrykowane pale wbijane” Kazimierz Gwizdała, Jakub R.Kowalski, PG
5. „Fundamentowanie, projektowanie posadowień” Czesław Rybak i inni.
Additional
1. „Wzmacnianie i uszczelnianie gruntu metodą mieszania in –situ”. Michał Topolnicki

Breakdown of average student's workload

	Hours	ECTS
Total workload	85	3,00
Classes requiring direct contact with the teacher	60	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	25	1,00