



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Special foundations [S2Bud1>FS]

### Course

Field of study

Civil Engineering

Year/Semester

1/2

Area of study (specialization)

Structural 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

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

15

### Number of credit points

2,00

### Coordinators

dr inż. Andrzej Wojtasik

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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 in complicated soil conditions, for II and III structures category and selected quasi-static and quasi-dynamic loaded building 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, pile design project.

## Programme content

Soil mechanics. Soil improvement methods including soil grouting techniques - design and execution. Pile foundations methods - execution and calculations of bearing capacity and settlements. Bearing capacity of other deep foundations - barrettes. Lateral 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	60	2,00
Classes requiring direct contact with the teacher	45	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	15	0,50