



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Special foundations [N2Bud1>FS]

Course

Field of study

Civil Engineering

Year/Semester

2/3

Area of study (specialization)

Construction Engineering and Management

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

part-time

Requirements

compulsory

Number of hours

Lecture

18

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

10

Number of credit points

2,00

Coordinators

dr inż. Adam Duda

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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:

Pass a subject, 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.

Course topics

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 | 28 | 1,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 32 | 1,00 |