

SYLLABUS

Course title: Concrete Structures

Course title (in Polish): Konstrukcje betonowe

The syllabus is valid since the summer semester of the academic year 2025/26 and its content is not subject to changes during the semester.

Course details:

Unit offering the course: Faculty of Civil Engineering

Course designated for the unit: The Silesian University of Technology

Specialization: Structural Engineering

Didactic cycle: Winter semester 2025/2026 - the third year of first degree studies

Coordinator of the course: Rafał Krzywoń

Delivery mode: in-person/hybrid

Number of ECTS credits: 4

Language:
English
Course homepage:
https://platforma2.polsl.pl/rb/course/view.php?id=56
Prerequisites:
No requirements
Short description:
The objective is to acquaint students with the principles of structural design of the more complex concrete structures. Provide students with practical knowledge connected with the designing and detailing of concrete structures.
Description:
LECTURES: 30 hours Concrete frame structures, frame detailing (corners, corbels), complex slabs and walls (openings, support conditions, specific load situations, reinforcement detailing), tanks and silos (designing and reinforcing), shells (classification, designing and reinforcing), arches (designing and reinforcing), industrial transportation infrastructure (types, loads)
PRACTICAL CLASSES: 6 hours Selection of precast concrete units, static and structural analysis of hall structure, drawings and detailing
PROJECT: 24 hours Design of single bay industrial concrete hall with crane
Bibliography:
Elliott K.: „Precast concrete structures”. Butterworth Heinemann 2002 Ghali A.: „Circular storage tanka and silos”. E&FN Spon, London 2000 Brown C. Nielsen J.: „Silos”. E&FN Spon, London 1998 Praca zbiorowa: „Budownictwo betonowe, Tom VII, X, XII, XIII”. Arkady 1970

Starosolski W.: „Konstrukcje żelbetowe”. Arkady, Warszawa
Kłóś Cz, Mitzel A. Suwalski J.: „Zbiorniki na cieczy”. Arkady, Warszawa

Learning outcomes:

KNOWLEDGE

Student who completed the course:
knows the principles of mechanics of advanced concrete structures and knows selected computer programs supporting the design (K1A_W05).
knows the codes and recommendations related to the design and dimensioning of the structural members made of concrete (K1A_W06).

SKILLS

Student who completed the course:
is able to classify and calculate the loads acting on the concrete structures (K1A_U02)
is able to provide the static analysis of the building structure (K1A_U04).

Assessment methods and assessment criteria:

PREREQUISITES: No requirements

COURSE PASS REQUIREMENTS:

- 1) attendance in class
- 2) regular consultation on the progress of work on the project
- 3) delivery and project defence
- 4) passing the exam (both parts)

FINAL GRADE: 50% (exam) + 50% (project)

To have partial grades transferred, students should contact the instructor within the first two weeks of the semester

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ECTS points: 4