# SYLLABUS

**Name:** ***Selected Engineering Problems - Fundamentals of Structural Design (BudAB>SI2SEPFOS19)***
**Name in Polish:**
**Name in English:** ***Selected Engineering Problems - Fundamentals of Structural Design***

## Information on course:

**Course offered by department:** Faculty of Civil Engineering
**Course for department:** Silesian University of Technology
**Term:** Summer semester 2025/2026
**Cordinator of course edition:** Prof. dr hab. inż. Mariusz Jaśniok

**Default type of course examination report:**

ZAL

**Language:**

English

**Course homepage:**

https://platforma2.polsl.pl/rb/course/view.php?id=93

**Short description:**

Getting basic information concerning structural design. Getting ability of determination of actions on building structures. Understanding methods of achievements of structures reliability. Introduction to use of standards in design. Understanding simplifications used in design.

**Description:**

LECTURES 10h
The design process. Structural materials. Basic mechanisms of load transfer. Selected structural systems. Classification of building actions. Limit states and combination of actions. Permanent and imposed loads according to the Eurocode 1-1. Snow loads according to the Eurocode 1-3. Wind action according to the Eurocode 1-4.

EXERCISES 2h, PROJECT 10h
The course includes 10 hours of lectures, 2 hours of exercises and 10 hours of project classes on which students acquire practical skills regarding the knowledge given during lectures.

**Bibliography:**

[1] O'Brien E.J., Dixon A.S.: Reinforced and Prestressed Concrete Design – The Complete Process, Longman Scientific & Technical
[2] EN 1990:2002 Eurocode: Basis of Structural Design.
[3] EN 1991-1-1: 2001. Eurocode 1: Actions on structures. Part 1-1: General actions. Densities, self-weight, imposed loads for buildings.
[4] EN 1991-1-3:2003. Eurocode 1: General actions. Part 1-3. Snow loads.
[5] EN 1991-1-4:2004. Eurocode 1: Actions on structures. General actions. Part 1-4. Wind actions.

**Learning outcomes:**

Skills: a Student can:
(1) describe selected structural systems and basic mechanisms of load transfer [K1A_U01]
(2) give classifications of building actions, enumerate ultimate and serviceability limit states and combination of actions according to Eurocodes [K1A_U02]
(3) prepare a load statement for various types of structures and actions [K1A_U02]
(4) perform the combination of actions according to selected Eurocodes [K1A_U02]

**Assessment methods and assessment criteria:**

PREREQUISITES: none

COURSE REQUIREMENTS
To obtain a signature from the course Student have to:
1) get at least a grade (3,0) from TEST from the lectures
2) submit and defence 3 PROJECTS on time.

FINAL GRADE
The final grade consists of: 75% of the TEST (lectures + classes) and 25% of the arithmetic mean of the grades from three PROJECTS.

PARTIAL GRADES
In order to transfer partial grades obtained from a repeated course, the student should report to the course coordinator within the first two weeks of the semester.

The SYLLABUS is valid from the summer semester of the 2025/2026 academic year, and its content is not subject to change during the semester.

## Information on course edition:

**Default type of course examination report:**

ZAL

**Bibliography:**

*missing bibliography in English*

## Details of classes and study groups

lecture (10 hours)

**Study groups details**

*missing study groups details*

classes (2 hours)

**Study groups details**

*missing study groups details*

project (10 hours)

**Study groups details**

*missing study groups details*

**Element of course groups in various terms:**

| Course group description | First term | Last term |
|---|---|---|
| *missing group description in English* (BudAB-S1-2019-sem2) | 2020/2021-L | |

**Course credits in various terms:**

| **<without a specific program>** | | | |
|---|---|---|---|
| Type of credits | Number | First term | Last term |
| European Credit Transfer System (ECTS) | 2 | 2020/2021-Z | |