SYLLABUS

Name: ***Design and Testing of Masonry and Timber Structures (BudAB>SM3DETMTS19)***
Name in Polish:
Name in English: ***Design and Testing of Masonry and Timber Structures***

Information on course:

Course offered by department: Faculty of Civil Engineering
Course for department: Silesian University of Technology

Default type of course examination report:

ZAL

Language:

English

Course homepage:

https://platforma.polsl.pl/rb/course/view.php?id=541

Short description:

The aim of the subject is to provide students with information about designing masonry walls and wooden structures due to fire conditions, designing of infill walls, designing of wooden constructions and rules for conducting the tests of masonry and wooden structures

Description:

LECTURES: 20 hours
Lectures on masonry structures concerns the principles of designing and construction of infill walls, principles of designing masonry due to fire conditions and methods of testing masonry structures and methods of determining the strength of existing structures. The timber structures lectures concerns the principles of designing advanced timber structures and designing timber elements due to fire conditions.

EXERCISES: 10 hours
As part of the masonry structures exercises, methods of spatial numerical modeling of walls loaded in the plane and out of the plane will be presented and practiced. As part of the exercises on timber structures, the design of glued laminated timber elements will be presented.

PROJECT: 20 hours
The design of masonry structures includes the design of external and internal infill walls in a building. Students determine loads acting on the walls, modelling the walls in a program based on FEM, calculate the walls capacity and metal connectors and draw the designed walls together with the details of the connections between walls and RC structure. As part of the wooden structure design, students dimension the glued-laminated timber beam.

LABORATORY: 10 hours
The laboratory focuses on methods for determining the strength of materials in existing constructions.

Bibliography:

[1] Drobiec Ł., Jasiński R., Piekarczyk A.: Masonry structures according to Eurocode 6 and related standards. Vol. 1, PWN, Warszawa, 2013.
[2] Drobiec Ł., Jasiński R., Piekarczyk A.: Masonry structures according to Eurocode 6 and related standards. Vol 2, PWN, Warszawa, 2014.
[3] Drobiec Ł., Jasiński R., Piekarczyk A.: Masonry structures according to Eurocode 6 and related standards. Vol 3, PWN, Warszawa, 2017.
[4] Drobiec Ł., Jasiński R., Misiewicz L., Rybarczyk T.: Solbet Academy. Infill walls. Designing and execution, Solbet, Solec Kujawski, 2014.
[5] Standard EN 1995 -1-1.
[6] Standard EN 1995 -1-2.
[7] Neuhaus H.: Timber structures, PWT, Rzeszów, 2004

Learning outcomes:

(1) Knows and understands the standards and guidelines for the design of selected general, industrial and communication facilities - [field effect K2A_W02].
(2) Knows and understands the principles of constructing and dimensioning elements of complex building structures: wooden and masonry - [field effect K2A_W03].

SKILLS
(3) Is able to design details, selected elements and the whole object of a complex wooden and masonry structures - [field effect K2A_U03].

Assessment methods and assessment criteria:

PREREQUISITES: Passing all Masonry Structures courses as part of the first-cycle studies.

COURSE PASS REQUIREMENTS:
1) attendance in class,
2) regular consultation on the progress of work on the project
3) obtaining a positive assessment of the project,
4) obtaining a positive grade on the laboratory report,
5) passing the test from the lecture part.

FINAL GRADE: 70% (lectures), 20% (project), 10% (laboratory report).

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

The syllabus is effective from the winter semester of the 2025/2026 academic year, and its content is not subject to change during the semester.

Element of course groups in various terms:

Course group description	First term	Last term

Course group description	First term	Last term
missing group description in English (BudAB-S2-2019-sem3)	2020/2021-Z	

Course credits in various terms:

<without a specific program>

Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	4	2020/2021-Z	