COURSE DESCRIPTION CARD - SYLLABUS

Course name
Loads in structures and masonry structures [N1Bud1>OBiKM]

Course

Field of study
Civil Engineering

Year/Semester
2/3

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
part-time

Requirements
elective

Number of hours

Lecture
6

Laboratory classes
0

Other
0

Tutorials
20

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

A student beginning this course should have basic knowledge of mathematics, basic mechanics and building materials. The student should have skills in performing calculations of tasks in physics and using available sources of information.

Course objective

Students know the rules of collecting burdens. Load classification. Overview of standards, load combinations. To provide students with basic knowledge of masonry constructions, including: construction, nature of construction work and dimensioning principles. Developing in students the skills of dimensioning of masonry structures.

Course-related learning outcomes

Knowledge:
1. Student is able to calculate a set of loads acting on buildings
2. Student is able to design selected elements and simple masonry constructions
3. Student is able to use selected computer programs to support design decisions in sustainable construction

Skills:
1. Student knows the rules of construction and dimensioning of elements and connections of masonry structures
2. Student knows the most common building materials (in masonry constructions) and assembly rules

Social competences:
1. Student is responsible for the integrity of his work and its interpretation

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The knowledge acquired during the lectures is verified by two 45-minute colloquia carried out during the 7th and 15th lectures. Each of the colloquia consists of questions (test or open), differently scored.
Grade 5,0 ≥ 90%, 4,5 ≥ 80%, 4,0 ≥70%, 3,5 ≥ 60%, 3,0 ≥ 50%.
The lectures outlines on the basis of which the questions
are developed will be sent to students via e-mail using the university's e-mail system.
In the case of e-learning, it is possible to change the method of passing the lectures in quizzes - after each lecture. The points obtained from the individual quizzes are added up and the final grade is determined on their basis.
Maximum number of points for each quiz: 3 points.
Number of quizzes: 7
Scoring - evaluation:
20-21 - 5,0
18-19 - 4,5
16-17 - 4,0
14-15 - 3,5
12-13 - 3,0
0-11 - 2,0
The skills acquired during the seminars are verified on the basis of the current verification of the correctness of calculations carried out in the exercise booklet (pass threshold - correctly performed calculations for the simplified method - grade 3.0, additionally for the detailed method - grade 4.0, additionally for the "joined" method - evaluation 5.0) and presentation of the results obtained (possibility to increase the evaluation)

Programme content

298 / 5 000
Lectures:
Collection of loads according to Eurocodes.
Permanent and variable loads, including climatic ones.
Characteristics of masonry structure elements.
Dimensioning of unreinforced masonry structures according to Eurocodes.
Structural requirements for masonry structures.
Exercises:
Checking the load-bearing capacity of a brick pillar.

Course topics

Lectures:
Collection of loads according to Eurocodes:
- permanent, live and snow loads,
- wind loads, load combinatorics.
Characteristics of masonry construction elements in the past and today: masonry elements, mortars
Dimensioning of unreinforced masonry structures according to EC: loaded mainly vertically
Dimensioning of unreinforced masonry structures according to EC: simplified dimensioning methods, dimensioning of structures loaded with concentrated force.
Structural requirements for masonry structures, guidelines for the execution and acceptance of masonry works.
Exercises:

Checking the load-bearing capacity of a masonry pillar - calculations carried out (independently or in a team) in a notebook: Siewczyńska M., Zeszyt ćwiczeń projektowych z konstrukcji murowych, Wydawnictwo ApuntoPress, Poznań, 2019

Teaching methods

Lectures - informative lecture with multimedia presentation
Exercises: working with book, project and exercise methods - alone or in teams, exposition

Bibliography

Basic:
1. Drobiec Ł., Jasiński R., Piekarczyk A., Konstrukcje murowe według Eurokodu 6 i norm związanych, Tom 1, Wydawnictwo Naukowe PWN, Warszawa, 2013
2. Siewczyńska M., Zeszyt ćwiczeń projektowych z konstrukcji murowych, Wydawnictwo ApuntoPress, Poznań, 2019

Additional:
1. Jasiczak J., Gaczek M., Kuiński M., Siewczyńska M., Izolacyjność termiczna i nośność murowanych ścian zewnętrznych, Wyd. PP, P-ń 2011
2. Stawski B., Konstrukcje murowe. Naprawy i wzmocnienia, Wyd. Polcen, W-wa 2014

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	26	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	24	1,00