



Course title: DESIGN OF MASONRY STRUCTURES

ECTS credit allocation (and other scores): 3.5

Semester: spring

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 45

Course coordinator/ Department and e-mail: dr inż. Jacek Kindracki /Institute of Building Engineering
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Type of classes: classes and lectures

Substantive content

CLASSES: The project includes calculations of the load capacity of the internal and external wall in the residential building. A design task regarding the calculation of a plain masonry panel subjected to wind load. A design task regarding the calculation of a plain masonry wall carrying precast concrete floor beams.

LECTURES: The basics of design of masonry structures. Materials for making masonry: masonry units, mortar. Characteristic and design strength of masonry. Modulus of elasticity, shear modulus, dependence of σ - ϵ for masonry. Factors affecting the strength of the wall. Theoretical model of the destruction of the wall. Unreinforced masonry walls subjected to mainly vertical and lateral loading. Walls subjected to concentrated loads. Damage to masonry structures.

Learning purpose: To familiarize students with issues related to masonry structures and current masonry standards in order to gain the ability to design selected masonry structures.

On completion of the study programme the graduate will gain:

Knowledge: Student has knowledge in determining loads. Knows the design principles of selected masonry structures. Knows the basic standards, design rules for masonry buildings.

Skills: Student is able to design selected elements and masonry structures.

Social Competencies: Student is responsible for the reliability of the results of work and its interpretation.

Basic literature: A.W.Hendry, B.P.Sinha, S.R.Davies: DESIGN OF MASONRY STRUCTURES, Third edition of Load Bearing Brickwork Design, ©2004 Taylor & Francis.

Supplementary literature: Eurocode 6 - Design of masonry structures - Part 1-1: General rules for reinforced and unreinforced masonry structures.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 49

Student's independent work: 38,5