1. Course number and name

RB-S1-19-W16-18, Masonry and Timber Structures II

2. Credits and contact hours*

2 ECTS, lectures: 8 hours**, project: 8 hours**

3. Instructor's or course coordinator's name

Adam Piekarczyk, MSc, PhD, Assistant Prof.

4. Text book, title, author, and year

- Eurocode for Masonry EN 1996-1-1 and EN 1996-2. Guidance and Worked Examples. An International Masonry Society Special Publication

a. other supplemental materials

- EN 1996-1-1:Design of masonry structures. Part 1-1: General rules for reinforced and unreinforced masonry structures
- EN 1991-1-1: 2001. Eurocode 1: Actions on structures. Part 1-1: General actions. Densities, self-weight, imposed loads for buildings.
- EN 1991-1-4:2004. Eurocode 1: Actions on structures. General actions. Part 1-4: Wind actions.

5. Specific course information

a. brief description of the content of the course (catalog description)

Lectures:

(1) Unreinforced masonry walls subjected to shear loading, (2) Detailing and execution, (3) Methods for determining the compressive strength of existing masonry, (4) Serviceability limit state

Classes:

Discussing the project subject and scope.

Project:

The project concerning checking of ULS and SLS of stiffening (sheared) masonry walls in industrial hall building

b. prerequisites or co-requisites

No prerequisites and additional requirements

c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program

Required.

6. Specific goals for the course

a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic

The student:

- knows the standards and guidelines for the design of masonry structures and their elements,
- knows the rules of constructing and dimensioning elements of masonry structures,
- can assess and make a specification of loads acting on masonry building structures,
- can design selected elements and simple masonry and wooden structures.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

K1A_W05, K1A_W06, K1A_U02, K1A_U04

7. Brief list of topics to be covered

1. Information about unreinforced masonry structures: horizontally sheared walls, vertically sheared walls, characteristic shear strength of masonry, stiffening walls, influence of openings on in-plane stiffness, walls subjected to subsoil displacements.
2. Detailing and execution of masonry: masonry materials selection, joints thickness, bonding, masonry in various exposure conditions, requirements for masonry reinforcement, confined masonry.
3. Determining of compressive strength of existing masonry: destructive and non-destructive methods, factors influencing on the existing masonry strength.
4. Information about masonry SLS: basic types of cracking, causes of cracking, Eurocode regulations and requirements,

*- Consultations were not included in the contact hours

**-per semester