

COURSE DESCRIPTION CARD

Faculty of Civil Engineering and Environmental Sciences									
Field of study								Degree level and programme type	
Specialization/ diploma path	-							Study profile	Academic profile
Course name	Masonry and timber structures							Course code	IS-FCEE-00240W
								Course type	Erasmus
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	winter
	30			30				No. of ECTS credits	5
Entry requirements	Building materials, General construction, Strength of materials								
Course objectives	To acquaint students with the issues of shaping, designing and technology of execution of masonry and wooden structures. Teaching methods of analysis and dimensioning as well as preparation of construction projects in the field of masonry and wooden structures and their connections. Teaching the principles of constructing complex wooden structures and masonry structures in complex load states. Developing the ability to choose the optimal design solutions in the field of wooden and masonry structures								
Course content	Lecture: Principles of shaping wooden structures. Limit states of the load-bearing capacity and serviceability of wooden structures. Failure models and load capacity of connections. Analysis and design of complex wooden structures. Materials used in masonry structures. Calculation models and ULS analysis of masonry structures. Structures under fire loads. Durability of the structure. Project: Limit state method. Serviceability limit states. Interactions and influence of the environment. Properties of materials and products. Overview of code rules for the design of wooden and masonry elements. Discussion of material and construction assumptions necessary for the implementation of a design task in the field of wooden and brick construction. Connectors with the use of metal connectors. Barbed plate connectors. Design of masonry structures. Simplified methods of calculating unreinforced masonry.								
Teaching methods	Lecture, presentation and discussion of the solutions adopted								
Assessment method	Lecture - exam. Project - corrections, defense, presentation and discussion of the solutions adopted								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
LO1	applies standards and guidelines for structure design							K_B1_W01, K_B1_W02 K_B1_W03, K_B1_W04	

		K_B1_W06, K_B1_W10 K_B1_U02, K_B1_U05
L02	applies the principles of modeling, dimensioning and construction of elements	K_B1_W05, K_B1_W06 K_B1_U03, K_B1_U06 K_B1_U07
L03	can choose a static scheme and analyzes the structure	K_B1_W03, K_B1_W05 K_B1_U06
L04	uses SGN and SGU and is able to analyze them	K_B1_W06, K_B1_U06
L05	can use internet and other database sources	K_B1_W11, K_B1_U06 K_B1_U12
L06	Is able to determine ways to ensure durability of the structure	K_B1_W09, K_B1_U02
L07	develops the project in accordance with technical requirements	K_B1_U01, K_B1_U03 K_B1_U07
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
L01	written exam, calculation part of the project, presentation and defense of the project	L, P
L02	written exam, computational part of the project, graphic part and project defense	L, P
L03	graphic part of the project, project correction	P
L04	design part of the project, project correction	P
L05	corrections and defense of the project	P
L06	design part of the project	P
L07	descriptive part of the project	P
Student workload (in hours)		No. of hours
Calculation	Participation in lectures	30
	Participation in the project	30
	Preparation for the project and corrections	30
	Implementation of design tasks	10
	Preparation for the exam and attendance at it	20
	Participation in consultations	5
	TOTAL:	125
Quantitative indicators		HOURS
		No. of ECTS credits
Student workload – activities that require direct teacher participation		67
Student workload – practical activities		95
Basic references	1. Porteous J.: Structural timber design to EC5, Blackwell Publishing, 2007., 2. Eurocode 5: Design of timber structures 3. Eurocode 6: Design of masonry structures	

Supplementary references	1. McKenzie W.M.C. : Design of structural elements	
Organisational unit conducting the course	Department of Building Structures	Date of issuing the programme
Author of the programme	Dr Eng. Barbara Sadowska-Buraczewska	13.02.2022

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,

S – seminar