

COURSE DESCRIPTION CARD

Bialystok University of Technology										
Field of study	Civil engineering							Degree level and programme type	Bachelor's degree	
Specialization/ diploma path								Study profile	academic	
Course name	General Building Engineering II							Course code	19284107H	
								Course type	obligatory	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	4	
	16			32				No. of ECTS credits	3	
Entry requirements	Technical drawing & engineering graphics, Statics, Strength of materials, General building engineering I, Civil engineering materials									
Course objectives	The purpose of this module is to present students with basics of the structural design in accordance to EC0, actions on structures in accordance to EC1, basics of timber structures design in accordance with EC5 and basics of masonry structures design in accordance with EC6 Part 3.									
Course content	<p>Lecture (16 teaching hours): Structural design based on EN 1990 (EC0) Eurocode - <i>Basis of structural design</i>. Actions on structures based on EN 1991-1 Eurocode 1: <i>Actions on structures</i>: EN 1991-1-1 <i>General actions–Densities, self-weight, imposed loads for buildings</i>, EN 1991-1-3 <i>General actions–Snow Loads</i>, EN 1991-1-4 <i>General actions–Wind actions</i>. Basics of timber structures design based on EN 1995-1-1 Eurocode 5: <i>Design of timber structures</i>. Basics of masonry structures design in accordance with EN 1996-3 Eurocode 6 - <i>Design of masonry structures - Part 3: Simplified calculation methods for unreinforced masonry structures</i></p> <p>Practical (Project) (32 teaching hours): Technical drawings of a multi-family brick-built residential building - timber truss as a roof structure and two details of a building; Dimensioning of elements of a timber roof truss in accordance with Eurocode 5: rafter, purlin and post; Calculation of the bearing capacity of the brick wall in accordance with EN 1996-3.</p>									
Teaching methods	A series of lectures to provide students with an overview of the issues relating to structural design in accordance to EC0, actions on structures in accordance to EC1, basics of timber structures design in accordance with EC5 and basics of masonry structures design in accordance with EC6 Part 3.									
Assessment method	Lecture - written examination; Project – completion of the student's projects (drawings and calculations) and written test;									
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study		
LO1	Student (graduate) determines and combines loads acting on elements of construction objects							K_B1_U03		
LO2	Student (graduate) selects and applies construction materials in designed objects							K_B1_U05, K_B1_U07		
LO3	Student (graduate) prepares specification and technical drawings							K_B1_U04, K_B1_U08		

	of simple construction objects		
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
LO1	written examination, completion of the student's project	L, P	
LO2	test, completion of the student's project	L, P	
LO3	completion of the student's project	P	
Student workload (in hours)		No. of hours	
Calculation	lecture attendance	16	
	participation project classes	32	
	preparation for project	32	
	preparation for project test	7	
	participation in examination	10	
	participation in student-teacher sessions related to the course	2	
	TOTAL:	99	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		48	1,92
Student workload – practical activities		73	2,92
Basic references	1. European Standards - Eurocodes: EC0, EC1, EC5, EC6 Part 3. 2. H. Gulvanessian, J.-A. Calgaro and M. Holický: <i>Designers' Guide to EN 1990 Eurocode: Basis of Structural Design</i> , 2nd edition, Thomas Telford Ltd 2012. 3. H. Gulvanessian, P. Formichi, J.-A. Calgaro and G. Harding: <i>Designers' Guide to Eurocode 1: Actions on Buildings: EN 1991-1-1 and -1-3 to -1-7 (Designers' Guide to Eurocodes)</i> , Thomas Telford Ltd 2008 4. Porteous J., Kermani A.: <i>Structural Timber Design to Eurocode 5</i> , Wiley-Blackwell 2013.		
Supplementary references			
Organisational unit conducting the course	Department of Construction and Road Engineering	Date of issuing the programme	
Author of the programme	Dorota Małaszkiwicz, PhD, Eng. Natalia Stankiewicz, PhD, Eng.	1.09.2021	

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