



Subject card

Subject name and code	Modern Wooden Structures, PG_00069415						
Field of study	Civil Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2026/2027		
Education level	first-cycle studies		Subject group				
Mode of study	Part-time studies		Mode of delivery		at the university		
Year of study	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Mateusz Sondej				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	0.0	15.0	0.0	25
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=37292						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	25		5.0		70.0	100
Subject objectives	To teach a basic knowledge for designing simple timber structures.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U04] Reads and prepares construction documentation (including drawings, graphic documentation in the CAD environment), efficiently uses maps as well as architectural, construction and geodetic drawings.		The student is able to create structural drawings of timber structures.		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W03] Demonstrate knowledge and understanding of the processes, established standards and design methods in the civil engineering subject area and of their limitations.		The student knows the principles of designing timber elements according to Eurocode 5.		[SW1] Assessment of factual knowledge		
	[K6_K04] Engages in independent lifelong learning and individually follows the development of science and technology in the field of civil engineering.		The student independently acquires additional knowledge needed to complete the project.		[SK2] Assessment of progress of work		
	[K6_U07] Design and build engineering structures in a sustainable manner, with care for the natural environment and a minimum carbon footprint		The student is able to design a timber roof.		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_U03] Design engineering objects and details, processes and engineering systems by applying appropriate standards and methods of design.		The student is able to design a timber roof.		[SU3] Assessment of ability to use knowledge gained from the subject		

Subject contents	Course content – lecture Timber as a building material. Ecological aspects of timber use. Wood species, sawn timber production, sawn timber defects, timber assortment, sorting and strength classes. Wood-based materials. Wood protection against fire, biological corrosion, and insects. Fasteners in wooden structures. Joint design. Pitched roof trusses.		
	Course content – project Structural calculations for steep roofs. Dimensioning of solid wood elements. Designing nail and screw connections. Preparation of structural drawings.		
Prerequisites and co-requisites	Completion of the General Structural course.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		50.0%	50.0%
		50.0%	50.0%
Recommended reading	Basic literature	1. Kotwica J.: Timber Structures in Traditional Construction. Warsaw: Arkady 2004. 2. Neuhaus H.: Timber Construction. Rzeszów: Polish Technical Publishing House 2004. 3. Nożyński W.: Examples of Calculation of Timber Building Structures. Warsaw: Wydawnictwa Szkolne i Pedagogiczne Spółka Akcyjna 1994. 4. Wajdzik Cz.: Roof Trusses. Wrocław: Wrocław Agricultural University Publishing House 2000. 5. Michalak H., Pyrak S., Single-family House Design and Calculation: Arkady 2005.	
	Supplementary literature	1. Collective work: Handbook for construction supervisors. Warsaw: Arkady 1985. 2. Collective work: Handbook for construction engineers and technicians, vol. V. Warsaw: Arkady 1986.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Is visual assessment used in timber strength classification?		
	List and draw the loads acting on the roof truss.		
	Draw the collar beam-rafter connection.		
	What forces occur in the connection sketch?		
	Estimate the numerical value of the design forces.		
	Does the tensile strength of timber depend on the height of the rectangular cross-section?		
	What is anisotropy?		
Practical activities within the subject	Not applicable		

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