



Subject card

Subject name and code	Fundamentals of buildings, PG_00044590						
Field of study	Transport						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2023/2024		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Paweł Więclawski				
	Teachers		dr inż. Paweł Więclawski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	15.0	0.0	45
	E-learning hours included: 0.0						
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	45		5.0		25.0	75
Subject objectives	To acquaint students with the basic building materials, main systems and building elements such as: foundations, walls, ceilings, roofs; and finishing elements. Presentation of design methods and limit state conditions.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U10] able to carry out simple engineering tasks related to the construction and operation of a selected element of the transport system, select the right methods and tools, select the right technical parameters for an object to be designed including economic and environmental aspects		The student is able to design a simple direct foundation in accordance with current regulations and standards. He will check the load-bearing capacity of the foundation in conditions with and without drains according to Eurocode 7 and settling. The student is able to collect loads and perform static calculations of a road culvert.		[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		
	[K6_W12] has basic knowledge of the design and construction of transport infrastructure		Acquiring skills in shaping engineering structures and acquiring skills in reading and understanding documentation, structural drawings, static and strength calculations, technical descriptions.		[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
Subject contents	<ol style="list-style-type: none">1. Definition of construction, building, structure, small architecture. Presentation of the main branches of material economy production. Presentation of different branches of construction.2. Review of laws, regulations and standards used in the design process of various construction objects.3. Introduction to the issues related to the ground: strength parameters, deformation parameters; physical characteristics of the ground.4. Types and principles of foundation design. Design procedures according to Eurocode 7.5. Overview of building materials used in general construction.6. Characteristics of basic construction elements: roofs, walls, insulation.7. Characteristics of actions acting on different structures.8. Verification of the load-bearing capacity condition of selected structural elements.9. Introduction to hydrotechnical construction. Types of hydro-technical structures10. Characteristics and principles of designing vertical and horizontal transport for construction purposes.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Inter-window pillar design.	50.0%	25.0%
	Project of the direct foundation.	50.0%	25.0%
	Passing the theoretical part.	50.0%	50.0%
Recommended reading	Basic literature	1. Z. Wiłun, Zarys Geotechniki. Wydawnictwo Komunikacji i Łączności, Warszawa 2013 2. J. Panas, Nowy poradnik majstra budowlanego. Arkady, Warszawa 2003r. 3. PN-EN 1997-1:2008, Eurokod 7: Projektowanie geotechniczne- Część 1: Zasady ogólne. 4. PN-B-03002:2007 Konstrukcje murowe. Projektowanie i obliczanie.	
	Supplementary literature	1. Gwizdała K.: Fundamenty palowe. Technologie i obliczenie. Wydawnictwo naukowe PWN, 2011. 2. PN-EN 1996-1-1:2005. Eurokod 6 - Projektowanie konstrukcji murowych - Część 1-1: Reguły ogólne dla zbrojonych i niezbrojonych konstrukcji murowych, 3. PN-EN 1996-2:2006. Eurokod 6 - Projektowanie konstrukcji murowych - Część 2: Wymagania konstrukcyjne, dobór materiałów i wykonanie muru, 4. PN-B-12020:1997 Pokrycia dachowe ceramiczne Dachówki i gąsiorzy dachowe,	
	eResources addresses	Adresy na platformie eNauczanie: PODSTAWY BUDOWNICTWA - Transport sem. III, studia stacjonarne I stopnia -inżynierskie. - 2023/24 - Moodle ID: 28842 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28842	
Example issues/ example questions/ tasks being completed	1. Technical definition of building. 2. What is a small architecture object? 3. What is the difference between a foundation footing and a foundation slab? 4. What is the dynamic load of piles? 5. List the types of vertical insulation of foundation walls. 6. What is keramzite and what is its use in construction? 7. Give the advantages and disadvantages of ceramic tiles. 8. What is a sheet piles wall and what is its application? 9. List the methods of foundation of offshore wind turbines.		
Work placement	Not applicable		