



Subject card

Subject name and code	Fundamentals of buildings, PG_00044590						
Field of study	Transport						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022		
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 Geotechnics, Geology and Marine Civil 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						
	Adresy na platformie eNauczanie:						
Additional information:							
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_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		
	[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 acting on walls of a multi-storey building and check their load capacity.			[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		
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
	Passing the theoretical part.	50.0%	50.0%
	Inter-window pillar design.	50.0%	25.0%
	Project of the direct foundation.	50.0%	25.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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		
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 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		