

COURSE DESCRIPTION CARD

Białystok University of Technology									
Field of study	Civil Engineering						Degree level and programme type	Bachelor degree	
Specialization/ diploma path	-						Study profile	Academic profile	
Course name	Technology of construction works I						Course code	EN- B1N41030	
							Course type	obligatory	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	4
	20			20				No. of ECTS credits	5
Entry requirements	construction, building materials, concrete technology, basics of concrete structures								
Course objectives	To acquaint students with the basic concepts used in the technology of construction works. Teaching the identification of works and technological processes occurring in the implementation of building structures. Familiarizing students with the types of machines to perform construction works and the characteristics of their work. Developing the ability to design and analyse the implementation of technological processes by the complex mechanization method (designing a set of machines).								
Course content	<u>Lecture</u>: Definition of the construction process, definition of the technological process. Simple and complex technological processes. Mechanization of construction processes (partial, comprehensive, automation, robotics). Complex mechanization method - definition and sequence of actions when designing the execution of technological processes, selection of machine sets. Construction transport technology (types of transport and used machines). Technology and mechanization of complex work processes: earthworks, monolithic works, assembly and finishing works. Breakdown of complex processes into simple processes, and then on technological operations and the selection of machines for their implementation. <u>Project</u> (students carry out projects in teams): 1. Design of the technology of wide-area excavation (simple process). 2. Design of monolithic works execution technology - complex process (formwork assembly process, reinforcement works execution process and concrete works execution process). 3. Design of the assembly technology of a prefabricated industrial hall (simple process).								
Teaching methods	Information lecture, problem lecture, project method								
Assessment method	Lecture - written exam, project - project execution, project defense								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
EU1	He knows the basic concepts and principles of the identification of technological processes in construction. Has the necessary knowledge of the type of operating parameters of machines used in construction.							K_B1_W08 K_B1_W11 K_B1_W12	

EU2	He can analyse the technological process of construction works, divide a simple process into operations and assign machines to their execution.	K_B1_W11 K_B1_W08 K_B1_U11	
EU3	He can design sets of machines to perform construction processes, using the method of complex mechanization with computer support. He can analyse the obtained results. Is able to establish health and safety requirements in the implementation of construction works.	K_B1_W02 K_B1_W08 K_B1_U07 K_B1_U10	
EU4	He knows how to prepare a technology design for construction works: earthworks, monolithic and assembly works. Can calculate the efficiency and working time of machines used to perform individual processes, can work in a team.	K_B1_U02 K_B1_U07 K_B1_U10 K_B1_U14	
EU5	Is able to use internet and other databases (e.g. product catalogues, consultations with experts, etc.)	K_B1_K02	
EU6	He is prepared to critically assess his knowledge and received content in the field technology of construction works.	KK_B1_K01	
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
EU1	written exam	L	
EU2	written exam, project defense	L, P	
EU3	written exam, project defense	L, P	
EU4	project defense	P	
EU5	project defense	P	
EU6	Written exam, project defense	L, P	
Student workload (in hours)		No. of hours	
Calculation	participation in lectures	20	
	participation in design exercises	20	
	preparation for design exercises and project implementation	35	
	Preparation for project defenses	25	
	preparation for the exam and attendance (18h + 2h exam)	20	
	participation in consultations	5	
	TOTAL:	125	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		47	1.5
Student workload – practical activities		105	4.0
Basic references	1. Rowiński L. Technologia i organizacja procesów inżynierskich budownictwa miejskiego. Tom 3. Wydawnictwo Politechniki Śląskiej. 1996 2. Linczowski Cz. Technologia robót budowlanych. Politechnika Świętokrzyska. Kielce, 2000 3. Orłowski Z.: Podstawy technologii betonowego budownictwa monolitycznego. Wydawnictwo Naukowe PWN, Warszawa 2010.		

	4. Martinek W. Nowak P. Wojciechowski P.: Technologia robót budowlanych, Politechnika Warszawska, Warszawa 2012	
Supplementary references	1. Instrukcja 431/2008 „Warunki techniczne wykonania i odbioru robót budowlanych” 2. Konstrukcje betonowe i żelbetowe. Instytut Techniki Budowlanej, Warszawa, 2008 3. Chandler I.: Building Technology. Site Organization and Metod. Mitchell, Londyn, 1992 4. Kiernożycki Wł.: Betonowe konstrukcje masywne. Teoria, Wymiarowanie, Realizacja. Polski Cement Sp. z o.o., Kraków 2003 5. Rozporządzenie Ministra Infrastruktury z dnia 6 lutego 2003 r. w sprawie bezpieczeństwa i higieny pracy podczas wykonywania robót budowlanych (Dz. U. z dnia 19 marca 2003 r.)	
Organisational unit conducting the course	Department of Civil and Road Engineering	Date of issuing the programme
Author of the programme	Mgr inż. Nina Szklennik, dr inż. Edyta Pawluczuk, dr inż. Katarzyna Kalinowska-Wichrowska	January 30, 2019

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