

Faculty of Civil and Environmental Engineering				
Study programme:	Civil Engineering		Degree level:	Master's degree (full-time studies)
Specialization:	IPB		Diploma path:	
Module name:	Technology of construction works II		Module ID:	L 42415
Module type:	obligatory	Semester 2	Points ECTS	3
No. of hrs in semester:	W - 0	C - 45	L - 0	P - 0 Ps - 0 S - 0
Prerequisites:	<i>Technology of construction I; Building Materials; Fundamentals of design of concrete structures</i>			
Aims and objectives:	Review project documentation. Knowledge about technologies used in modern enterprises. Developing skills in preparing full construction documentation. Effective analysis of required formwork and scaffolding. Presentation of threats occurring during the construction works. Understanding the methods of implementing construction works under extreme circumstances. Knowledge about protection of excavation.			
Teaching methods:	Do the term paper. Written exam.			
Module content:	Analysis of project design documentation. "White tub" - insulation system in modern construction. Automation of construction processes. Technologies of complex construction processes: construction under extreme circumstances, high-rise buildings, earthworks, excavations and methods of their optimal protection. Automation of scaffolding and formwork design. Acceptances of construction works, application for occupancy permit.			
Learning outcomes:	<i>Student, who passed the subject:</i>		<i>Relevance to the programme learning outcomes</i>	
EK1	Analyzes complex construction processes and methods for optimizing works		K_B2_W13; K_B2_U12; K_B2_U13	
EK2	Student knows the techniques for performing protection of buildings against the impact of environmental conditions and other threats		K_B2_W08; K_B2_W09; K_B2_W15; K_B2_U11; K_B2_U15	
EK3	Student has the ability to draw up design documentation for buildings		K_B2_W11; K_B2_W13; K_B2_W14; K_B2_U14	
EK4	Analyzes the costs associated with the implementation of investments and presents suggestions for their optimization		K_B2_W09; K_B2_U15; K_B2_U16; K_B2_K06	
EK5	Student uses specialized software to design formwork and scaffolding of implemented buildings		K_B2_W12; K_B2_U07; K_B2_U14	
EK6	Student knows the procedures for the receipt of construction and finishing works		K_B2_W13; K_B2_W15; K_B2_K04	

Student workload (in hours)	Participation in exercises	15x3h=	45
	Preparation for passing the exercises and presence on them	10x1h=	10
	Participation in consultations related to exercises	3x1h=	3
	Implementation of exercise tasks	15x1h=	15
	Preparation for current classes	10x1h=	10
	Participation in practical classes	6x1h	6
		RAZEM:	89
Quantitative indicators	Student workload related to activities requiring direct teacher participation: 45h+3h+6h	54	ECTS 2
	Student workload related to practical classes: 10h+15h+10h	25	1
Basic references:	1. Linczowski Cz.: <i>Technologia robót budowlanych</i> . Politechnika Świętokrzyska, Kielce 2000. 2. Mielczarek Z.: <i>Nowoczesne technologie w budownictwie</i> . Wydawnictwo Arkady, Warszawa 2009. 3. Martinek W., Nowak P., Wojciechowski P.: <i>Technologia robót budowlanych</i> . Politechnika Warszawska, Warszawa 2010. 4. Tomana A.: <i>BIM – Innowacyjna technologia w budownictwie</i> . Podstawy, standardy, narzędzia. Wydawnictwo IPB, Warszawa 2016		
Supplementary references:	1. Runkiewicz L.: <i>Warunki Techniczne Wykonania i Odbioru Robót Budowlanych nr A5/2013. Część A: Roboty ziemne i konstrukcyjne, zeszyt 5: Konstrukcje betonowe i żelbetowe</i> . Warszawa 2013. 2. Lenkiewicz W.: <i>Technologia Robót Budowlanych</i> . Wydawnictwo Naukowe PWN, Warszawa 2010. 3. Cooke R.: <i>Building in the 21 st Century</i> . Blackwell Publishing ,Londyn 2007.		
Learning outcomes	Methods of assessing learning outcomes	type of class	
EK1	Performing exercises tasks.	Ex	
EK2	Written exam.	Ex	
EK3	Exercise tasks.	Ex	
EK4	Exercise tasks. Written exam.	Ex	
EK5	Wykonanie zadań ćwiczeniowych.	Ex	
EK6	Written exam.	Ex	
Implementing entity:		Group instructors:	mgr inż. Sylwia Anna Borowska
Date:	2019-09-27	Coordinator:	mgr inż. Nina Szklennik, mgr inż. Sylwia Anna Borowska,