Faculty of Civil and Environmental Engineering				
Study programme:	**Civil Engineering**	Degree level: full-time/part-time programme:	**Master's degree full-time programme**	
Specialization		Diploma path:	**-**	
Module name:	**Monolithic construction**			
Module type:	**obligatory**	Semester: **I**	ECTS **2**	Module ID: **L01311**
No. of hrs in semester:	L - 15 C - 0 LC- 0 P- 15 SW- 0 S- 0			
Prerequisites:	*Complete with prerequisites or "-"*	*Special concrete and recycling of concrete structures, Building technology part I, Concrete technology*		
Teaching methods:	*lecture, project*	*Assessment:*	*Evaluation must be relevant to the intended learning outcomes*	
		lecture - written exam, project - completion, discussion of the project; evaluation from the presentation to the select subject		
Aims and objectives:	*Developing the abilities of understanding of appearing processes in monolithic works. Consolidating and the extension of knowledge about the rules of selection of machines and devices for the completion less and more complicated elements in monolithic technology. Developing competence in planning the process of monolithic work.*			
Module content:	*Features of the monolithic building construction. Modern systems of formwork (e.g. losted, climbing formwork systems ACS). Reinforcing concrete structures. Concreting monolithic structures. Distant and close transport of concrete mix. Concrete care. Recycling of concrete mixture* *Project - comparative analysis of the variant solutions of the formwork systems for chosen concrete element, presentation to the select subject*			

Learning outcomes	*Student that passed the module:*	*Relevance to the programme learning outcomes*
LO1	identifying the process of monolithic work	K_B2_W01, K_B2_W10, K_B2_W11
LO2	designing and analysing the implementation process of monolithic work	K_B2_W13, K_B2_U13
LO3	selecting optimal formwork to the forming of chosen concrete elements	K_B2_W05, K_B2_W06, K_B2_W08, K_B2_W16
LO4	knows modern technologies and devices for the completion of the monolithic building construction	K_B2_W17, K_B2_W18
LO5	analysing the effectiveness: the cost and the time of work by variant sets of machines and formwork	K_B2_U12, K_B2_U13, K_B2_U16
LO6	predicts posibilities of later recycling of monolithic structures in the aspect of the protection of the natural environment	K_B2_W15, K_B2_K02

ad	lecture attendance	15 x 1h =	15
	participation in classes, laboratory classes, etc.	15 x 1h =	15
	preparation for classes, laboratoratory classes, projects, seminars, etc.	-	-

student workloa	work on projects, reports, etc.	-	-
	participation in student-teacher sessions related to the class / seminar / project	-	2
	implementation of project tasks	-	10
	preparation for and participation in exams/tests	-	10
	preparation for project	-	3
		TOTAL:	55
quantitative indicators	Student workload - activities that require direct teacher participation 15h+15h+2h+2h=34h	34	ECTS
			1,5
	Student workload - practical skills activities 15h+2h+10h+3h=30h	30	2
basic references:	*1. Neville, A.M. Concrete technology, Harlow: Prentice Hall, 2010* *2. Kurdowski W. Cement and Concrete Chemistry, Springer, 2014* *3. Advanced Concrete Technology 3, Edited by Newman J., London, UK, 20034. Day K.W, Aldred J., Hudson B. Concrete Mix Design, Quality Control and Specification, Fourth Edition, CRC Press, 2013*		
supplementary references:	*Articles, papers, websites, catalogues modern formwork*		

learning outcomes	*methods of assessing learning outcomes*	type of class (if more than one) where the outcomes are assessed
LO1	evaluating the student's lecture, evaluating the student's project disscussion	L, P
LO2	evaluating the student's lecture, evaluating the student's project	L, P
LO3	evaluating the student's lecture, evaluating the student's project	L, P
LO4	evaluating the student's lecture	L
LO5	evaluating the student's lecture, evaluating the student's project disscussion	L, P
LO6	evaluating the student's lecture, evaluating the student's project disscussion	L, P
LO7		
LO8		

Department:	Department of Materials, Technology and Building Organisation	Group instructors:	dr inż. Edyta Pawluczuk
Date:	02.05.2013	Coordinator:	dr inż. Edyta Pawluczuk

L - lecture C - class LC - laboratory class P-project
SW - specialization workshop S - seminar