

Faculty of Civil and Environmental Engineering					
Study programme:	<b>Civil Engineering</b>	Degree level:	part- <b>Master's degree</b>	time programme:	
Specialization	<b>R&amp;UOB</b>	Diploma path: -			
Module name:	Advanced technologies of building materials and prefabricated elements				
Module type:	<b>elective</b>	Semester: <b>2</b>	ECTS <b>6</b>	Module ID:	<b>L22242</b>
No. of hrs in semester:	L - 30	C -	LC- 30	P- 30	SW- S-
Prerequisites:	<i>Building materials, Concrete technology, General construction</i>				
Teaching methods:	<i>lecture, laboratory class, project</i>	Assessment:	<i>Evaluation must be relevant to the intended learning outcomes</i>		
		Lecture - written exam, laboratory - the task of research, writing reports on the implementation of the task, tests, project - verification, the defence, presentation and discussion of the project			
Aims and objectives:	<i>To familiarize students with high-tech building materials production and prefabricated elements. Teaching methods for calculating the demand for materials and resources, and the preparation and verification of patterns of production process technology. Training the skills of critical selection of technical and technological solutions.</i>				
Module content:	<i>Issues of industrial building elements production. Technology of reinforced concrete precast units production. Technology of building ceramics production. Technology of cellular concrete elements production. Technology of calcium silicate elements production. Technology of metallic prefabricated elements production. Technology of timber building elements.</i>				
Learning outcomes	<i>Write min. 4, max. 8 learning outcomes in the following order: knowledge - skills - competences. Each learning outcome must be verifiable.</i>			<i>Relevance to the programme learning outcomes</i>	
LO1	Ss classify, identify and discuss the processes in detail			K_B2_W01, K_B2_W05, K_B2_W17, K_B2_U20	
LO2	Ss discuss and select the machinery and equipment in the production process			K_B2_W05, K_B2_W17, K_B2_W18, K_B2_U20	
LO3	Ss prepare and analyze the flow diagram of the production process			K_B2_W01, K_B2_W05, K_B2_W17	
LO4	Ss identify and calculate the demand for raw materials			K_B2_U19	
LO5	Ss design and verify operations of manufacturing processes			K_B2_U15, K_B2_U19	
LO6	Ss plan, conduct and critically interpret the results of laboratory tests			K_B2_U10, K_B2_U19	
LO7	Ss are able to interpret and critically evaluate information obtained from the Internet and other sources of data bases			K_B2_U05	
LO8	Ss are able to work in a team			K_B2_K03, K_B2_K04	

student workload	lecture attendance	15 x 2h =	30
	participation in classes, laboratory classes, etc.	15 x 4h =	60
	preparation for laboratory classes		12
	work on projects, reports, etc.		15
	participation in student-teacher sessions related to the class / seminar / project	7x 1h =	7
	implementation of project tasks	15 x 4h =	30
	preparation for and participation in exams/tests	30h	30
	preparation for projects		
		TOTAL:	
quantitative indicators	Student workload - activities that require direct teacher participation	100	ECTS 4
	Student workload - practical skills activities	124	4
basic references:	1) <i>Procesy przemysłowe w budownictwie mieszkaniowym</i> . Arkady. Warszawa 1980. 2) Szymański E.: <i>Technologia materiałów budowlanych-działy wybrane</i> . Wydawnictwo Politechniki Białostockiej, Białystok, 2003. 3) Bołtryk M., Lelusz M.: <i>Technologia konstrukcji prefabrykowanych</i> . Wydawnictwo Politechniki Białostockiej, Białystok, 2004.		
supplementary references:	1) Skalamowski W.: <i>Technologia materiałów budowlanych</i> . Arkady, Warszawa, 1972. 2) Bołtryk M., Gusiew B.: <i>Technologia formowania prefabrykatów betonowych</i> . Wydawnictwo Politechniki Białostockiej, Białystok 1990. 3) Jatymowicz H., Siejko J., Zapotoczna-Sytek G.: <i>Technologia autoklawizowanego betonu komórkowego</i> . Arkady, Warszawa 1980. 4) <i>Ceramics International</i> , Elsevier Science. 5) <i>Construction and Building Materials</i> . Elsevier Science.		
learning outcomes	<i>methods of assessing learning outcomes</i>	type of class (if more than one) where the outcomes are assessed	
L01	written exam of lecture, the descriptive part of the project, presentation and defence of the project	L, P	
L02	written exam of lecture, the descriptive part of the project, part of the Graphics and defence project	L, P	
L03	the descriptive part of the project, the project revision	P	
L04	the computational part of the project, the project verification	P	
L05	verification and defence of the project, laboratory reports	P, LC	
L06	laboratory reports	LC	
L07	verification and defence of the project, laboratory reports	P, LC	
L08	participation in class - the implementation of team task	LC	
Department:	Group instructors:	prof. dr hab. inż. Michał Bołtryk, dr inż. Małgorzata Lelusz	
Date:	12.02.2012	Coordinator:	dr inż. Małgorzata Lelusz

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