

Faculty of Civil and Environmental Engineering				
Study programme:	Civil Engineering		Degree level: Engineering degree full-time/part-time programme: Full-time	
Specialization:	-		Diploma path: -	
Module name:	Road-building		Module ID:	B04330
Module type:	Obligatory	Semester: 4	ECTS ¹⁾	3
No. of hrs in semester:	L - 15 C- 0 CL - 15 P - 15 WS - 0 S - 0			
Complete with prerequisites or "-"	Foundations of engineering communication			
Aims and objectives:	To familiarize students with the materials used in road construction and issues including problems associated with the construction of roads.			
Assessment:	Lecture - written tests; project - correction, the protection, presentation and discussion of the project; laboratory class - evaluation of reports, verification of preparation for classes			
Module content:	<i>Complete with module content:</i> Fundamentals of design and construction of road pavements. General issues of execution of road earthworks. Elements of road drainage. Technological aspects of the implementation of the layers of road pavement construction. Technology of production of road materials. Laboratory determinations of the basic properties of road materials.			
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	identifies the problems associated with road construction		K_B1_W04, K_B1_W07, K_B1_U06 K_B1_U16	
LO 2	identifies the machinery and equipment in the process of building the road structure		K_B1_W08, K_B1_W11, K_B1_U18	
LO 3	draw up a production process flowsheet road materials		K_B1_W08, K_B1_U13, K_B1_U18	
LO 4	familiar with the basic design of asphalt mixes		K_B1_W11, K_B1_U16	
LO 5	able to perform basic laboratory tests of road materials		K_B1_W07, K_B1_U08	
student workload	lecture attendance		15 x 1h =	15
	participation in classes, laboratory classes, etc.		15 x 2h =	30
	preparation for classes, laboratory classes, projects, seminars, etc.			4
	work on projects, reports, etc.		14 x 0,5h =	7
	participation in student-teacher sessions related to the class /seminar / project		5 x 1h =	5
	implementation of project tasks		4 x 1h =	4
	preparation for and participation in exams/tests			10
	preparation for and participation		15 x 1h =	15

		RAZEM: ¹⁾	90
quantitative indicators	Student workload - activities that require direct teacher participation		ECTS ^{4,5)}
		53	2
	Student workload - practical skills activities	70	2,5
basic references:	1. Piłat J., Radziszewski P.: "Nawierzchnie asfaltowe"; WKiŁ, Warszawa, 2010. 2. Głazewski M., Nowocien E., Piechowicz K.: Roboty ziemne i rekultywacyjne w budownictwie komunikacyjnym, WKiŁ, Warszawa, 2010. 3. Rozporządzenie MTiGM z dnia 2.03.1999r. w sprawie warunków technicznych, jakim powinny odpowiadać drogi publiczne i ich usytuowanie. Dz.U.Nr 43, poz. 430. 4. Ministerstwo Infrastruktury, IBDiM: "WT-2 - Nawierzchnie asfaltowe na drogach krajowych", Warszawa, 2010 5. Ministerstwo Infrastruktury, IBDiM: "WT-1 – Kruszywa do mieszanek mineralno-asfaltowych i powierzchniowych utwardzeń na drogach krajowych", Warszawa, 2010. 6. Edel R.: Odwodnienie dróg, WKiŁ, Warszawa, 2010		
supplementary references:	3. Lay M.G.: The handbook of road technology, 2009		
learning outcomes	<i>methods of assessing learning outcomes</i>	type of class (if more than one) where the outcomes are assessed	
LO1	written test lecture, execution and completion of the project	L, P	
LO 2	written test lecture	L	
LO 3	written test lecture	L	
LO 4	written test lecture, engineering, defense and discussion of the project, laboratory tests, performance reports, laboratory exercises	L, LC, P	
LO 5	written test lecture, laboratory tests, performance reports, laboratory exercises, assessment of laboratory	L, LC	
Department:	Division of Road Engineering	Group instructors:	dr inż. Ewa Ołdakowska, dr inż. Marta Wasilewska, mgr inż. Paweł Gierasimiuk
Date:	18.01.2012	Coordinator:	dr inż. Andrzej Plewa