

COURSE DESCRIPTION CARD

Białystok University of Technology Faculty of Civil Engineering and Environmental Sciences										
Field of study								Degree level and programme type		
Specialisation/ diploma path	-							Study profile	academic profile	
Course name	Road Building Engineering							Course code	IS-FCEE-00005S	
								Course type	Erasmus	
Forms and number of hours of educational activities	L	C	LC	P	SW	FW	S	Semester	summer	
	15		15	15				No. of ECTS credits	3	
Entry requirements	Basics of road engineering									
Course objectives	<ol style="list-style-type: none"> 1. Familiarising students with the materials used in road pavement. 2. Acquiring the ability to perform basic tests of road materials and interpretation of their results. 3. Acquiring the ability to design of asphalt mixtures. 4. Acquiring the ability to design of road pavement. 5. Transferring new solutions used in the construction of road pavements taking into account sustainable development. 									
Course content	<p>Lecture: Fundamentals of designing and building road surfaces. General issues of road earthworks. Elements of road drainage. Technological aspects of making layers of road pavement structures. Technology of production of road materials.</p> <p>Project: Designing the structure of the road surface. Designing the mineral-asphalt mixture. Designing reinforcement of the road surface structure.</p> <p>Laboratory classes: Basic tests of road aggregates. Basic testing of bitumens. Taking samples from mineral-asphalt mixtures.</p>									
Teaching methods	informative lecture, problem lecture, project classes, laboratory exercises									
Assessment method	Lecture – written exam;									

	Laboratory classes – evaluation of student's test reports and preparation for the classes, written test; Project – evaluation of student's projects and preparation for the classes		
Symbol of learning outcome	Learning outcomes	Reference to the learning outcomes for the field of study	
L01	Student characterizes road materials	K_B1_W04, K_B1_U12, K_B1_K01,	
L02	The student conducts basic road materials research and analyzes the results	K_B1_W04, K_B1_U04	
L03	Student designs asphalt mixtures and road pavements	K_B1_W04, K_B1_W05, K_B1_U04, K_B1_U05, K_B1_U08, K_B1_K02,	
L04	The student knows new road construction solutions	K_B1_W09, K_B1_U02, K_B1_K01,	
L05	Student can use internet sources and work in team	K_B1_U01, K_B1_U12, K_B1_U14,	
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
L01	written exam, evaluation of student's test reports and preparation for the classes	L, LC, P	
L02	evaluation of student's test reports and preparation for the classes, written test	LC	
L03	evaluation of student's test reports and preparation for the classes, evaluation of student's projects and preparation for the classes, written test	LC, P	
L04	written exam	L	
L05	evaluating student's performance in classes	LC, P	
Student workload (in hours)		No. of hours	
Calculation	participation in lectures	15	
	participation in classes, laboratory classes, etc.	30	
	preparation for classes, projects,	30	
	implementation of project tasks	30	
	participation in student-teacher sessions related to the classes	5	
	preparation for and participation in exams/tests	10	
	TOTAL:	120	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		50	2,0

Student workload – practical activities		90	3,6
Basic references	Krzysztof Blazejowski „Stone Matrix Asphalt: Theory and Practice" CRC Press 2016 James G. Speight „Asphalt Materials Science and Technology"; Butterworth-Heinemann, 2015; Norbert J. Delatte, „Concrete Pavement Design, Construction, and Performance, Second Edition"; CRC Press; 2014; Athanassios Nikolaides, Highway Engineering: „Pavements, Materials and Control of Quality", CRC Press, 2014.		
Supplementary references	Animesh Das, Analysis of Pavement Structures, CRC Press, 2014, Orlen Asphalt: "Bitumen handbook", 2016.		
Organisational unit conducting the course	Department of Geotechnics, Roads and Geodesy	Date of issuing the programme	
Author of the programme	dr inż. Paweł Gierasimiuk, dr inż. Marta Wasilewska	23.03.2023	

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