

Faculty of Mechanical Engineering / ROAD TRAFFIC / Traffic modeling and planning

Course:	Traffic modeling and planning						
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exer cises+Laboratory)			
12276	Optional	2	6	2+2+0			
Programs	ROAD TRAFFIC						
Prerequisites	Unconditioned						
Aims	The purpose of this course is to familiarize students with terminology and problems in the field of traffic planning, approaches and principles to traffic planning, methods of data collection and processing, as well as developing models for predicting transport demands and needs of the population in urban areas.						
Learning outcomes	After passing the exam in this course, students will be able to: 1. Understand the terminology and definitions used in traffic planning; 2. Understand the basic patterns, effects and consequences of mobility; 3. Distinguish principles and approaches in traffic planning; 4. Critically consider the traffic development policy; 5. Analyze problems and define the situation in the field of traffic planning; 6. Implement management measures to improve traffic in an area; 6. Apply methods of data collection and processing important for traffic planning; 7. Develop models for predicting transport demands; 8. Simulate traffic flows in the software.						
Lecturer / Teaching assistant	Asst. Prof. Boško Matović						
Methodology	Lectures, exercises, consultations.						
Plan and program of work							
Preparing week	Preparation and registration of the semester						
I week lectures	Introduction to traffic planning						
I week exercises	Introduction to traffic planning						
II week lectures	Traffic planning process						
II week exercises	Traffic planning process						
III week lectures	Traffic investigation and analysis of traffic problems						
III week exercises	Traffic investigation and analysis of traffic problems						
IV week lectures	Traffic data collection and analysis of the traffic circumstances						
IV week exercises	Traffic data collection and analysis of the traffic circumstances						
V week lectures	Development of measures to improve the traffic system						
V week exercises	Development of measures to improve the traffic system						
VI week lectures	Determining the effects of measures - forecasting						
VI week exercises	Determining the effects of measures - forecasting						
VII week lectures	Evaluating the effects of spatial planning measures - forecasting						
VII week exercises	Evaluating the effects of spatial planning measures - forecasting						
VIII week lectures	Colloqium 1						
VIII week exercises	Colloqium 1						
IX week lectures	Methods of evaluating variant solutions and examples of traffic data collection						
IX week exercises	Methods of evaluating variant solutions and examples of traffic data collection						
X week lectures	Introduction to traffic modeling						
X week exercises	Introduction to traffic modeling						
XI week lectures	Trip generation models						
XI week exercises	Trip generation models						
XII week lectures	Trip distribution models						
XII week exercises	Trip distribution models						
XIII week lectures	Modal split models						



ECTS catalog with learning outcomes University of Montenegro

-									
XIII week ex	ercises	Modal split models							
XIV week led	tures	Traffic assignment models							
XIV week ex	ercises	Traffic assignment models							
XV week lec	tures	Final exam							
XV week exe	ercises	Final exam							
Student wo	orkload	Weekly 5 ECTS x $40/30 = 6$ hours and 40 minutes Structure: 2 hours of lectures 2 hours of tutorials 2 hours and 40 minutes of self-learning During semester Lectures and final exam: (6 hours and 40 minutes) x 16 weeks = 106 hours and 40 minutes Necessary preparations before semester beginning: (administration, enrollment, validation) 2x5 hours and 10 minutes=10 hours and 20 minutes Total hours of the course: $5x30=150$ hours Additional work: preparation for makeup exam and makeup exam 33 hours Load structure: 106 hours and 40 minutes (Schooling)+10 hours and 20 minutes (preparation)+33 hours (additional work)							
Per week			Per semester						
6 credits x 40/30=8 hours and 0 minuts 2 sat(a) theoretical classes 0 sat(a) practical classes 2 excercises 4 hour(s) i 0 minuts of independent work, including consultations			Classes and final exam: 8 hour(s) i 0 minuts x 16 =128 hour(s) i 0 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 8 hour(s) i 0 minuts x 2 =16 hour(s) i 0 minuts Total workload for the subject: 6 x 30=180 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 36 hour(s) i 0 minuts Workload structure: 128 hour(s) i 0 minuts (cources), 16 hour(s) i 0 minuts (preparation), 36 hour(s) i 0 minuts (additional work)						
Student obligations			Attendance to lectures and exercises; Completed seminar paper.						
Consultatio	ons			Every working day (8:00-16:00)					
Literature			 De Dios Ortúzar, J., & Willumsen, L. G. (2024). Modelling transport. John Wiley & Sons. 2. Lep, M., Mesarec, B., Sever, D., & Čerpes, I. (2015). Planiranje prometa. Fakulteta za gradbeništvo. 3. Bliemer, M. C., Mulley, C., & Moutou, C. J. (Eds.). (2016). Handbook on transport and urban planning in the developed world. Edward Elgar Publishing. 4. Яkimov, M., & Trofimenko, Ю. (2017). Transportnoe planirovanie: formirovanie əffektivnыh transportnыh sistem krupnыh gorodov. Litres. 5. Đorić, V., Petrović, D., Ivanović, I., & Jović, J. (2018). Planiranje saobraćaja - analiza transportnih zahteva. Univerzitet u Beogradu, Saobraćajni fakultet. 						
Examination methods			Oral and written examination. Attendance: 10 points; Seminar paper: 10 points; I colloquium30 points; II colloquium3030 points; Final exam: 20 points.						
Special remarks									
Comment									
Grade:	F		E	D	С	В	А		
Number of points	less than 50 points		greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points		