

Study program: Civil Engineering			
Course: Road Design 1			
Professor/assistant: PhD Dragan Ž. Perić / Milan Protić			
Status of course: compulsory			
ECTS credits: 6			
Pre-requisites: none			
Aims of the course: The main aim of the course is to prepare a student to: <ul style="list-style-type: none"> - acquire the basic principles in road design, - acquire the basic knowledge about the elements of horizontal and vertical curves of the road, and the elements of cross sections, - apply the acquired knowledge in solving practical examples. 			
Learning outcomes: After successfully finishing the course, a student is capable of: <ul style="list-style-type: none"> - calculating the horizontal axis of road elements, - calculating the vertical axis of roads elements, - calculating the elements of the road cross sections, - using modern software packages for development of project documentation, - interpreting projects and applying the obtained knowledge during works. 			
Syllabus: <u>Theoretical part</u> General concepts of traffic: the concept of traffic, traffic and transport means, types of traffic, characteristics of certain types of traffic. Roads: historical road development, importance and classification of roads. Projected parameters: projected traffic, projected speed, projected vehicles. Traffic profile and free profile. Elements of the horizontal axis of the road: directions, circular curves, transient curves and a cross slope. Elements of the vertical axis of the road: longitudinal tilt, vertical curves, sight distance. Elements of the cross-sectional profile of the road: lane for driving and a stop lane. Bankings, rgol, bera, dividing strip, curbs, protective fences and hulls of the hull. Crossroads: reinforcement and division. Areas and lengths of the intersection. Elements of drainage of roads. Maintenance of roads. Computer design. Getting to know the design programs. Urban roads: functional classification, planning characteristics, project elements, programming conditions for design, types of geometric cross sections of the primary urban road networks. <u>Practical part</u> Solving practical examples from areas covered in lectures and continuous evaluation through the production of seminar papers. Exercise no. 1 - calculation of the elements of the horizontal axis of the road. Exercise no. 2 - calculation of the elements of the vertical axis of the road. Exercise no. 3 - calculation of the elements of the cross-sectional profile of the road. Practical instruction at field facilities. Road design using the "Survey" and "Pythagoras" software systems.			
Literature: <ol style="list-style-type: none"> 1. Cvetanović, A., <i>Osnovi puteva</i>, Naučna knjiga, Beograd, 1989. 2. Uzelać, Đ., <i>Putevi i gradske saobraćajnice</i>, FTN, 2015. 3. Zlatanović, M., Matejević, B., <i>Osnovi saobraćajnica – zbirka reš. zad. sa izv. iz teor.</i>, GAF, Niš, 2005. 			
Number of active classes			Other forms of teaching:
Lectures: 3	Practical classes: 2	Laboratory classes: 0	
Teaching methods: Interactive classes incl. solving practical examples.			
Grading system (maximum 100 points), grading scale from 5 to 10: below 51 points grade 5, grade 6 from 51-60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91-100 points.			
Pre-commitments	points	Final exam	points
activity during lectures and practical	10	written exam	30
colloquium(s)	10 + 10	oral exam	20
seminar paper(s)	20		
Sum	50	Sum	50