

<b>Study program: Civil Engineering</b>			
<b>Course: Concrete Structures</b>			
<b>Professor/assistant: PhD Nenad Stojković / Milan Protić</b>			
<b>Status of course: compulsory</b>			
<b>ECTS credits: 7</b>			
<b>Pre-requisites: none</b>			
<b>Aims of the course:</b> The main aim of the course is to prepare a student to: <ul style="list-style-type: none"> <li>- apply in practice basic principles of design of RC structural elements;</li> <li>- apply in practice the knowledge on constructing RC buildings;</li> <li>- solve practical problems in the field of design and building of RC structures.</li> </ul>			
<b>Learning outcomes:</b> After successfully finishing the course, a student is capable of: <ul style="list-style-type: none"> <li>- selecting appropriate material quality of materials in the process of design of RC structures;</li> <li>- determining mechanical properties of component materials;</li> <li>- performing preliminary dimensioning of RC elements;</li> <li>- performing the load analysis in RC structures;</li> <li>- performing structural analysis and determining the relevant loading case;</li> <li>- dimensioning of RC elements applying ULS theory;</li> <li>- making the reinforcement detailing drawings.</li> </ul>			
<b>Syllabus:</b> <u>Theoretical part</u> The advantages and disadvantages of RC structures. Mechanical properties of component materials. Stress-strain diagrams of concrete and steel. Basic principles of ULS. Partial safety factors. Dimensioning of RC elements under the influence of: bending moment, axial and shear force. Basic principles of SLS. Reinforcement detailing. <u>Practical part</u> Application of theoretical basis on practical examples. Solving practical problems. Performing the design of RC structure in the form of a project assignment (manually or by using relevant software)			
<b>Literature:</b> <ol style="list-style-type: none"> <li>1. Najdanović D., <i>Betonske konstrukcije</i>, Orion Art – Građevinsk fakultet Belgrade, 2009.</li> <li>2. Todorović J., <i>Betonske konstrukcije</i>, Visoka građevinsko-geodetska škola, Belgrade, 2008.</li> <li>3. Radosavljević Ž., Bajić D., <i>Armirani beton 3</i>, Građevinska knjiga, Belgrade, 2008.</li> </ol>			
<b>Number of active classes</b>			<b>Other forms of teaching:</b>
Lectures: 2	Practical classes: 3	Laboratory classes: 1	
<b>Teaching methods:</b> Interactive classes incl. solving practical problems.			
<b>Grading system</b> (maximum 100 points), <b>grading scale</b> 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.			
<b>Pre-commitments</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
activity during lectures and practical	10	written exam	30
colloquium(s)	10 + 10	oral exam	20
seminar paper(s)	20		
<b>Sum</b>	<b>50</b>	<b>Sum</b>	<b>50</b>