

<b>Study program: Road Traffic</b>			
<b>Subject name: Resistance of Materials</b>			
<b>Teacher: dr Slobodan J. Stefanović</b>			
<b>Subject status:</b> Compulsory			
<b>Number of ECTS:</b> 6			
<b>Conditions:</b> None			
<b>Subject objective</b> Study of stress and strain properties of girder stresses as well as girder dimensioning.			
<b>Subject outcome</b> Dimensioning of girders and structural elements at different forms of stress.			
<b>Subject content</b>			
<i>Theory classes</i>			
Introduction. Stresses. Deformations, stresses and dilatations under axial stress. Hooke's law. Sizing of rods. General case of flat stress. Determination of main voltages. Tightening and pressure in two directions. Shear. Bending of circular and circular-annular cross-section beams. Pure bending and bending forces. Distribution of normal and tangential stresses in the cross section of the girder. Moments of inertia of flat solid girders. Beams of equal bending stresses. Main stresses of bent beams. Bending. Eccentric pressure. The core is cut.			
<i>Practice classes</i>			
Exercises and examples of axially loaded rods and elements. Development of axial stress tasks due to its own weight, statically indeterminate cases. Solving shear and stress tasks in two directions. Dimensioning of beams of circular and circular-annular cross section. Determination of normal and tangential stresses, statically determined beams, loaded on bending. Calculation of resistance moments of straight sections and drawing of voltage distribution diagrams. Solving oblique bending tasks, determining the neutral axis. Making tasks of beams loaded on buckling. Dimensioning of beams of circular and circular-annular cross section. Solving problems from the core of the intersection.			
<b>Literature:</b>			
1. С. Стаменковић, С. Стефановић, Б. Цветановић, „Отпорност материјала“, Висока техничка школа струковних студија, Ниш, 2009.			
2. С. Стефановић, „Отпорност материјала“, Висока школа примењених струковних студија, Врање, 2011.			
3. П. Козић, „Отпорност материјала“, Машински факултет, Ниш, 2003.			
4. С. Стаменковић, Д. Спасић, „Отпорност материјала – Збирка решених задатака“, Виша техничка школа, Ниш, 1995.			
<b>Number of active classes</b>	<b>Theory classes: 30</b>		<b>Practice classes: 30</b>
<b>Teaching methods</b> Oral presentation method, conversation method, graphic work method and demonstration method.			
<b>Knowledge assessment (maximum number of points 100)</b>			
<b>Pre-exam obligations</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
activity during the lectures	<b>5</b>	written exam	<b>30</b>
practice classes	<b>5</b>	oral exam	<b>-</b>
colloquium/s	<b>50</b>		
seminar/s	<b>10</b>		