

Study program : Mechanical Engineering			
Type and level of studies: Master academic studies			
<b>Course unit: Theory of Elasticity</b>			
<b>Teacher in charge : Ivan M. Miletić</b>			
Language of instruction: <b>English</b>			
ECTS: 6			
Prerequisites: None			
Semester: Winter Semester			
<b>Course unit objective</b> Enabling student for solving problems from the area of the elasticity theory and for applying the acquired knowledge in practice in solving problems of the non-circular cross-sections torsion and basic problems from the plates and from the shell theory.			
<b>Learning outcomes of Course unit</b> After passing the final exam from this course students will: - Have a knowledge of the higher theoretical notions from the area of stresses, strains and planar problems; - Be able to determine the sizes and load carrying capacity of the non-circular columns loaded in torsion; - Know the principles of the calculations of plates and shells.			
<b>Course unit contents</b> <i>Theoretical classes</i> Introduction - Stresses and strains. Generalized Hooke's law. Plane stress and plane strains states. Planar problems in Cartesian frame. The strain energy method. 3-D problems in Elasticity theory. Basic theory of plates. Basic theory of shells. <i>Practical classes</i> Problems solving, homeworks, tests and colloquia. (Same areas as for theoretical lecturing)			
<b>Literature</b> Timoshenko, S, and J.N. Goodier, "The Theory of Elasticity", McGRAW-HILL BOOK COMPANY, Inc, 1951, Timoshenko, S, and S. Woinowsky-Krieger, "Theory of plates and shells" McGRAW-HILL BOOK COMPANY, Inc, 1959, Landau, L. D., and E. M. Lifshitz, "The Theory of Elasticity", Pergamon Press, 1970, Starovoitov, E., and F.B. Naghiyev, "Foundations of the Theory of Elasticity, Plasticity, and Viscoelasticity", CRC PRESS, 2012, Seaburg , P.A., and C.J. Carter, "Torsional Analysis of Structural Steel Members", American Institute of Steel Construction, Inc. 2003.			
<b>Number of active teaching hours 75</b>			<b>Other classes</b>
Lectures: 15	Practice: 15	Other forms of classes: <i>mentoring system 20</i>	
Independent work: 25			
<b>Teaching methods</b> Lecturing, Practical work, consultations			
<b>Examination methods ( maximum 100 points)</b>			
<b>Exam prerequisites</b>	<b>No. of points:</b>	<b>Final exam</b>	<b>No. of points:</b>
Student's activity during lectures	<b>5</b>	oral examination	<b>30</b>
practical classes/tests	<b>20</b>	written examination	
Seminars/homework	<b>45</b>		
Project			
Other			
<b>Grading system</b>			
<b>Grade</b>	<b>No. of points</b>	<b>Description</b>	
<b>10</b>	<b>91-100</b>	Excellent	
<b>9</b>	<b>81-90</b>	Exceptionally good	
<b>8</b>	<b>71-80</b>	Very good	
<b>7</b>	<b>61-70</b>	Good	
<b>6</b>	<b>51-60</b>	Passing	
<b>5</b>	<b>&lt; 51</b>	Failing	