

Study program / course: Mechanical Engineering				
Type and level of study: Master academic studies				
Course: Theory of Elasticity				
Lecturers: Nikolić R. Ružica				
Status of course: Elective for module M ₂ , III semester				
Number of ECTS: 6				
Prerequisite: None				
The course objective 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.				
The course outcome 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				
Syllabus Theoretical study 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. Practical classes Problems solving, homeworks, tests and colloquia. (Same areas as for theoretical lecturing)				
Recommended reading 1. Timoshenko, S, and J.N. Goodier, "The Theory of Elasticity", The Civil Engineering Book, Belgrade 1962. (In Serbian) 2. Timoshenko, S, and S. Voinowsky-Kriger, "Theory of plates and shells", The Civil Engineering Book, Belgrade 1962. (In Serbian) 3. Rašković, D., "The Theory of Elasticity", The Scientific Book, Belgrade 1985. (In Serbian) 4.				
The number of hours of active teaching:				Other classes: 1
Theory: 3	Practical classes: 1.4	Other forms of teaching: 0.6	Research study:	
Methods of teaching Lecturing, Practical work, consultations (group and individual)				
Evaluation of knowledge				
Pre-final exam obligations		Points	Final exam*	Points*
Activities during the classes:		5		30
Activities during practical classes:		5		
Homeworks:				
Colloquium (a):		60		
* The final test is taken only by candidates that are not satisfied with their score on colloquia. In that case, only the score on final test is counted for the final grade.				