

Study programme(s): Mathematics (M), Applied Mathematics (MAP)		
Course title: GENERAL PHYSICS (M150)		
Lecturer(s): Fedor Skuban		
Course status: elective		
ECTS points: 5		
Requirements:		
Learning Objectives Through this course, students should acquire and expand their already acquired knowledge in physics. Introduction to fundamental physical laws and phenomena at a higher professional level. Acquisition of necessary prior knowledge and developing the ability to successfully solve computational problems in physics.		
Learning Outcomes After taking this course and mastering its contents, students should have developed: General skills: - understanding the general aspects of physics as a natural science and natural phenomena in the world around us. Subject-specific skills: - Successful implementation of all forms of acquired knowledge in various fields of physics, engineering and technologies.		
Syllabus <i>Theoretical instructions</i> Mechanics: kinematics, dynamics, work, energy, gravity, elasticity, oscillations and waves, fluid mechanics. Thermodynamics: heat, heat transfer, molecular kinetic theory. Electromagnetism: electrostatics, electric currents in metals and liquids, electromagnetism. Optics: basic features of light, geometric optics, wave optics. Atomic physics: quantum properties of electromagnetic radiation, atomic physics. Nuclear physics: characteristics of the atomic nucleus, radioactive decay, nuclear reactions and detection of nuclear radiation. <i>Practical classes</i> Calculation exercises that follow the contents of the theoretical instructions.		
Literature 1. J. Janjić, I. Bikit, N. Cindro, Opšti kurs fizike I i II , Naučna knjiga, Beograd, 1984., 1985. 2. J. Janjić, Ž. Popović, B. Radivojević, Praktikum računskih vežbi iz fizike , Zavod za izdavanje udžbenika, Beograd, 1998. 3. M. Avramov, Fizika , Visoka tehnička škola strukovnih studija Novi Sad, 2007. 4. D. Halliday, R. Resnick, J. Walker, Fundamentals in Physics , Wiley, New York USA, 1996. 5. J.D. Cutnell, K.W. Johnson, Essentials of Physics , Wiley, New York USA, 2006. 6. R.A. Serway, J.W. Jewett, Physics for Scientists and Engineers with Modern Physics , Brooks/Cole, Belmont USA, 210. 7. W. Bauer, G.D. Westfall, University Physics with Modern Physics , McGraw/Hill, New York USA, 2011. 8. G.L.Dimić, M.D. Mitrović, Zbirka zadataka iz fizike – viši kurs D , Naša knjiga, Beograd, 2008.		
Number of active classes	Lectures: 2	Exercises: 2

Teaching methods			
Lectures (2 classes), practical instructions (2 classes of computational exercises).			
Grading (maximum number of points 100)			
Pre-exam obligations	Points	Final exam	Points
colloquia	30	oral exam	70