

Study program: Modern computer technology / Communication technology / Civil engineering			
Course: Physics			
Professor/Assistant: Violeta Stojanović / Violeta Stojanović			
Status of course: compulsory			
ECTS credits: 6			
Pre-requisites: none			
Aims of the course: Introduce students to the major physical phenomena and laws, major methods of scientific opinion, and help them form a scientific view of the world and advancement of modern technology.			
Learning outcomes: After taking the exam, students are trained to understand correctly the laws, principles and categories which enable the proper way of scientific research and better definition of physical reality.			
Syllabus: <u>Theoretical part</u> Mechanics: kinematics of rectilinear and curvilinear motion, basic laws of dynamics, work and energy, statics, the force of gravity, elastic deformations, oscillations, hydrostatics, hydrodynamics. Waves: origin, types, basic elements, propagation rate, equation, sound, intensity, level, range of electromagnetic waves. Heat and thermodynamics: thermal expansion of solids and liquids, molecular – kinetic theory, gases, laws, the equation of ideal and real gas states, thermodynamical processes, laws of thermodynamics, critical points, triple point, heat conversion. Oscillations and waves: origin, types, basic elements, propagation rate, equation, sound, intensity, level, acoustic room, noise. Photometry: photometric units and laws of the lights, photometers. Geometrical optics: laws of reflection and refraction of light, dispersion, reflection, lens, lens image forming, equation of thin lenses, enlargement, magnifying glass, microscope. Physical optics: interference, diffraction and light polarization. <u>Practical part</u> Computational exercises. Laboratory exercises.			
Literature: 1. Jakšić M., Stojanović V., <i>Fizika</i> , Niš, 2009. 2. Jakšić M., Stojanović V., <i>Fizika</i> , VTŠ Niš, 2003. 3. Jakšić M., Stojanović V., <i>Zbirka zadataka iz fizike</i> , VTŠ Niš, 2002. 4. Jakšić M., Stojanović V., <i>Praktikum za vežbe iz fizike</i> , Niš, 1995.			
Number of active classes			Other forms of teaching:
Lectures: 2	Practical classes: 1	Laboratory classes: 1	
Teaching methods: Combination of interactive approach with practical problem solving.			
Grading system (maximum 100 points), grading scale 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.			
Pre-commitments	points	Final exam	points
activity during lectures	10	written exam	-
practical	20	oral exam	40
colloquium(s)	15 + 15		
seminar paper(s)	-		
Sum	60	Sum	40