

Information sheet for the course Physics II

University: <i>Alexander Dubček University of Trenčín</i>					
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>					
Course unit code: <i>PP-P-15</i>			Course unit title: <i>Physics II</i>		
Type of course unit: <i>compulsory</i>					
Planned types, learning activities and teaching methods: <i>Lecture: 2 hours weekly/26 hours per semester of study; face to face</i> <i>Seminar: 1 hour weekly/13 hours per semester of study; face to face</i> <i>Laboratory tutorial: 2 hours weekly/26 hours per semester of study; face to face</i>					
Number of credits: <i>5</i>					
Recommended semester: <i>3rd semester in the 2nd year full-time</i> <i>3rd semester in the 2nd year part-time</i>					
Degree of study: <i>the 1st degree of study (Bachelor's degree)</i>					
Course prerequisites: <i>PP-P-9 Physics I, PP-P-1 Mathematics I, PP-P-8 Mathematics II</i>					
Assessment methods: <i>Current control on each lecture – at least three positive knowledge rating. The writing final exam: A – 75 points, B – 70 points, C – 65 points, D – 60 points, E – 55 points at least.</i>					
Learning outcomes of the course unit: <i>Students have deeper knowledge of electromagnetism physics, laboratory skills, ability to use mathematics to solve electromagnetism problems, critical thinking skills, effective written and oral communications skills.</i>					
Course contents: <i>Introduction to electromagnetism theory, wave-particle nature of matter, quantum nature of microcosm.</i> <i>Mathematical foundations of vector fields.</i> <i>Electric charge, electrostatic field, Coulomb's law.</i> <i>Electric intensity, electric potential and energy of an electrostatic field.</i> <i>Comparisons of electrostatic and gravitational fields, motion in the gravitational and electrostatic field.</i> <i>Wire in electric field, electrostatic induction, electric dipoles, wire capacity, capacity and energy of capacitor.</i> <i>Electric current, Ohm's law, electromotive voltage, solving electric circuits.</i> <i>Kirchhoff's laws, work and power of electric current.</i> <i>Magnetic field, basic laws of magnetism, alternating current.</i> <i>Maxwell theory of electromagnetism, electromagnetic radiation, light, laser.</i> <i>Standard model of elementary particles and forces.</i>					
Recommended of required reading: <i>Feynman, R.: The Feynman Lecturers on Physics I-III, California Institute of Technology-Addison Wesley Longman, 1970, ISBN-10: 0201021153.</i> <i>Young, H. D., Freedman, R. A.: University Physics, Addison-Wesley, New York, 1996.</i> <i>Veis, Š.: Všeobecná fyzika I, Alfa, Bratislava-Praha, 1986.</i> <i>Krempaský, J.: Fyzika, Alfa, Bratislava, 1982.</i>					
Language: <i>Slovak</i>					
Remarks:					
Evaluation history:					
A	B	C	D	E	FX

Lecturers: <i>doc. Mgr. Ivan Kopal, Ph.D.</i>					
Last modification: <i>31.03.2015</i>					
Supervisor: <i>doc. Ing. Ján Vavro, PhD.</i>					