Course Unit Descriptor

Study Programme: Physics			
Course Unit Title: Electromagnetism			
Course Unit Code: F18EM			
Name of Lecturer(s): Full Professor Srđan Rakić			
Type and Level of Studies: Bachelor of Science in Physics / Master of Science in Teaching Physics			
Course Status (compulsory/elective): Compulsory			
Semester (winter/summer): Winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 7			
Prerequisites: None			
Course Aims: Goal of the course is to gain understanding of fundamentals of electricity and magnetism, their some application and measurement method techniques.			
Learning Outcomes: On completion of this module, student should be able to understand basic ideas and reasoning behind the development of basics of electricity and magnetism and its application. Student should also be able to independently solving the theoretical problems and simpliest electrical circuits.			
Syllabus: *Theory* Electric charge and electrostatic field in vacuum. Electrostatic field in presence of conductors and dielectrics. Electric field energy. Stationary and quasistationary currents. Properties of conductors. Electric circuits. Work and power of electric currents. Fields of moving charges. Stationary magnetic field in vacuum and in magnetics. Electromagnetic induction. Electromagnetic oscillations and AC circuits. Magnetic field energy. The electromagnetic field. Solving selected numerical problems. *Practice* Selected experimental exercises: Dielectric permittivity, Ohm's law, Wheatstone bridge, RC-circuit, RLC-circuit, Specific conductivity of fluids, Tangent compass.			
Required Reading: 1. Wolfgang K. H. Panofsky, Melba Phillips Classical Electricity and Magnetism: Second Edition (Dover Books on Physics) (2005). 2. A. N. Matveev, Electricity And Magnetism, Mir publishers Moscow (1986). 3. Richard P. Feynman, Robert B. Leighton, and Matthew Sands, The Feynman Lectures on Physics, Addison–Wesley (1964-2005).			
Weekly Contact Hours:	**Lectures:**3+1	**Practical work:** 2	
Teaching Methods: Lectures, solution of numerical problems, practical exercises.			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	**Final exam**	points

Active class participation	10	written exam	25
Practical work	10	oral exam	45
Preliminary exam(s)	10	…….	
Seminar(s)	-		