Course Unit Descriptor

Study Programme: Power Engineering - Systems			
Course Unit Title: Electromagnetics			
Course Unit Code: EE300			
Name of Lecturer(s): Dejana Herceg			
Type and Level of Studies:Bachelor level			
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: The course objective is that students learn basic things about theoretical and practical properties of the electromagnetic fields, methods of their determination and the fields of their application			
Learning Outcomes: Acquired knowledge will be used in further education, in general and professional courses which follow, as well as for the specific problem solving.			
Syllabus: General concepts about electromagnetic field – Maxwell equations, potentials of electromagnetic field, some general theorems of electromagnetic field: superposition theorem, energy distribution theorem, Poynting theorem, equivalence theorem. Electrostatic field – conductors and dielectrics in electrostatic field, methods for solving electrostatic field. Electric field of time constant currents – Duality of time constant current field with electrostatic field, theorem on characters – shoulder straps, basic concepts on relaxation and diffusion currents. Time constant magnetic field – Duality of time constant magnetic field with electrostatic field, force and torque on the current distribution in the foreign magnetic field, methods for solving the time constant magnetic field. Slow time variable electromagnetic field – definition of the slow time variable electromagnetic field, electromagnetic induction and examples of its application, mutual and self, internal and external inductance, energy and force of static and quasistatic magnetic field, skin effect and proximity effect.			
Required Reading: Relevant literature in English			
Weekly Contact Hours:6	**Lectures:3**	**Practical work:3**	
Teaching Methods: Lectures; Auditory Practice; Computer Practice; Laboratory Practice; Consultations			
Knowledge Assessment (maximum of 100 points):100			

Pre-exam obligations	points	**Final exam**	points
Test	-	Practical part of the exam	-
Test	-	Theoretical part of the exam	-
Test	-		
Colloquim Exam	-		

Colloquim Exam	-		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			