



COURSE: Physics II: Electromagnetism			
ACADEMIC YEAR: 2016/17			
TYPE OF EDUCATIONAL ACTIVITY: Basic			
TEACHER: dr Francesco Esposito			
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Phone: 0971 205164		mobile (optional):	
Language: Italian			
ECTS: 6	n. of hours: 60	Campus: Potenza School of Engineering	Semester: First
EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES Obtain a comprehensive understanding of the fundamental concepts in electricity and magnetism. Obtain analytical skills for solving problems in Electricity and Magnetism.			
PRE-REQUIREMENTS Knowledge of mechanics, mathematical analysis			
SYLLABUS Electrostatics, Magnetostatics, Maxwell equations, Electromagnetic waves.			
DETAILED CONTENT: Electric charge and structure of matter. Point charges and continuous charge distributions. Coulomb force, electric field, electric potential, Gauss's law. Electrical properties of matter: Conductors and insulators, electrical capacity, the electric field in the conductors and dielectrics. Energy associated with the electric field. Electrical resistance, conduction in metals and Ohm's law. Kirckoff's laws. RC circuits. Magnetic field, Lorentz force and the dynamics of electric charges under the action of electromagnetic fields: motion on circular paths, Hall effect. Circulation of the magnetic field, Ampere's law, the solenoid. Energy associated with the magnetic field and electromagnetic field energy. Faraday's law and the phenomena of magnetic induction, inductance and self inductance. RL circuits. RLC circuits. Overview of magnetic properties of matter. Maxwell's equations and electromagnetic waves.			
TEACHING METHODS Theoretical lessons.			
EVALUATION METHODS Written and oral examination Intermediate verifications			
TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL Gettys, Keller, Skove: Fisica 2. McGraw-Hill http://oldwww.unibas.it/utenti/esposito/home.html			
INTERACTION WITH STUDENTS Professor's office hour: Wednesday 9:30 to 11:30 ¹			
EXAMINATION SESSIONS (FORECAST)¹ 13/2/2017, 26/6/2017, 12/9/2017			
EVALUATION BOARD			
SEMINARS BY EXTERNAL EXPERTS YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			

FURTHER INFORMATION