Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
MAT111	Physics I	1	3	0	0	3	5

Prerequisites	
Admission Requirements	

Language of Instruction	French
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	To introduce the fundamental principles and concepts of physics in detail at freshmen level. To build a strong background for physics major as well as showing the necessity and importance of physics for other branches of natural sciences and engineering through applications in real life, and industry and technology.
Content	Electric Fields, Gauss's Law, Electric Potential, Capacitance and Dielectrics, Current and Resistance, Direct Current Circuits, Magnetic Fields, Sources of the Magnetic Field, Faraday's Law, Inductance,
References	Physics For Scientist and Engineers with Modern Physics-Serway-Beichner Sears ve Zemansky's University Physics Physics for Scientists & Engineers, Douglas C.Giancoli

Theory Topics

Week	Weekly Contents
1	Electric Fields, Properties of Electric Charges, Insulators and Conductors, Coulomb's Law, The Electric Field,
2	Electric Field of a Continuous Charge Distribution, Electric Field Lines, Motion of Charged Particles in a Uniform Electric Field
3	Gauss's Law, Electric Flux, Gauss's Law, Application of Gauss's Law to Charged Insulators, Conductors in Electrostatic Equilibrium
4	Electric Potential, Potential Difference and Electric Potential, Potential Differences in a Uniform Electric Field, Electric Potential and Potential Energy Due to Point Charges, Obtaining the Value of the Electric Field from the Electric Potential, Electric potential Due to Continuous Charge Distributions
5	Electric Potential Due to a Charged Conductor,Capacitance and Dielectrics, Definition of Capacitance, Calculating Capacitance, Combinations of Capacitors
6	Capacitors with Dielectrics, Electric Dipole in an Electric Field, An Atomic Description of Dielectrics
7	Midterm
8	Current and Resistance, Electric Current, Resistance and Ohm's Law, Electrical Energy and Power,Direct Current Circuits, Electromotive Force, Resistors in Series and in Parallel, Kirchhoff's Rules, RC Circuits
9	Magnetic Fields, The Magnetic Field, Magnetic Force Acting on a Current-Carrying Conductor
10	Torque on a Current Loop in a Uniform Magnetic Field, Motion of a Charged Particle in a Uniform Magnetic Field, Applications İnvolving Charged Particles Moving in a Magnetic Field
11	Sources of the Magnetic Field, The Biot-Savart Law, The Magnetic Force Between Two Paralel Conductors
12	Ampere's Law, The Magnetic Field of a Solenoid, Magnetic Flux, Gauss's law in Magnetism, Displacement Current and the General Form of Ampere's Law
13	Faraday's Law, Faraday's Law of Induction, Motional emf, Lenz's Law, Induced emf and Electric Fields,
14	Inductance, Self Inductance, RL Circuits, Energy in a Magnetic Field, Mutual Inductance