

Global Learning Semesters

Course Syllabus

Course: PHY-160 General Physics II

Department: Engineering

Host Institution: University of Nicosia, Nicosia, Cyprus



Course Summary		
Course Code	Course Title	Recommended Credit Hours
PHY-160	General Physics II	3
Semester Offered	Contact Hours	Prerequisites
Fall, Spring	70	PHYS-150 General Physics I. Basic concepts and principles of Physics in the area of classical mechanics and familiarization with experimentation.
Department	Level of Course	Language of Instruction
Engineering	Lower Division	English

Course Description

The following topics are covered: Electric charge, Coulomb's law, conductors, insulators. Electric field & lines of electric field. Electric dipole. Gauss' law, electric flux. Electric potential. Capacitance, capacitors in combination. Dielectrics. Electric current, current density, resistance, resistivity, Ohm's law. Electromotive force. Circuit analysis. Magnetic field, magnetic force, magnetic dipole. Ampere's law, Biot-Savart law, force between two parallel conductors, force on a wire carrying current. Current loop as a magnetic dipole. Faraday's law of induction, Lenz's law, induced electric field. Inductance, self-induction, RL circuit. Magnetism, magnets, paramagnetism, ferromagnetism. Electromagnetic oscillations. RLC circuit, resonance. Alternating current, simple AC circuits, series LCR circuit, transformers.

Instructor

Dr Marios Nestoros

Course Aims and Objectives

To introduce students to the basic concepts and principles of Physics in the area of static electricity and electromagnetism and familiarize them with experimenting.

Teaching Methods

The course is delivered through a mixture of lectures, lab presentations, lab tutorials and practical exercises and assignments.

Course Teaching Hours

70 hours (56 hours lectures/presentations + 14 hours laboratory work and demonstrations). The course is delivered during the Fall and Spring semesters in 14 weeks (5 hours/week).

Evaluation and Grading

Homework/Participation:	10%
Test 1:	20%
Test 2:	20%
Final Exam:	40%
Labs:	10%

Readings and Resources

Required Textbook

D. Halliday, R. Resnick and J. Walker, Fundamentals of Physics, Seventh Edition, Wiley, 2001

Recommended Reading

Wolfson R., Pasachoff J., Physics with Modern Physics for Scientists and Engineers, Second Edition, Harber Collins, 1995