Registrar's office

Grande Prairie Regional College

Department of Science

PC 2040 Introductory General Physics III W.94
3(3-0-3)UT(3)
U of A Equivalent - Physics 204
Course Description

Calendar Description: PC 2040 Introductory General Physics III
3(3-0-3) UT (3) FORMERLY PC 305
Wave motion, sound, magnetism. Electromagnetic induction and Faraday's Law. AC circuits. Electromagnetic waves. Geometric optics. Physical optics. Optical instruments.
Prerequisite: **PC 1060**
Corequisite: **MA 1150**

Instructor:	Dr. Jaime P. Santiago J209, 539-2865
Lecture:	MWF 10:00 - 10:50 a.m.
Laboratory:	R 3:00 - 5:50 p.m. J107
Textbook:	Physics, by Douglas C. Giancoli, 3rd Edition, Prentice-Hall
Laboratory Manual:	Physics 204/238 Laboratory Manual Department of Physics, U of A
Assignments:	Weekly problems sets to be handed out later.
Grading:	Problem Sets 15% Laboratory 20% (Student must pass lab to pass course.) Midterm Exam 20% Final Exam 45%

GRANDE PRAIRIE, ALBERTA CANADA T8V 4C4 ★ TELEPHONE (403) 539-2945 ★ FAX (403) 539-2832

MATERIAL

Wave Motion:	types of waves, energy, reflection, refraction, interference, diffraction, standing waves
Sound:	intensity, pressure, strings and pipes, sound quality, beats, Doppler effect, shock waves
Magnetism:	magnetic fields, electric currents, ferromagnetism, solenoids, force on a current, force on a charged particle, Hall effect, galvanometers, motors, loudspeakers, discovery of the electron, cathode ray tubes, mass spectrometer, Ampere's Law, parallel wires, magnetic materials
Electromagnetic Induction:	induced emf, Faraday's Law, Lenz's Law, moving conductor, changing magnetic flux, generators, eddy currents, transformers, inductance, energy, LR circuits, impedance, LRC circuits, resonance
Electromagnetic Waves:	Maxwell's fourth equation, speed of electromagnetic waves, the electromagnetic spectrum, energy in electromagnetic waves, radio and television
Geometrical Optics:	index of refraction, reflection by plane and spherical mirrors, refraction, Snell's Law, total internal reflection, thin lens
Physical Optics:	Huygen's Principle, reflection, refraction, diffraction, Young's double-slit experiment, dispersion, single-slit and grating, spectroscopy, thin films, Michelson interferometer, polarization, optical activity, optical instruments