PHYS 112: Introductory Physics
Course Syllabus - Spring 2006

Instructor: Dr. Kelly Krieble Office: Room 109, Collier Hall of Science Phone: ext. 1437 e-mail: krieblek@moravian.edu	Class: PPHAC 102 M W F 7:50-8:40, T 10:20-11:10 or Th 9:10-10:00 Lab: CHS 105, M or T 12:45-3:45 Office Hours: By appointment

Goals of the Course:

The primary aim of this course is to provide students with a working knowledge of the basic concepts of physics. Students will learn and develop mathematical and physical techniques for solving a wide range of problems. In the laboratory portion of the course students will learn about experimental design and gain experience using a variety of equipment for making physical measurements.

General Information:

It is suggested that you purchase a large 3-ring binder for notes, handouts, homework, and labs. Also, bring books and graphing calculators to class each day.

Required course text: **Physics for Scientists and Engineers**, 6th ed., Serway and Jewett, vol. 2

Course Content and List of Topics:

Topic	*Approximate Time Span*
I. Electrostatics a. Properties of electric charges b. Electric Fields c. Coulomb's law and Gauss's law d. Electric Potential e. Capacitance	4 weeks
II. DC Circuits a. Electric current b. Resistance and Ohm's law c. Kirchhoff's rules d. RC Circuits	2 weeks
III. Magnetostatics a. The magnetic field b. Magnetic force c. Motion of a charged particle in a magnetic field	1 week
IV. Sources of the magnetic field a. The Biot-Savart law b. Ampere's law	1 week
V. Electromagnetism a. Faraday's law of induction b. Inductance	1 week
VI. Geometric Optics a. Reflection and Refraction b. Lenses and Images c. Dispersion	2 weeks
VII. Physical Optics a. Interference b. Diffraction c. Polarization	2 weeks
VIII. Nuclear Physics a. Radioactivity b. Carbon dating c. Fusion and Fission a. Elementary Particles	2 weeks

Grading Policy:

A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = below 60%

Note: It is within the rights of the instructor to apply qualitative judgment in determining grades for an individual assignment or for the course.

Assessment:	**% Weight**
Reading Quizzes	10
Problem Session Participation	5
Lab reports	30
Exams	30
Final Exam	25

Homework Problems and Worksheets: The problem sets are designed to give you practice and experience in solving a wide variety of physics problems. Thus, it is imperative that you work out the problem solutions yourself. You will be expected to participate in the problem sessions, when homework is reviewed.

Reading Quizzes: 5 minute quizzes will be given approximately every other day on the reading assignments.

Lab reports: Refer to the handout on laboratory information.

Exams: There will be three major unit exams throughout the semester. Approximate dates are indicated on the course schedule.

Academic Honesty Policy: All material that you turn in should be your own work, unless specific assignments such as lab reports are designated as group projects. Like all courses at Moravian College, the College's policy on academic honesty will be enforced. Refer to the Student Handbook and the Policy on Academic Honesty and Guidelines for Honesty.

Final comprehensive exam: An exam on all material covered during the semester.

BlackBoard (internet class site):

Link: http://blackboard.moravian.edu/

Various information and announcements will be listed on this site, along with grades. Please endeavor to log in and check this site daily.

Attendance Policy: Students are expected to come to class. To that end, I WILL take attendance, and reserve the right to raise/lower your grade based on your attendance. Should you miss a major event (lab, exam, etc.) you will need a valid excuse form (illness, etc.) to make up the work.

Good luck in the coming year. Should you have any comments about the class during the semester, please feel free to discuss them with me; I will welcome any suggestions for improving the course. Since I am looking for you to do your best work, you should demand excellence from me as well.

Subject to revision.