

| CAPILANO UNIVERSITY COURSE OUTLINE | |
|--|---|
| Term: SPRING 2012 | Course No. PHYS 111 |
| Course: GENERAL PHYSICS II | Credits: 4.0 Section: 01 |
| MIKE FREEMAN Office: FR493 Tel: 604-986-1911 (Ext. 2440) email: mfreeman@capilanou.ca | |

COURSE FORMAT: Three hours of class time, two lab hours plus an additional hour of supplemental activity delivered through on-line or other activities for a 15 week semester, which includes two weeks for final exams.

PRE-REQUISITES: A minimum "C-" grade in PHYS 110; MATH 126 as a pre- or co-requisite.

COURSE OBJECTIVES:

General: To make a student familiar with classical electromagnetism, waves and modern physics, and to provide him or her a sense of the direction of contemporary research.

Instructional: Upon successful completion of this course, the student will be able to solve problems in electromagnetism, waves, and Modern Physics. The student should be able to bring a wide variety of techniques, short of calculus, to bear on physical problems.

REQUIRED COURSE MATERIALS:

Textbook: Giambattista, Richardson, and Richardson. College Physics. 3rd ed. New York: McGraw Hill, 2010.

Supplements: Capilano University Physics 110/111/114/115 Laboratory Manual.
Capilano University Physics Laboratory Notebook.

COURSE CONTENT: (Tentative)

| Topic | Weeks (approx) | Chapter(s) |
|---|----------------|------------------|
| Electrostatics: charge, Coulomb's law, electric field, potential, capacitance | 2.0 | 16:1-6 17 |
| Electric Currents and Circuits: current, Ohm's law, series and parallel circuits, Kirchhoff's rules | 2.0 | 18:1- 8 18:11 |
| Midterm 1 | | |

| Topic | Weeks (approx) | Chapter(s) |
|---|----------------|-------------------------------------|
| Magnetism: magnetic field, magnetic force, sources, Biot-Savart Law, Faraday's law, inductance, transformers | 2.0 | 19:1-8 20:1-7, 9 |
| Waves: definitions, superposition, standing waves, interference, sound, Doppler Effect | 2.0 | 11:1-7, 9, 10 12:1, 3-8 |
| Wave Optics: Huygens' Principle, interference, diffraction | 1.5 | 25:1, 3-7 |
| Midterm 2 | | |
| Modern Physics: Quantum Theory - Planck's hypothesis, photoelectric effect, Bohr atom, wave-particle duality, uncertainty principle; Nuclear and Particle Physics as time permits | 2.0 | 27:1-3, 7 28:1-4 29:1-4, 7, 8 |
| Final Exam | | |

EVALUATION PROFILE:

Final grades for the course will be computed based on the following schedule:

| | |
|-----------------------------------|-------------|
| Midterms (2) | 25% |
| Labs (all labs must be completed) | 20% |
| Assignments & Quizzes | 10% |
| Final Exam | 35% |
| Performance Evaluation | 10% |
| TOTAL | 100% |

A student may be required to produce a medical certificate in order to be given a make-up lab.

In order to pass the course, students must both pass the lab portion **and** receive a minimum total of 27/60 for the midterm and final exam components of the evaluation.

PERFORMANCE EVALUATION:

In the absence of exceptional circumstances, which are at the instructor's discretion, the performance evaluation component of the final grade will be prorated to the rest of the grade. For example, a 10% performance evaluation component would be determined by dividing the remaining mark out of 90 by 9. The most common circumstance justifying an increased performance evaluation mark is a student's improved performance in the final examination relative to the midterm exam(s), which the instructor feels justifies an elevated letter grade.

SUPPLEMENTAL ACTIVITY:

Supplemental activity might be a scheduled tutorial, an on-line activity, a group meeting, or some other activity as indicated by your instructor. Participation in the activity is essential.

GRADING PROFILE: Letter grades will normally be assigned according to the following guidelines:

| | | | |
|--------------|-------------|-------------|------------|
| A+ 90 - 100% | B+ 77 - 79% | C+ 67 - 69% | D 50 - 58% |
| A 83 - 89% | B 73 - 76% | C 62 - 66% | F 0 - 49% |
| A- 80 - 82% | B- 70 - 72% | C- 59 - 61% | |

Students should refer to the University Calendar for the effect of the above grades on grade point average.

OPERATIONAL DETAILS:

University Policies: Capilano University has policies on Academic Appeals (including appeal of final grades), Student Conduct, Cheating and Plagiarism, Academic Probation and other educational issues. Copies of these and other policies are published each term as part of the Registration Guide, and they are always available on the University website.

Attendance: Strongly recommended, as class work and examination success require regular attendance, as does consideration for special arrangements due to missed exams, etc. (see section below).

Labs: In order to obtain credit for PHYS 111, you must register in a lab section and pass the labs. You are required to attend every week. If you wish a lab exemption, you must furnish proof of successful completion of an equivalent lab course at the beginning of the semester. This exemption is at the discretion of the instructor.

Missed Exams and Labs:

Normally, a score of zero will be given for a missed exam, test, quiz, lab, etc. In some exceptional situations, the student will be permitted to write a make-up test, defer the lab to a later date or to replace the score by other marks.

The situations in which a score of zero may be avoided are those for which the student meets **all** of the following conditions:

1. Circumstances are beyond the control of the student which resulted in the exam, test, quiz, lab, etc. to be missed. Such circumstances include serious illness or injury, or death of close family member. They do **NOT** include forgetting about the test, lack of preparation for the test, work-related or social obligations.
2. The student has notified the instructor (or the Pure and Applied Science office staff, if the instructor is not available) about the missed exam, test, quiz, lab, etc.

Such notification **MUST** occur in advance, if possible, or at the latest, on the day of the exam, test, quiz, lab, etc.

3. Proof of the circumstances must be provided. Proof of illness or injury requires a note from a doctor, who may also be consulted.
4. The student has been fully participating in the course up until the circumstances that prevented the writing of the exam, test, quiz, lab, etc. **Fully participating means attending almost all classes and turning in almost all assignments in the course.**

The options offered to the student who meets the four conditions are decided by the instructor. They will not necessarily meet the convenience of the student.

Final Exam Period:

Students should note that the final exam period is from **April 16th to 27th** (includes Saturday, April 21st), and that they can expect to write exams at any time during this period. Individual exam times will not normally be rescheduled because of holidays, work, or other commitments. While efforts are made to spread exams throughout the exam period, an individual's particular course combination may result in exams being scheduled close together, or spread widely through the entire exam period.

Cheating/Plagiarism:

Students caught cheating on a test will normally receive a grade of "F" on the course and may be expelled from the University. Plagiarism (including the copying of any part of assignments, laboratory reports, and essays) is a serious offence and is a form of cheating.

Incomplete Grades:

Incomplete grades ("I") are given only when special arrangements have been agreed upon with the instructor prior to the end of the semester. Since "I" grades are granted only in exceptional circumstances (usually health problems), their occurrence is rare. A student receiving an "I" grade should see the instructor.

Final Letter Grade:

All registered students will receive a final letter grade unless they have officially withdrawn (see the University Calendar for the withdrawal date).

English Usage:

Students are expected to use correct standard English in their written and oral assignments, exams, presentations and discussions. Failure to do so may result in reduced grades in any part of the Evaluation Profile. Please refer to the guidelines provided in the Capilano University Guide to written Assignments (available from the University Bookstore).

Emergency Procedures:

Please read the emergency procedures posted on the wall of the classroom.