

CAPILANO UNIVERSITY COURSE OUTLINE	
Term: FALL 2013	Course No. PHYS 104
Course: PRINCIPLES OF PHYSICS	Credits: 4.0 Section:
INSTRUCTOR: TBA Office: TBA Tel: 604-986-1911 (Ext. TBA) email: tba@capilanou.ca website:	

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: Pre-Calculus 12, or Principles of Math 12 , or BMTH 053/054, or MATH 105. MATH 105 may be taken concurrently.

COURSE OBJECTIVES:

General: The student will gain a better understanding and appreciation of the physical world by becoming familiar with the basic laws of classical mechanics, electricity and optics. The student will be able to apply these laws in explaining some natural phenomena occurring in our everyday life. The student will improve her/his abstract, logical and critical thinking by analyzing qualitatively (conceptually) and solving quantitatively simple problems and performing and analyzing simple experiments.

Student Learning Outcomes:

Upon successful completion of this course, the student should be able to:

- distinguish between important factors that affect the solution of the problem or the outcome of the experiment and less important factors that do not have a significant effect on the results and may be neglected under certain circumstances.
- use graphs and diagrams as aids for visualization and clarification of problems and be able to translate the everyday language of word problems into the language of mathematics.

REQUIRED COURSE MATERIALS:

Textbook: Giambattista, Alan, Betty McCarthy Richardson, and Robert C. Richardson. College Physics. 4th ed. (custom edition). New York: McGraw Hill, 2012.

i>clicker remote: Available from the Capilano University Bookstore
(Rebate coupon enclosed with textbook)

Supplements: Capilano University Physics Laboratory Notebook.

COURSE CONTENT: (Tentative)

Topic	Weeks (approx)	Chapter(s)
Introduction, Measurement, Units, Scalars and Vectors, Vector components, Forces and Newton's Laws of Motion, Weight, Free-Body Diagrams	2	1, 2
One- and two -dimensional kinematics and dynamics, Newton's 2 nd Law, Constant acceleration motion, Free Fall, Apparent Weight, Projectiles, Relative velocity, Circular motion kinematics and dynamics	5	3, 4 5
Work and Energy	1	6
Momentum and Collisions	1	7.1, 7.2, 7.3, 7.4, 7.7
Electrostatics, Electric Circuits	2	16.1, 16.3 16.4, 18.1, 18.2, 18.3, 18.5, 18.6
Light (Geometrical optics, Reflection, Refraction, Imaging with thin lenses)	1	23.1, 23.2, 23.3, 23.4, 23.9
Midterm exams (2) (normally during the 6 th and 10 th weeks)	1	

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 & clicker quizzes	10%
Attendance/clicker exercises	5%
Final Exam	35%
Performance Evaluation	5%
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 4TH HOUR ACTIVITY:

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

GRADING PROFILE:

Letter grades will be assigned according to the following guidelines:

A+ 90 - 100%	B+ 77 - 79%	C+ 67 - 69%	D 50 - 59%
A 85 - 89%	B 73 - 76%	C 63 - 66%	F 0 - 49%
A- 80 - 84%	B- 70 - 72%	C- 60 - 62%	

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 grade), Student Conduct, Cheating and Plagiarism, Academic Probation and other education issues. These and other policies are 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). Attendance mark is determined by your participation in clicker exercises.

Labs:

In order to obtain credit for PHYS 104, 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 Sciences 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 (**dates TBA**), 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.

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 Guide to Writing Assignments (available from the University bookstore).

Emergency Procedures:

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