



School of Arts & Science
PHYSICS DEPARTMENT
PHYS 115-001
Fundamentals of Physics 2
2009S

COURSE OUTLINE

Ω Please note: this outline will be electronically stored for five (5) years only.
It is strongly recommended students keep this outline for your records.

1. Instructor Information

| | | | | |
|-----|---------------|---------------------------------------|--------------------|--|
| (a) | Instructor: | Bob Sedlock | | |
| (b) | Office Hours: | 10:30-11:30 M,T,W,Th and 12:30-1:30 F | | |
| (c) | Location: | F340C | | |
| (d) | Phone: | 370-3510 | Alternative Phone: | |
| (e) | Email: | sedlock@camosun.bc.ca | | |
| (f) | Website: | | | |

2. Intended Learning Outcomes

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Upon completion of this course the student will be able to:

1. Solve technical problems for objects undergoing uniform and non-uniform circular motion, and calculate centripetal forces and acceleration.
2. Solve technical problems using calculus involving work by constant and non-constant forces, the work-energy theorem, gravitational and elastic potential energy, in two and three dimensions.
3. Solve technical problems utilizing the concept of conservation of momentum of isolated systems, including elastic and inelastic collisions, the coefficient of restitution, and momentum conservation of systems of particles involving mass changes.
4. Define the rotational kinematic quantities angular velocity and angular acceleration. Transform between linear and rotational quantities. Use the rotational form of Newton's 2nd Law to solve dynamics problems. Calculate work, energy and power for rotational systems.
5. Calculate the centre-of-mass and moment-of-inertia for uniform objects. Use the parallel-axis theorem for moment-of-inertia calculations. Perform calculations and answer conceptual questions using torques. Solve equilibrium problems for non-concurrent forces.
6. Solve technical problems involving the translational and rotational conditions of mechanical equilibrium of rigid systems.
7. Solve technical problems involving the electrostatic force, the electric field, and the electric potential of point charges.

8. Solve technical problems involving magnetic forces on moving charges, current-carrying wires, and practical applications of magnetism in science and technology.
9. Assemble experimental apparatus using written instructions.
10. Observe, record, organize and display data in tables, graphs or charts.
11. Analyze linear graphs (determine area, slope, intercept, etc.).
12. Observe and record sources of error and estimate the range of uncertainty in results.
13. Interpret meaning of experimental results in the context of the experimental objectives.
14. Write scientific reports in an acceptable, traditional format.

3. Required Materials

- (a) Texts: Serway 7th Ed
- (b) Other

4. Course Content and Schedule

Please see Camlink

5. Basis of Student Assessment (Weighting)

- (a) Assignments 5%
- (b) Quizzes 30%
- (c) Exams Final 50%
- (d) Labs 15%

6. Grading System

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)

Standard Grading System (GPA)

| Percentage | Grade | Description | Grade Point Equivalency |
|------------|-------|---|-------------------------|
| 90-100 | A+ | | 9 |
| 85-89 | A | | 8 |
| 80-84 | A- | | 7 |
| 77-79 | B+ | | 6 |
| 73-76 | B | | 5 |
| 70-72 | B- | | 4 |
| 65-69 | C+ | | 3 |
| 60-64 | C | | 2 |
| 50-59 | D | Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite. | 1 |
| 0-49 | F | Minimum level has not been achieved. | 0 |

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

| Temporary Grade | Description |
|-----------------|--|
| I | <i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family. |
| IP | <i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. <i>(For these courses a final grade will be assigned to either the 3rd course attempt or at the point of course completion.)</i> |
| CW | <i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement. |

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services and on the College web site in the Policy Section.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED