



**School of Arts & Science**  
**PHYSICS DEPARTMENT**  
**PHYS 104-02**  
**General College Physics 1**  
**2007F**

## COURSE OUTLINE

The Approved Course Description is available on the web @ \_\_\_\_\_

- 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:	Dr. James Nemec		
(b)	Office Hours:	(M,T,Th): 11:30-2:30 pm		
(c)	Location:	Fisher 346d		
(d)	Phone:	370-3460	Alternative Phone:	
(e)	Email:	nemec@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 involving one-dimensional kinematics for a single particle undergoing constant acceleration along horizontal and inclined surfaces, and in free fall.
2. Solve technical problems involving the dynamics of a single particle in one dimension, the vector nature of forces, the net force on an object, free-body diagrams for single and two interacting objects, gravitational forces, and inertia.
3. Solve technical problems involving kinetic energy, gravitational potential energy, elastic potential energy, conservation of mechanical energy, and mechanical power, in one dimension.
4. Solve technical problems involving conversions between common temperature scales, specific heat capacity, latent heats, calorimetry, and heat transfer by radiation, thermal conduction and convection.
5. Solve technical problems involving nuclear energy (mass-energy equivalence, binding energy), demonstrate knowledge of nuclear fission, fusion, and fuel disposal problems.
6. Solve elementary technical problems involving graphical and trigonometric vector algebra in two dimensions, two-dimensional kinematics (motion), dynamics (forces), work and power.
7. Solve technical problems involving projectile motion, circular motion with constant speed, gravitational forces and planetary motion.

8. Solve technical problems involving hydrostatics (Archimedes' principle, Pascal's principle) and simple fluids in motion (Equation of continuity, Bernoulli's equation).

### 3. Required Materials

(a)	Texts	Course textbook: PHYSICS: Principles with Applications (5th or 6 <sup>th</sup> edition), by D. Giancoli  Physics 104/105 Lab Manual (available from the Lansdowne Campus bookstore)
(b)	Other	Scientific calculator (any pocket calculator is acceptable)  Graph paper

### 4. Course Content and Schedule

*(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)*

Physics 104 is offered in Fall and Winter semesters. It is a 4-credit course, with 4 lecture hours and 2 lab hours per week.

The prerequisites are as follows: Physics 11 or PHYS060 or PHYS150 or departmental assessment; and one of MATH 073, MATH 173; or Math 11 or assessment.

(Chapters in Giancoli's textbook)

01. **Introduction, Measurement and Estimation (considered to be review)**
02. **1D Kinematics (considered to be review)**
03. **2D Kinematics**
04. **Dynamics**
05. **Circular Motion and Gravitation**
06. **Work, Energy and Power**
10. **Fluids**
14. & 15. **Thermal Energy**
30. & 31. **Nuclear Energy**

### 5. Basis of Student Assessment (Weighting)

*(Should be linked directly to learning outcomes.)*

- (a) Lab Performance and Reports – in order to obtain a passing grade for this course, students must satisfactorily complete the lab component of the course. **[10%]**
- (b) Review Quizzes, Assignments and Homework **[5%]**
- (c) Two Midterm Exams – these will be given after covering Chapters 1-3 (towards the end of September), and after covering Chapters 4-6 (~ end of October). **[2x17.5% = 35%]**
- (d) Final Exam – a comprehensive examination held in December; over half the material will be based on the last three sections. **[50%]**

### 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
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			<b>Equivalency</b>
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](http://camosun.ca) for information on conversion to final grades, and for additional information on student record and transcript notations.

<b>Temporary Grade</b>	<b>Description</b>
<b>I</b>	<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.
<b>IP</b>	<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. (For these courses a final grade will be assigned to either the 3 <sup>rd</sup> course attempt or at the point of course completion.)
<b>CW</b>	<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](http://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.

## **Department Policies Regarding Testing and Labs**

- (a) Students must write review-quizzes, midterm-tests, etc. on the date and time assigned by the instructor. Instructors are not required to provide make-up tests. At their discretion, instructors may waive a test or provide a make-up test only in the event of documented illness or other extenuating circumstances.
- (b) All assigned laboratory exercises must be completed with an overall grade of 60% or better to obtain credit for this course. A lab may be waived or made up at a later time only in the case of documented illness or other extenuating circumstances.
- (c) A student who is repeating an Astronomy course does not have to complete the laboratory exercises a second time if an average lab grade of 70% or better was obtained.

## **Study time and Basis of Student Assessment**

*It is recommended that between five and 10 hours per week (or more for students with a weak background) be spent studying for this course outside of class time.*