



**School of Arts & Science**  
**PHYSICS DEPARTMENT**  
**PHYS 295**  
**Physics (Engineering Bridge)**  
**2011 Q2**

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## 1. Instructor Information

(a)	Instructor:	Dr. Julie Alexander		
(b)	Office Hours:	Wed, Fri – 12:30-2:30		
(c)	Location:	Tech 220		
(d)	Phone:	250-370-4437		
(e)	Email:	jalex@camosun.bc.ca		
(f)	Website:	<a href="http://web.uvic.ca/~jalexndr">http://web.uvic.ca/~jalexndr</a>		

## 2. Intended Learning Outcomes

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

1. Describe the operation of several temperature sensors including the function and temperature calculations for a constant volume gas thermometer.
2. Solve problems involving thermal expansion in one and three dimensions. and derive from first principles the expressions required to solve these problems.
3. Solve problems involving the transfer of thermal energy with regard to specific heat capacity, latent heat and change of phase.
4. Solve problems involving the displacement wave function for transverse and longitudinal waves in elastic media with attention to wave number angular frequency, phase constant, and wave and particle velocities.
5. Derive the pressure wave function for sound waves and solve related problems.
6. Derive from first principles, the wave equation, the solution, and the expression for the wave velocity.
7. Derive the expressions for the interference of two or more waves including the phenomena of beats and standing waves.
8. Derive the expressions for, and solve problem involving the Doppler Effect.
9. Derive the expressions for, and solve problems involving physical optics phenomena including: double and multiple slit interference, thin films, diffraction and resolution of images.
10. Solve problems in geometrical optics including lenses, mirrors, prisms, and total internal reflection.
11. Use Coulomb's Law to solve problems in electrostatics for two or more charges.
12. Solve problems involving electric fields, electric potential, and potential difference for discrete charges and continuous charge distributions.
13. Analyze series and parallel electric circuits.
14. Solve problems involving magnetic flux density and magnetic forces on charges including forces on current carrying wires and torques on current loops.

### 3. Required Materials

- (a) Texts      Physics for Scientists & Engineers with Modern Physics, 8<sup>th</sup> edition, Serway, R.A., and Jewett, J.W.Jr. (the 7<sup>th</sup> edition is fine)
- (b) Other      Physics 295 Laboratory Manual  
Graph paper (must be either 10 lines/inch or millimeter graph paper)

### 4. Term test dates

Mondays: Jan 24, Feb 14, Mar 7

Tuesdays: Jan 25, Feb 15, Mar 8

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

The student must be successful ( $\geq 60\%$ ) in both the theory and laboratory assignments to pass the course. The approximate percentages used for the final grading are:

Term tests	35%
Lab Reports	15%
Final Exam (3 hours)	50%

Midterm tests may be discounted from the grading distribution (see above) if all term work, including term tests, and labs have been completed and are 60% or higher. In this case, the final grade for the course may be based on a combination of the final exam (85%) and the lab mark (15%).

#### PHYSICS DEPARTMENT POLICIES REGARDING TESTING:

1. The final exam will cover the entire course and will be 3 hours long. As stated in the current college calendar on page 39, "students are expected to write tests and final exams at the scheduled time and place." Exceptions will only be considered due to emergency circumstances as outlined in the calendar. Holidays or scheduled flights are not considered to be emergencies.
2. 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.

#### PHYSICS DEPARTMENT POLICIES REGARDING LABS:

1. All assigned laboratory exercises and reports must be completed and handed in prior to the date of the final exam with an overall grade of 60% in order to obtain credit for the course. A lab may be waived or made up at a later time only in the case of documented illness or other extenuating circumstances. If you will be absent from a lab period due to illness it is your responsibility to notify your instructor.
2. At the discretion of the instructor, a student who is repeating this Physics course may apply for lab exemption.

## 6. Grading System

### 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](http://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 3<sup>rd</sup> 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. Chapters covered in text

Chapters 14, 15, 16, 17, 18, 20, 27, 28, 35, 36, 37, 38 (see course schedule for details)

**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.