



**School of Arts & Science**  
**PHYSICS DEPARTMENT**  
**PHYS 272**  
**Energy and Sustainability**  
**2017 W**

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## 1. Instructor Information

(a)	Instructor:	Dr. Julie Alexander		
(b)	Office Hours:	Wed, 9:30- 11:30, Tues, Thurs, – 9:30-10:30, 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. Solve technical problems requiring the application of particle vibration and wave physics in elastic media, including sound waves, with attention to attenuation.
2. Solve problems involving electric fields for discrete charges and continuous charge distributions.
3. Describe the effects of magnetic fields, and perform calculations involving Faradays Law and Induction.
4. Use fundamental thermal physics, including thermometry conversions, to perform calculations involving radiative heat transfer.
5. Define and describe basic semiconductor theory with emphasis on photovoltaics.
6. Solve technical problems involving properties of the nucleus, radioactivity and nuclear energy.
7. Evaluate sustainability of alternative energy sources including wave, wind, solar and fuel cells.
8. Describe characteristics of alternative energy storage systems.
9. Observe record, organize and display data in tables, graphs or charts.
10. Observe and record sources of error and estimate/compute uncertainty in results.
11. Interpret meaning of experimental results in the context of the experimental objectives.
12. Write scientific reports in an acceptable, traditional format.

### 3. Required Materials

- (a) Texts      Renewable Energy Resources, 3<sup>rd</sup> ed. By John Twidell and Tony Weir
- (b) Other      Physics 272 Laboratory Manual

### 4. Term test dates

Wed. Feb 8 and Wed. Mar 22 (1 hour tests)

### 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:

2 Term tests	20%
Student Presentation	10%
Lab Reports	10%
Assignments	10%
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 (90%) and the lab mark (10%).

#### 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 1,2,3,5,6,7,8,9,11,12,14,15 (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.