



**School of Arts & Science  
PHYSICS DEPARTMENT**  
**PHYS 214-section**  
**Science Laboratory Electronics**  
**Semester/Year, eg, 2006F or 2006Q1**

## COURSE OUTLINE

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

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:	M,Tu,Th,F 9:30-10:30,W 1:30-2:30		
(c)	Location:	F340C		
(d)	Phone:	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 associated with networks of resistors and batteries by means of Kirchoff's Laws, Thevenin's Theorem, Norton's Theorem, and the superposition theorem, as well as RC circuits, the effect of temperature on resistive components, and electric power in DC circuits.
2. Solve technical problems associated with AC circuits, RC, LR and LRC circuits, including phasor diagrams, average and RMS values for current, voltage and power, power factor, and transformers.
3. Define and describe chemical bonding in metals, elementary band theory, models of electrical conduction in metals, insulators and semiconductors, doping, the pn junction and the operation of the diode, the junction transistor, field effect transistor and the integrated circuit.
4. Solve technical problems involving the ideal operational amplifier, logic functions and logic gates, flip-flops and basic digital circuits.
5. Demonstrate practical laboratory proficiency in constructing electronic circuits, the use of the digital multimeter and all its functions, the dual-channel oscilloscope, signal generators, and power supplies.
6. Construct DC and AC circuits using discrete components (including breadboards, resistors, capacitors, inductors, op amps, etc.) in kit form.
7. Design and assemble novel experiments for original projects.
8. Observe, record, organize and display data in tables, graphs or charts from electronic diagnostic equipment (DMM, oscilloscope, etc.).
9. Analyze linear graphs (determine area, slope, intercept, etc.).

10. Observe and record sources of error and estimate the range of 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	
(b)	Other	

### 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.)*

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

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

(a)	Assignments	
(b)	Quizzes	
(c)	Exams	
(d)	Other <small>(eg, Attendance, Project, Group Work)</small>	

### 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
95-100	A+		9
90-94	A		8
85-89	A-		7
80-84	B+		6
75-79	B		5
70-74	B-		4
65-69	C+		3
60-64	C		2
50-59	D		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 at [camosun.ca](http://camosun.ca) or 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 are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
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.

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.

## 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.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED