

ST. LAWRENCE COLLEGE

COURSE OUTLINE

Course Title: Advanced Electronics I	
Course Code: EETN 131	Version Number: Two (2)
Standard Course Hours: 75	Prerequisites/corequisites: LL102B, MA010
General Education course? No	Date approved for Gen. Ed.: NA
Eligible for PLAR challenge? Yes	PLAR contact: Kingston - (613) 544-5400, ext. 1237 Cornwall - (613) 933-6080, ext. 1237 Brockville - (613) 345-0660, ext. 1237
Professor/instructor: Wayne Barrer	
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Authorization

Approving Authorities:	Approval Date:
<i>This is an important document and should be saved for future reference. It may be needed for certification, credit transfer, and employment.</i>	

Vision and Mission

At St. Lawrence College we inspire
A passion for lifelong learning
by
Creating a learning-centred environment
that excites us all and celebrates quality and excellence
and by
Increasing our activities
to secure the future in each community we serve.

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Advanced Electronics I

COURSE DESCRIPTION

The student will be able to analyze, design, construct, test and troubleshoot analog electronic circuits. The various topics of the course will include such items as low frequency amplifiers, integrated circuits, operational amplifiers, discrete devices, diodes and transistors, DC and mid-range frequency operation, concepts of lower and upper corner frequencies, linear dc power supplies and non-linear analog circuits.

RELATIONSHIP TO THE PROGRAM

Relates to the communication, signal processing and control system learning outcomes of the program.

COURSE LEARNING OUTCOMES

On completion of this course the students will be able to demonstrate a complete understanding of:

- Design, construction and test of analog circuits involving discrete and integrated circuits
- Basic operation of diodes, transistors and other semiconductor components
- Basic operation of semiconductor circuits including switching, amplifiers and power supplies and power regulation
- Basic operation of operational amplifiers including frequency response

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PREREQUISITES/COREQUISITES

LL 102B, Electrical Fundamentals and MA010, Technical Mathematics or equivalents.

GRADING POLICY

All educational offerings at St. Lawrence College conform to academic policy. Copies of this policy are available in the student guide, from all administrative offices and in campus libraries. The student's on-going progress will be evaluated based on performance on assignments and tests; see appendices.

TEXT

Foundations of Electronics Circuits and Devices 3rd Edition, Meade; Delmar Publishers (ISBN # 0-7668-0427-5), is available in the bookstore at St. Lawrence College.

Lab Safety Rules:

- No horseplay will be tolerated in the lab.
- Report damaged or non-functioning equipment to the instructor.
- Report any unsafe conditions you may encounter to the instructor.
- Safety Glasses **MUST** be worn in the Labs.

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APPENDICES

EVALUATION/EARNING CREDIT

The relative weighting of course components in calculating the final grade is shown below:

	Weighting
Labs	30%
Lab Project (formal report)	10%
Test - Lab	10%
Tests Theory	50%
Total	100%

NOTE: All Tests have equal weight
All Labs have equal weight.

A 60% average must be obtained in both the Labs and the Tests in order to obtain a final passing grade.

There will be one formal Lab Report. All other labs will be in short format and may include the following: tables graphs and answers to questions. Complete circuit construction, waveforms and results are required.

Labs must have a cover page; 10% penalty will apply if missing. Cover page to be standard cover page (see handout). Labs will be submitted as detailed in class.

Late Labs will be graded 10% off if late with an additional 10% of for each week late thereafter. If student labs are returned before a late lab is submitted 40% will be automatically deducted from the late lab.

The college has adopted a standard letter system that is used for the conversion of numeric evaluation figures into a letter grade.

GRADE DESCRIPTION:

Grade Description	Letter	Percent
Outstanding performance	A	? 85%
Above average performance	B	<85% and ? 75%
Satisfactory	C	<75% and ? 65%
Minimum performance	D	<65% and ? 60%
Failed to meet standards	F	<60%
Incomplete work	I	
Credit granted (PLA)	G	

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TEXT AND OTHER LEARNING RESOURCES

1. Textbook/Notes: A textbook is required see page 3.

2. Web pages: www.slctech.org/~wbarrer
 www.slctech.org/~ymorin

3. Library: There is a wealth of materials in the college library that can be used as supplements to this course. The library staff are extremely helpful and knowledgeable about the resources available to you; do not hesitate to ask for their help.

4. Your Teacher: Do not hesitate to contact your teacher for help or any clarifications you may require. Your teacher is available if you require any assistance or need additional information.

5. Course Objectives: This document is a guide to the successful completion of this course. It tells you the content of the course, what resources you require, what you are required to and in for evaluation and when to do your tests.

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DELIVERY SCHEDULE:

Week		Description
		Diodes
1		Review Capacitors & Inductors (Filters)
2	Lab #1	Semiconductors - Review
3	Lab #2	Diodes, Zener Diodes & Regulators
4	Lab #3 Lab Project assigned	Power Supplies
5	Lab #4 Test #1	Transistors - BJT
6	Lab #5	Transistor Amplifiers
7	Lab #6	Transistor Amplifiers
8	Lab #7	FETs
9	Lab #8 Test #2	Operational Amps – introduction Frequency Response & Slew Rate
10	Lab Test	Op Amp Amplifiers
11	Lab #9	Other Op Amp Circuits
12	Lab #10	Oscillators
13	Project	Multivibrators
14	Project due	Thristors
15	Test #3	