

Fall 2024

INTRODUCTION TO EXPERIMENT

Laboratory and Course Materials

There is no official textbook for this course but there is an official set of course notes available to you at no cost on Brightspace. The Lab manual is required and can be purchased at the UVic bookstore. The cost of your lab manual includes a soldering project that will be distributed to you in the lab.

Course Assessment

Labs:	35%
Assignments	15%
Quizzes	5%
Midterm	10%
Final Exam	35%

A+ 90-100	A 85-90	A- 80-85
B+ 77-80	B 73-77	B- 70-73
C+ 65-70	C 60-65	D 50-60
F 0-39		

Time dependence. Capacitance, Inductance and Reactance. Complex numbers.
Analysis of AC circuits. Frequency Domain approach. Bode Diagrams.

Electronic properties of matter: Conductors, Insulators & Semiconductors
Diodes and Transistors
Amplifiers
Operational Amplifiers: opamp designs.

Digital electronics and binary representation
Logic gates: memory, counting and arithmetic.
Digital to Analog (DAC) & Analog to Digital Conversion (ADC)
Data acquisition: interfacing sensors with systems.

Module 4: Theory of Measurement

What is measurement? Measurement as estimation of true value.
How uncertainties propagate.
Statistical viewpoint of measurement
Systematic error and data rejection.

Module 5: Data Analysis

Statistics and Counting
Curve Fitting