

PORTLAND STATE UNIVERSITY
DEPARTMENT OF PHYSICS

PH 321 CURRENT ELECTRICITY, FALL TERM 2011
MW 2-4 NH-472

INSTRUCTOR: Andy Martwick	Telephone: 503-three three three-8285
	Office: SB2-L1-50
www.web.pdx.edu/~martwick	E-mail: martwick@pdx.edu
	Hours: By arrangement. MW AM is a good choice, just send an email or call. Weekends are also possible.

TEXTBOOK (required): Fundamentals of Electric Circuits, Alexander, 4th ed
 Recommended: www.mhhe.com/alexander register with section code 8AA-87-8DD
 "Electric Circuits", Schaum's Outlines, 2 hr reserve in lib

GRADING: 40% Homework
 30% Midterm
 30% Final

Extra credit will be assigned as midterm and final review problems. Calculator is required. Email is required. I'll post grades and assignments on D2L.

Course Objectives

You will learn how to analyze networks of resistors, capacitors, inductors and op-amps by solving first and second order linear differential equations with constant coefficients using direct integration, complex analysis and Laplace transform methods

As we solve simple systems, we will explore the important role of the inner product in physics and engineering. This important mathematical method is used throughout physics to decompose complicated functions into solvable systems. The inner product with the complex basis e^{st} will provide deeper understanding of complex numbers, Fourier and Laplace transforms, frequency response, and system transfer functions.

Tentative outline covering Ch1-10, 15, 16

Week	Mon	Wed	HW Due (thur)
1	Intro Ch1	Ch 2 Problems	
2	Ch3 Ch 3-4	Ch 4 Problems	Ch 1,2
3	Ch 5 Ch 5/6	Ch 6 Problems	Ch 3, 4
4	Ch 7 Ch7	Ch7/8 Problems	Ch 5, 6
5	Ch8 Ch8	Ch 8 Problems	Ch 7
6	Ch 9	Midterm ch 1-7	Midterm Extra Credit
7	Ch 9 Ch 10	Ch 10 Problems	Ch 8
8	Ch15 Ch15	Ch16 Problems	Ch 9
9	Ch 16 Ch16	Transmission lines Problems	Ch 15
10	TBD	Ch 16 HW Review (HW can be picked up on Fri) Final Review	Ch 16