EE 211 Basic Circuit Analysis I

3 lecture, 1 lab
Monday to Friday 1:00 to 3:00 pm
61097 Hale Imiloa Rm 137

INSTRUCTOR: **Dr. Jacob Hudson**
OFFICE: **Hale Imiloa 112**
OFFICE HOURS: **Monday to Friday; 11:00 am – 12:00 noon**
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EFFECTIVE DATE: Summer 2014

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai'i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O'ahu's Ko'olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

This is an introductory course covering linear passive circuits, time domain analysis, transient and steady state responses, phasors, impedance and admittance, power and energy, frequency responses, and resonance.

Activities Required at Scheduled Times Other Than Class Times

In addition to the lecture, there are 2 weekly labs; times are to be determined.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

1. To understand the rudimentary properties of circuit design and the basic techniques used in their analysis.

2. To determine the difference between passive and active circuit elements and their principles of operation.

3. To understand the basic behaviors of such circuit elements such as resistors, capacitors, inductors, and operational amplifiers.

4. To understand the basic principles of electric power production.

COURSE CONTENT (Very Tentative)

Lecture

Topic:	Text:
Introduction	Syllabus
DC Circuits	Chap 1
Basic Laws for Circuit Analysis	Chap 2
Methods of Analysis	Chap 3
Thevenin's and Norton's Theorem	Chap 4
Mid Term I	
Operational Amplifiers	Chap 5
Capacitors and Inductors	Chap 6
First Order Circuits	Chap 7
Mid Term II	
Second Order Circuits	Chap 8
Sinusoids and Phasors	Chap 9
Oscillators	Chap 10
Mid Term III	
AC Power Analysis	Chap 11
Frequency Response and Filtering	Chap 14
Final	

Laboratory

Introduction; Basic Equipment
Simple Semi-conductor Lab
Resistivity Lab
Oscilliscope Lab
Electric Deflections Lab
Kirchhoff's Rules Lab
Measurement of Resistance Lab
Magnetic Field Lab
Transistor Lab
Operational Amplifier Lab
Capacitors and the Time Constant Lab
RC Circuit Lab

ASSESSMENT TASKS AND GRADING

Grading: Student assessment will be determined from class participation (~10%), homework (~25%), 3 midterms (~30%), Lab reports (~15%), and the Final (~20%). All students are required to take the Final exam.

Class Participation – In addition to the class lecture, students are to take part in the problem solving that will be emphasized each class.

Homework – A homework assignment will be given each class. The assignment is due at the beginning of the next class period. Since the assignment is covered immediately after collection, no *Late* assignments will be accepted. It is strongly urged that students make copies of their assigned work, to annotate during the solution session.

Lab Reports – lab reports for experiments will be due the next lab session after the experiment was completed.

Exams – There are three midterm exams, each yielding approximately 10% of the overall point total of the semester grade. The final exam is at the scheduled time, and is worth approximately 20% of the overall point total of the semester grade.

LEARNING RESOURCES

Fundamentals of Electric Circuits (4th Ed)
C. K Alexander, M. N. O. Sadiku; *McGraw Hill Publishers*

Additional Information

Other texts that the student my reference are:

The Art of Electronics
P. Horowitz, W. Hill; *Cambridge University Press*

Barron's Electronics the Easy Way
R. Miller, R. M. Miller; *Barron's Publishing*

Experiments in Physics; A Laboratory Manuel for Scientists and Engineers
D. W. Preston; *J. Wiley and Sons Publishers*

Physics Laboratory Experiments (5th Ed)
J. D. Wilson; *Houghton Mifflin Co.*

General Physics Laboratory II; Electricity Magnetism, and Optics
F. A. Harris; *Kendall Hunt Publishing*

DISABILITIES ACCOMMODATION STATEMENT

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale 'Akoakoa 213 for more information.