EE 211, Basic Circuit Analysis I
4 Credits (CRN 60346)
Tuesdays and Thursdays; 2:30 to 3:45 pm

INSTRUCTOR: Dr Jacob V Hudson Jr
OFFICE: Hale Imiloa 130 or 122 (NASA AEL Flight Lab)
OFFICE HOURS (times students may drop in for help): M-F 12:00 to 2:00 pm
TELEPHONE: X9112 EMAIL: jacobh@hawaii.edu
EFFECTIVE DATE: Spring 2019; 1/7- 5/10

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 the Ko‘olau region of O‘ahu 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 then Class Time

In addition to the lecture, there is one 3-hr weekly lab on Thursday at 4:00 to 7:00 pm

PRE-REQUISITE

Physics 170; Credit for or registration in Math 231 or consent of the instructor

STUDENT LEARNING OUTCOMES

As a result of taking this course, students can expect to attain the following outcomes:

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.
CONNECTION WITH GLOs

- Develop the ability to perceive how people interact with their cultural and natural environments, through their own worldview and through the worldview of others, in order to analyze how individuals and groups function in local and global contexts.
- Identify information needed in a variety of situations, and access, evaluate, and use relevant information effectively and responsibly.
- Make judgements, solve problems, and reach decisions using analytical, critical, and creative thinking skills.
- Use written, visual, and oral communication to discover, develop, and communicate meaning, and to respond respectfully to the ideas of others in multiple environments.

ASSESSMENT

Grading: Student assessment will be determined from class participation (~5%), homework (~40%), midterms (~35%) 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. No Late assignments will be collected.

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 12% 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.

COURSE CONTENT

Tentative Schedule:

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3/28  Sinusoids and Phasors  Chap 9
4/2   Oscillators  Chap 10
4/9   Mid Term III
4/16  AC Power Analysis  Chap 11
4/23  Frequency Response and Filtering  Chap 14

5/9   Final Exam  Thursday  2:30-4:30

Laboratory Schedule

1/17  Introduction; Basic Equipment
1/24  Simple Semi-conductor Lab
1/31  Exam Review
2/7   Resistivity Lab
2/14  Oscilloscope Lab
2/21  Electric Deflections Lab
2/28  Exam Review
3/7   Kirchhoff’s Rules Lab
3/14  Measurement of Resistance Lab
3/28  Magnetic Field Lab
4/4   Exam Review
4/11  Transistor Lab
4/18  Operational Amplifier Lab
4/25  Capacitors and the Time Constant Lab
5/2   RC Circuit Lab

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 may 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

- MySuccess: Students may be referred for extra help or advising through MySuccess. Students can also explore resources at MySuccess.Hawaii.edu and windward.hawaii.edu/MySuccess

DISABILITIES ACCOMMODATIONS
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 ʻĀkoakoa 213 for more information.

TITLE IX
Title IX prohibits discrimination on the basis of sex in education programs and activities that receive federal financial assistance. Specifically, Title IX prohibits sex discrimination; sexual harassment and gender-based harassment, including harassment based on actual or perceived sex, gender, sexual orientation, gender identity, or gender expression; sexual assault; sexual exploitation; domestic violence; dating violence; and stalking. For more information regarding your rights under Title IX, please visit: https://windward.hawaii.edu/Title_IX/.

Windward Community College is committed to the pursuit of equal education. If you or someone you know has experienced sex discrimination or gender-based violence, Windward CC has resources to support you. To speak with someone confidentially, contact Karla Silva-Park, Mental Health Counselor, at 808-235- 7468 or karlas@hawaii.edu or Kaahu Alo, Designated Confidential Advocate for Students, at 808-235- 7354 or kaahualo@hawaii.edu. To make a formal report, contact the Title IX Coordinator at 808-235-7393 or wcctix@hawaii.edu.

ACADEMIC INTEGRITY
Work submitted by a student must be the student’s own work. The work of others should be explicitly marked, such as through use of quotes or summarizing with reference to the original author.

Students can upload papers to http://www.TurnItIn.com to have papers checked for authenticity, highlighting where the paper potentially fails to appropriately reference sources.

In this class, students who commit academic dishonesty, cheating or plagiarism will have the following consequence(s):

Students will receive a failing grade for plagiarized assignments.

All cases of academic dishonesty are referred to the Vice Chancellor for Student Affairs.

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ALTERNATE CONTACT INFORMATION
If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office:

Location: Alakai 121  
Phone: 808-235-7422  
Email: wccaa@hawaii.edu