

**NEWARK COLLEGE OF ENGINEERING**

**SYLLABUS AND COURSE INFORMATION**

- Course Name:** Analog and Digital Electronics for Non-Majors
- Course Number:** ECET 329
- Course Structure:** 2-2-3 (lecture hr/wk – lab hr/wk – course credits)
- Course Description:** Building on ECET 201, a study of more advanced topics in electronics including AC circuit analysis, op-amps, transistors, digital logic, and microcontrollers. Computer simulation as well as laboratories are required.
- Prerequisites:** ECET 201 or ECE 231
- Corequisites:** None
- Required, Elective, or Selected Elective:** Required
- Required Materials:** **Text:** Name: Introduction to Electronics  
Author: Earl Gates  
Year: 2011  
ISBN: 978-1-11-112853-1
- Text:** Name: Lab Manual for Introduction to Electronics  
Author: Earl Gates  
Year: 2011  
ISBN: 978-1-11-112854-8
- Course Outcomes:** By the end of the course students are able to:
1. Understand basic DC and AC circuits and model with Thevenin and Norton Equivalents.
  2. Represent simple AC circuits with phasors.
  3. Analyze the effects of pulse waveforms and sinusoidal waveforms on capacitive and inductive networks.
  4. Understand the electrical aspects of simple motors and generators.
  5. Understand how basic semiconductor devices such as diodes, transistors and operational amplifiers work, how they are used, and to use them in simple electrical circuits.
  6. Analyze the operation of Digital Logic circuits, and to use logic gates in connection with those circuits.
  7. Understand the functionality and role of a microcontroller in modern systems.
  8. Implement a simple microcontroller based system.
  9. Comprehend detailed lab descriptions, perform pre-lab analyses, construct circuits in a lab, take appropriate measurements, analyze results, and prepare summaries and conclusions.

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10. Practice and use teamwork to complete laboratory experiments in limited time allotted, requiring subdivision of lab work and cross-checking of results.

**Class Topics:** DC and AC Circuits                      Inductors and Capacitors  
Thevenin and Norton Networks      AC Measurements  
Transformers    Motors  
Diodes, BJTs, and FETs                      Operational Amplifiers  
Microcontrollers

**Academic Integrity:** NJIT has a zero-tolerance policy regarding cheating of any kind and student behavior that is disruptive to a learning environment. Any incidents will be immediately reported to the Dean of Students. Please visit the Dean of Students website at <http://www.njit.edu/doss> for a list of student policies relating to academic integrity and student conduct.

**Modification to Course:** The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be notified in class of any changes to the Course Outline.

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