New Jersey Institute of Technology
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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. This course may not be taken by ECET majors and is designed specifically for non-ECET majors.
Prerequisites:	ECET 201 or ECE 231
Corequisites:	None

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: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

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.

Prepared By: Daniel Brateris

Course Coordinator: Daniel Brateris

Updated: 26 January 2022