NJIT
New Jersey's Science & Technology University

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NEWARK COLLEGE OF ENGINEERING

SYLLABUS AND COURSE INFORMATION

Course Name:	Circuits I
Course Number:	ECET 201
Course Structure:	2-2-3 (lecture hr/wk – lab hr/wk – course credits)
Course Description:	This first course in Electrical Circuits introduces the student to both DC and AC Circuit Theory. It includes Ohm's and Kirchoff's Laws for analysis of series and parallel circuits. Series-parallel, ladder and bridge networks are analyzed. Resonance and frequency response are included along with an introduction to AC circuits. Circuit simulations and laboratory experiments are designed to support the theory and obtain measurement skills.
Prerequisites:	None
Corequisites:	None
Required, Elective, or Selected Elective:	Required

Required Materials: **Text:** Name: Principles of Electric Circuits, Conventional Current
Author: Floyd
Year: 2009
ISBN: 978-0-13-507309-4

Course Outcomes: By the end of the course students are able to:
1. Apply various laws of electricity to solve for voltages and currents in series, parallel, and series-parallel resistive circuits.
2. Analyze inductive and capacitive circuits to determine the effective/total inductance and capacitance of these circuits.
3. Convert complex circuits to their simplified equivalents to solve for the parameters of changing load resistances.
4. Work with circuits containing multiple voltages and currents sources.
5. Demonstrate the use of laboratory equipment to measure voltage, current and resistance.
6. Perform laboratory exercises and present conclusive results in the form of lab reports.
7. Simulate a circuit to enhance understanding of a circuit's behavior.
8. Effectively interact with other team members to analyze circuits and complete assignments.
9. Demonstrate ability to read-ahead course materials prior to lecture.

Class Topics:

Basic Electric Concepts	Mesh and Nodal Analysis
Units of Measure	Thevenin and Norton Circuits
Energy and Power	Maximum Power Transfer
Kirchhoff's Laws	Superposition and Source Transforms

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Student Outcomes:	The Course Learning Outcomes support achievement of the following Student Outcomes from the ETAC of ABET Criterion 3 requirements.
	Student Outcome a: An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities; **Related Course Learning Outcomes:** 1
	Student Outcome c: An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes. **Related Course Learning Outcomes:** 2, 5, & 6
	Student Outcome e: An ability to function effectively as a member or leader on a technical team. **Related Course Learning Outcomes:** 8
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.
Prepared By:	Daniel Brateris
Course Coordinator:	Daniel Brateris