

JAMESTOWN COMMUNITY COLLEGE
State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: Fundamentals of Electricity

Course Abbreviation and Number: ELC 1200

Credit Hours: 3

Course Type: Lecture/Lab

Course Description: Students will gain basic background knowledge of DC and AC circuits. Circuit analysis, circuit wiring, understanding schematics, and using measuring instruments for troubleshooting skills will be developed on an ongoing basis throughout the course.

Eligibility: MAT 1210.

Student Learning Outcomes:

Students who demonstrate understanding can:

1. Apply Ohm's Law, Kirchhoff's Voltage, and Current Law, and Watt's Law to calculate voltages, currents, and dissipated powers.
 2. Identify electrical/electronic components and have a conceptual understanding of how they are used in basic circuits.
 3. Wire a circuit given a schematic diagram.
 4. Use test instruments to make basic measurements.
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Topics Covered:

- Basic Concepts
 - Parallel circuits
 - Electrical Quantities and Units
 - Series-parallel circuits
 - Magnetism and Electromagnetism
 - Alternating Current and Voltage
 - Single-phase alternating current
 - Three-phase alternating current
 - Power in AC circuits
 - Capacitance
 - Inductance
 - Transformers
 - RC, RL, and RLC circuits
 - Basic Circuits, Laws and Measurements
 - Circuit Components
 - Multiple-Load Circuits
 - Series circuits
 - Voltage dividers
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Information for Students

- Expectations of Students
 - [Civility Statement](#)
 - [Student Responsibility Statement](#)
 - [Academic Integrity Statement](#)
 - [Accessibility Services](#)

Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
 - [Get Help: JCC & Community Resources](#)
 - [Emergency Closing Procedures](#)
 - Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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 - Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.
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Effective Date: Fall 2021