

**JAMESTOWN COMMUNITY COLLEGE**  
**State University of New York**

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**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 1590 or Corequisite MAT 0550.

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**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
    - Series-parallel circuits
  - Electrical Quantities and Units
    - Charge
    - Current
    - Voltage
    - Resistance
    - Power
  - Basic Circuits, Laws and Measurements
  - Circuit Components
  - Multiple-Load Circuits
    - Series circuits
    - Voltage dividers
  - 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
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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 2023