SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: ELEC 110 Department: Electrical Engineering Tech.

Course Title: Basic Electricity 1 Semester: Spring Year: 1999

Objectives/Competencies

Course Objective	Competencies
1. Understand and apply Ohms Law.	1. Demonstrate by exam and understanding of voltage, current and resistance. 2. Demonstrate by solving complex electrical problems and ability to use Ohms law. 3. Demonstrate by taking measurements of voltage, current and resistance and understanding of Ohms law.
2. Analyze complex series and parallel resistive circuits.	1. Demonstrate by exam and understanding of series and parallel circuits. 2. Demonstrate by setting up complex series and parallel circuits and making voltage current and resistance measurements in the laboratory.
3. Understand fundamental trouble shooting techniques.	1. Demonstrate by using an ohmmeter how to locate a defective resistor switch or wire. 2. By exam, analyze series and parallel or combination circuits for shorts or opens, applying Ohms law.

Course Objective	Competencies
4. Understand and use Thevenin's Theorem.	1. Demonstrate in the lab how a complex circuit can be reduced to one source. 2. By exam, demonstrate an understanding of applying Thevenin's Theorem to a complete circuit.
5. Understand and apply the Superposition Theorem.	1. By experiment, show that a multi-source problem can be solved using the Superposition Theorem. 2. By exam, solve complex multi-source electrical problems using the Superposition Theorem.
6. Use Kirchoff's Laws	1. By experiment, prove all four of Kirchoff's Laws. 2. By exam, solve complex electrical problems using any number of Kirchoff's Laws.
7. Understand and use Norton's Theorem.	1. By experiment, reduce a circuit to one current source and one load. 2. By exam, solve complex electrical problems using Norton's Theorem.
8. Understand and use a calculator.	1. Solve electrical problems using scientific notation, engineering prefixes using a standard engineering calculator.
9. Be able to measure current, voltage and resistance.	1. In the lab, take standard electrical measurements using a digital multimeter.
10. Be able to build a simple electrical circuit.	1. In lab, build electrical circuit using a schematic drawing.