SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: EFT-097 Class/Lect. Hours: 1 Lab Hours: 0 Credits 1 Dept.: ELEC.AS/EROB.COC

Course Title: Practical Electrical Problem Solving Semester: Fall Year: 2015

Course Description, Prerequisite, Corequisite:

This course is designed to provide students with a basic foundation in applied mathematics and symbolism necessary to understand basic electrical concepts and theories. Only ELEC.AS and EROB.COC students who have placed at ~~ABLH-078~~ or ALGB-087 should take this course.

Prerequisite: None.

Course Objectives	Competencies
1. Understand Scientific Notation and Engineering Notation.	a. Know basic SI units. b. Understand Engineering Notation. c. Know metric prefixes used in electrical engineering problems.
2. Solve common electrical engineering problems.	a. Know the order of operations for algebraic expressions. b. Understand and solve Ohm's Law equations. c. Understand and solve Power Law equations.
3. Understand ratios and proportions.	a. Know how to solve simple ratio problems. b. Apply ratio solutions to electrical engineering problems. c. Apply ratio solutions to fluid power situations.
4. Geometry, Pythagorean Theorem & Trigonometric Functions	a. Know perimeters & areas of circles, rectangles & triangles. b. Understand importance of right triangles. c. Understand basic functions of sine, cosine and tangent.
5. Effectively use a scientific calculator.	a. Know how to use a calculator to solve basic formulas. b. Know basic functions of an engineering calculator. c. Understand how to use Scientific and Engineering Notation. d. Understand reciprocal, square, square root and memory storage.
6. Graphing of common electrical parameters.	a. Understand simple linear graphs of voltage, current, resistance & power. b. Understand non-linear graphs of votage, current, resistance & power. c. Understand linear & non-linear graphs in fluid power systems
7. Be familiar with Number Systems used in Electrical Engineering.	a. Understand decimal. b. Understand binary and its use in digital systems. c. Understand relationship between hexadecimal and binary.