Piedmont Technical College Course Syllabus

COURSE INFORMATION

Course Prefix/Number: EEM 117

Title: DC/AC Circuits I

Responsible Division: Engineering Technology

Last Day to Withdraw from this Course: For the last date to withdraw from this course, consult the current *Student Calendar*.

Course Description:

For course, credit hour, pre-requisite(s) and co-requisite(s) information, visit the Detailed Course Information page: www.ptc.edu/courses/eem117.

Textbook and Other Materials:

For textbook information and additional required and/or supplemental materials, visit the college bookstore (www.ptc.edu/bookstore).

Proctored Examinations:

Proctored examinations for distance learning courses taken at non-PTC campuses may require a proctoring fee for each exam taken.

COURSE POLICIES

Course policies are available online through the *Academic Catalog* and *Student Handbook*. Visit the Course Policies page (www.ptc.edu/syllabus/policies) for a detailed list of important policies and more information.

GRADE POLICY

Detailed grading policy information can be found on the Grading Policy webpage (http://www.ptc.edu/grading-policy). Final grade appeal information is available in the *Academic Catalog* (http://www.ptc.edu/catalog/).

ACCOMMODATIONS

Accommodations for ADA:

Information is available on the Student Disability Services webpage (http://www.ptc.edu/ada).

RATIONALE

Why do I need this course?

Advances in technology have impacted every aspect of manufacturing – from design and production to inventory management, delivery and service. Today's manufacturing jobs are technology jobs and technicians must have a wide range of skills required to respond to the demands of an increasingly complex environment. This class will help prepare the student for a high tech career in advanced manufacturing.

PROGRAM INFORMATION

For program information including required courses, program learning outcomes, gainful employment information and advisement information, refer to the Academic Program webpage. Go to Academics (http://www.ptc.edu/academics), select your program, and then select Credentials Offered.

COURSE STUDENT LEARNING OUTCOMES

Upon successful completion of this course and/or clinical, each student will be able to:

- Summarize and break down electronic theory, including the properties of atoms, conductors, and insulators, as well as measurement systems used in electronics.
- Demonstrate the proper use of test equipment such as Digital Multi-Meters, Oscilloscopes and Analog Volt-Ohm Meters.
- Perform circuit analysis calculations of voltage, current, resistance and power in series, parallel and combination circuits using Ohm's Law.
- Evaluate the circuit using rules for voltage, current and power as they apply to series, parallel, and combination circuits.

GENERAL EDUCATION COMPETENCIES

Piedmont Technical College General Education Competencies for All Graduates:

This course may address one or more of the following General Education Competencies (assessment will be stated when applicable):

Communicate effectively.

Assessment:

Students will be completing lab work in groups. They will also participate in flipped classroom events and placed in an instructional role.

Grading will be based on lab submission rubric.

Apply mathematical skills appropriate to an occupation.

Assessment:

Students will engage in activities that will require performing specific calculations and comparing solved values against measured values to find faults and to test accuracy. The general education assessment will be accomplished though laboratory worksheets.

Grading will be based on lab worksheets.

Employ effective processes for resolving problems and making decisions.

Assessment:

Students will be placed in groups and given complex circuits to build and troubleshoot. They must coordinate as a team to achieve functionality of circuit.

Grading will be based on lab submission.

Demonstrate the basic computer skills necessary to function in a technological world.

Assessment:

Students will turn in laboratory reports in Microsoft Word as well as navigate circuit design software.

Grading will be based on lab submission rubric.

To validate proficiency in the general education competencies, students in some programs will be tested using Work Keys.