

Piedmont Technical College Course Syllabus

COURSE INFORMATION

Course Prefix/Number: EET 111

Title: DC Circuits

Responsible Division: Engineering and Industrial 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/EET111.

Textbook and Other Materials:

For textbook information and additional required and/or supplemental materials, visit the [college bookstore](http://www.ptc.edu/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](http://www.ptc.edu/syllabus/policies) (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) (http://www.ptc.edu/grading-policy). Final grade appeal information is available in the [Academic Catalog](http://www.ptc.edu/catalog/) (http://www.ptc.edu/catalog/).

ACCOMMODATIONS

Accommodations for ADA:

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

RATIONALE

Why do I need this course?

A good understanding of Direct Current circuits and their applications in the industrial world is an absolute essential. Without the basic foundations and skills, the world of electronics is not easily approached. A broad technical understanding of the electronic and electrical world around you is no option. The knowledge of Direct Current circuits and their use should not just become second nature, but should also become your comfort zone.

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) (<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:

- Recognize common electrical components and measurement devices.
- Know electrical and magnetic quantities and their units.
- Use scientific notation and metric prefixes.
- Describe the basic structure of an atom.
- Explain the concept of an electrical charge.
- Be able to define voltage, current, and resistance.
- Identify an electrical circuit and take basic measurements.
- Explain and use Ohm's law to find voltage, current, and resistance.
- Define and calculate energy and power in a circuit.
- Know the power rating of resistors.
- Explain energy losses and voltage drops in a circuit.

- Identify series circuits and use Ohm's law with them.
- Determine voltage effects and apply Kirchoff's voltage law in series circuits.
- Be able to use a series circuit as a voltage divider.
- Solve for total power in a series circuit.
- Identify ground points in a series circuit.
- Identify parallel circuits and use Ohm's law with them.
- Apply Kirchoff's current law.
- Determine parallel resistance.
- Use parallel circuits as current dividers.
- Find power in a parallel circuit. Recognize basic parallel circuit applications.
- Identify and analyze series-parallel circuits.
- Determine loading effects on a series-parallel circuit.
- Identify and use a Wheatstone bridge.
- Analyze circuits with multiple power sources and apply Thevenin's theorem.

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:

Laboratory assignments

Apply mathematical skills appropriate to an occupation.

Assessment:

Module tests and Homework.

Employ effective processes for resolving problems and making decisions.

Assessment:

Assigned Laboratories and Homework.

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

Assessment:

Multisim Laboratory Exercises.

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