

ETEC 105 DC Circuit Analysis Syllabus



COURSE INFORMATION

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Credits	3

DESCRIPTION

The study of Alternating Current as a continuation of the ETEC 105 (195T) Direct Current course (Pre-req). We will continue with the same text book, lab manual and use the Multisim simulation program if available. We will review what you learned in ETEC 105 and proceed to Electromagnetism, AC Current and Voltage, Capacitance, Induction, Transformers and further topics in the text as time allows.

COURSE OBJECTIVES

At the completion of this course students should be able to:

- 1) Describe the principles of magnetism and electromagnetism.
- 2) Describe the characteristics of capacitors and inductors, and identify and design capacitor and inductor circuits.
- 3) Describe the characteristics of transformers, and identify and design transformer circuits.
- 4) Describe the characteristics of simple passive filters, and identify and design simple passive filter circuits.
- 5) Be prepared to proceed to the hands-on EET113 lab course.

COURSE OVERVIEW

This course introduces the concepts of Alternating Current and Voltage. We will take a look back at Resistive series-parallel circuits then proceed to Electromagnetism, Capacitors, Inductors and Transformers. We will also look at some basic filter (RL & RC) electrical circuits if possible.

Although not defined as a pre-requisite, the ability to perform basic algebra (Math 90 or higher is a pre-requisite) will be an essential component for a student to be successful in this course!

The online Moodle course shell includes PowerPoint presentations and short video presentations (webcasts) to supplement reading materials. An internet connection with reasonable (DSL) bandwidth is recommended. If you haven't worked in Moodle please review the UMOonline 101 link on the right hand side of the class home page.

REQUIRED TEXTS/MATERIALS

Principles of Electronic Circuits; Ninth Edition; Thomas Floyd; Pearson Prentice Hall; 2010 (the text and lab manual are bundled)

Scientific Calculator (recommend TI 84-Titanium, TI 86, or TI 89)

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Multisim circuit simulation software – to purchase and download visit

<http://www.studica.com/us/en/National-Instruments/multisimstudentedition.html>

ASSESSMENT/GRADING POLICIES

90 - 100 = A

80 - 89 = B

70 - 79 = C

60 - 69 = D

GRADING SUMMARY

25% Homework Assignments

50% Exams

25% Lab Manual Assignments

TOPICAL OUTLINE

1. Magnetism and Electromagnetism
2. Alternating Current and Voltage
3. Capacitors
4. Inductors
5. Transformers
6. RC,RL,RLC and Filters Circuit Analysis (*as course flow allows)

DISABILITY ACCOMMODATIONS POLICY

Students with disabilities may request reasonable modifications by contacting me. The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. "Reasonable" means the University permits no fundamental alterations of academic standards or retroactive modifications.

