

# Electrical Circuits (PHYS 3123)

**Instructor:** Dr. Kevin Cornelius

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**Course Website:** <http://plaza.obu.edu/corneliusk/ec/>

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## Course Description:

This is an upper level college physics designed to introduce majors to the fundamental concepts of electrical circuit analysis with emphasis on direct-current applications. The goal is to provide an understanding of the techniques available to model simple and complex resistive circuits, as well as circuits that contain capacitors and/or inductors. This course is primarily geared toward engineering majors, but contains content that is well suited for regular physics majors.

## Textbook:

Fundamentals of Electric Circuits  
*Alexander and Sadiku, 5<sup>th</sup> ed.*

## Grading:

Grades will be determined from the following areas:

Homework:	45%
Projects:	10%
Tests:	45%

**Grades will NOT be posted.** Come see me anytime for your current grade.

A = 100% – 90%    B = 89% – 80 %    C = 79% – 70 %    D = 69% – 60 %    F < 60%

## Areas of Study:

Basic Concepts and Laws	(Ch. 1-2)	
Methods of Circuit Analysis	(Ch. 3-4)	
Operational Amp./Capacitor & Inductors	(Ch. 5-6)	
1 <sup>st</sup> and 2 <sup>nd</sup> Order Circuits (RC, RL & RLC)	(Ch. 7-8)	<b>Final:</b> Wed., Dec. 12 <sup>th</sup> @ 8:00 am

## Homework:

Homework will be assigned along with the due date for each assignment. No late assignments will be accepted! **No work shown = No credit given!**

**\*\* Extra credit reading summaries from the book will be accepted up until the day of the test over the current section. (These are listed on the website)**

## Tests:

Tests will be given at the end of each of the study sections as listed above:

### NOTE:

All hand-written notes, handouts and homework may be used on tests!

**No work shown = No credit given.**

No makeup exams will be given!

**Absences:**

*If you can pass this class without showing up, power to ya! However, don't come by my office and expect to get help on any assignments if you have not been showing up for class.*

**No Class**

There will be **NO** class on the following dates:

**Labor Day:** Sept. 3, **Fall Break:** Oct. 11 – 12, **Thanksgiving:** Nov 21 – 23.

**Integrity:**

Students at Ouachita are obligated to uphold the Covenant on Academic Honor, which reads in part, "I will refrain from all forms of academic dishonesty, and I will act responsibly when confronted with the knowledge of such behavior." For the possible consequences of any violation of this covenant, please see **The Tiger Handbook**.

**Disabilities:**

Ouachita Baptist University is committed to extending access and opportunity to those who have disabilities. To request modifications or accommodations due to a disabling condition, or for a copy of the University policy concerning modifications or accommodations, contact Dan Jarboe, University Counselor and ADA/504 Coordinator, in the Student Services Office. The office is located in Evans Student Center and the telephone number is 245-5591. You may email the University Counselor and ADA/504 Coordinator at [jarboed@obu.edu](mailto:jarboed@obu.edu).

**Cell Phone/Laptop Policy:**

Any individual who is caught using their cell phone during class or their laptop in an inappropriate way, the **CLASS** will be given **ONE** warning. After that, any additional violations will result in the lowering of a person's class average by one letter grade.

**Tips for Success:**

1. Read the textbook. This will provide a second presentation of the material covered in class.
2. Solve problems. Physics is a performance discipline just like athletics or music. It is not a subject that can be learned solely through reading, regular practice is required. Work through the examples for the current chapter in the textbook and as many additional odd numbered exercises at the end of each chapter as possible for which the answers are provided.
3. Get help. If you have tried steps one and two and are still having problems, get help. A tutoring schedule will be posted outside of the Physics Department offices. This service is free. Talk to your professor. Your difficulties are probably not as big as you think.
4. Turn in homework and labs on time. Some credit is better than none at all.
5. Take good notes. The tests are based on the class notes as well as homework.
6. For the ambitious students, recopy your notes after each lecture. Understanding may not come during class because information is coming hard and fast, but valuable insight often occurs as you go over the material again. This is also an excellent tool in preparing for tests.