

**Website:** <http://csserver.evansville.edu/~mr63>

**Text:** Alexander, Charles K, and Sadiku, Matthew N.O., Fundamentals of Electric Circuits, 5th ed., McGraw-Hill, 2013.

**Course Objectives:**

**Successful students will be able to:**

1. Analyze a AC circuit using Phasor Analysis.
2. Analyze a Circuit Using a systems approach using Fourier series, Fourier Transforms, or Laplace Transforms.
3. Analyze circuit that include circuit components that induce mutual coupling.
4. Use an oscilloscope to measure amplitude, frequency, and phase in the lab environment.
5. Program in Matlab.

**Software:**

1. LTSpice, This is available on the network in the labs and can be downloaded for personal use from <http://www.linear.com/designtools/software/ltspice.jsp>
2. Matlab V.7.11.0 Release 2010b. This is available on the network in the labs as the professional edition. If you want to use this on a home computer a student version is available for about \$100 dollars.

**Credit Hour Policy:**

This Course meets the federal requirements of 15 in-class hours plus an expected 30 hours of out-of-class work per credit hour;

**Lab Kits:**

Each student is required to purchase a tool kit consisting of breadboard, oscilloscope probes, meter leads, etc. The kit is available from the Electrical Engineering Department Office. See Mrs. Vicky Hasenour in KC 266.

**Course Structure:**

This course meets from 8 to 9:50am on Monday, Wednesday, and Friday mornings. The course is taught in an integrated lab/lecture format. The lab portion of the course will be done in teams of two.

**Notebooks:**

Each lab team will keep a notebook in which all lab activity is recorded. This notebook will be periodically collected and graded. Notebooks are available in the department office.

**Exams:**

All exams are open book and open notes. Students may not share notes, books, or calculators during exams. Notes should be hand written, no printed or copied material will be allowed. During the test you may be asked to place your phone on the corner of the desk face down to ensure they are not being used. ANYONE CAUGHT USING A CELL PHONE DURING AND EXAM WILL RECEIVE A

FAILING GRADE ON THE EXAM. This include checking the time, answering a text from mom...

**Reading Assignments:**

Reading assignments for each class session are printed on the attached schedule. Each student is expected to have read the assigned material *before* attending class.

**Grading:**

This class has four hour exams, graded homework, graded projects, a graded notebook, and a two-hour comprehensive final exam. Unannounced quizzes over lab projects will be counted as part of the homework grade. The four exams will count 66%, the graded quizzes and the projects will count 10%, the notebook grade will count 5%, and the final exam will count 19%. Some of the design projects will be done in multidisciplinary teams.

**Contact Information:**

**Email:** randall@evansville.edu  
**Phone:** 812-488-2498  
**Office:** KC 247

**Office Hours:**

MWF 10AM-11AM  
MW 1PM – 3PM

I can be contacted by email anytime between 8:00 AM and 8:00 PM M-F  
I will respond to email and weekend but only on a limited basis and if I have time and resources to do so.

**Disability Policy:**

It is the policy and practice of the University of Evansville to make reasonable accommodations for students with properly documented disabilities. Students should contact the Office of counseling and Health Education at 488-2663 to seek services or accommodations for disabilities. Written notification to faculty from the Office of Counseling and Health Education is required for academic accommodations.

**Honor Code:**

All students at the University of Evansville agree to the University honor code: I will neither give nor receive unauthorized aid, nor will I tolerate an environment that condones the use of unauthorized aid.

**Final exam is Monday, May2nd at 8:00AM**

Week Of	Monday	Wednesday	Friday
Jan. 9	CH 10 413-420 Phasors (Review) AC Analysis	CH 10 421-432 AC Analysis	<b>Matlab</b>
Jan 16	MLKJ Day	CH 11 458-467 Instantaneous and Average Power	CH 11 473-483 RMS Power Apparent Power
Jan 23	CH 11 481-490 Complex Power Power Factor Correction	CH 13 556-566 Applications	CH 13 574-580 Mutual Inductance
Jan 30	CH 12 519-524 Ideal Transformers	Exam 1 Review	<b>Exam 1</b>
Feb 6	CH 14 613-619 Transfer Function Decibel Scale	CH 14 619-629 Bode Plot	CH 14 629-637 Series Resonance Parallel Resonance
Feb 13	CH 14 637-648 Passive Filters Active Filters	CH 15 676-679 Laplace Transforms	CH 15 679-690 Properties of Laplace Transforms
Feb 20	CH 15 690-696 Partial Fraction Expansion	Inverse Laplace Transform	CH 15 697-705 Convolution
Feb 27	<b>Matlab</b>	Exam 2 Review	<b>Exam 2</b>
March 6	Spring Break	Spring Break	Spring Break
March 13	CH16 715-725 Circuit Element Models Circuit Analysis	CH 16 726-730 State Variables Transfer Functions	Fourier Series
March 20	CH 17 755-764 Symmetry Consideration	CH 17 764-774 Circuit Applications	CH 17 774-778 Average and RMS Power Exponential Fourier Series
March 27	CH 17 774-778 Average and RMS Power Exponential Fourier Series	CH 17 778-787 <b>Matlab</b>	NO Class Instructor Out of Town
April 3	Exam 3 Review	<b>Exam 3</b>	EASTER
April 10	CH 18 829-835 Fourier Transform	CH 18 809-816 Properties of Fourier Transform	CH 18 816-829 Circuit Applications Parseval's Theorem
April 17	CH 18 835-836 Comparing Fourier and Laplace	Review Exam 4	<b>Exam 4</b>
April 24	Final Exam Review	Reading Study Day	