

Website: <http://csserver.evansville.edu/~blandfor>

Text: Alexander, Charles K, and Sadiku, Matthew N.O., Fundamentals of Electric Circuits, 6th ed., McGraw-Hill, 2017.

Reference: Nahvi, Mahmood and Edminister, Joseph, Schaum's outlines of Electric Circuits, 4th ed., McGraw-Hill, 2003.

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.8.1.604 Release 2016b 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.

Lab Kits:

Each student is required to purchase a toolkit 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 10:15am on Tuesday and Thursday 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.

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 three hour exams, graded homework, graded projects, a graded notebook, two graded lab practical exams, and a two-hour comprehensive final exam. Unannounced quizzes over lab projects will be counted as part of the homework grade. The three exams will count 56%, the graded homework and the projects will count 20%, the notebook grade will count 5%, and the final exam will count 19%. Some of the design projects will be done in multidisciplinary teams. *All students must pass the lab practical exam in order to pass the course regardless of exam grades. The lab practical may be repeated.*

Contact Information:

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Final exam is Friday, December 8 at 4:30pm

Tuesday	Thursday
	Aug. 24 Ch 1 pp. 3-23 Intro and overview Charge, current, voltage, power and energy <i>Lab 1:</i>
Aug. 29 Ch 1-2 pp. 17-43 The electric bill Ohm's Law. Nodes branches and loops Kirchhoff's Laws <i>Lab 2:</i>	Aug. 31 Ch 2 pp. 37-64 Kirchhoff's Laws, Series and parallel resistive networks <i>Lab 3:</i>
Sept. 5 Ch 2 pp. 58-64 dc meter movements and loading, Review <i>Lab 4:</i>	Sept. 7 Ch 1-2 Hour Exam 1
Sept. 12 Ch 3 pp. 80-95 Nodal analysis with current and voltage sources <i>Lab 5:</i>	Sept. 14 Ch 3 pp. 95-110 Mesh analysis with current and voltage sources Analysis by inspection <i>Lab 6:</i>
Sept. 19 Ch 3-4 pp. 98-110, 126-137 Analysis by inspection Linearity property, Superposition <i>Lab 7:</i>	Sept. 21 Ch 4 pp. 137-150 Thevenin's Theorem Norton's Theorem <i>Lab 8:</i>
Sept. 26 Ch 4-5 pp. 148-157, 174-183 Maximum Power Transfer Intro to Op amps. Inverting and noninverting amplifier <i>Lab 9:</i>	Sept. 28 Ch 5 pp. 183-197 Summing and difference amplifier <i>Lab 10:</i>
Oct. 3 Ch 5 pp. 174-197 Op amps, Review	Oct. 5 Ch 3-5 Hour Exam 2
Oct. 10 Fall Break	Oct. 12 Ch. 6 pp. 214-231 Capacitors and inductors <i>Lab 11:</i>
Oct. 17 Ch.6 pp. 231-237 Applications of capacitors and inductors in op amps <i>Lab 12:</i>	Oct. 19 Ch 7 pp. 252-263 Source free RL and RC circuits <i>Lab 13:</i>
Oct. 24 Ch 7 pp. 263-282 Impulse and step response of RC and RL circuits <i>Lab 14:</i>	Oct. 26 Ch 7 pp. 282-297 First order op amp circuits Transient analysis and applications <i>Lab 15:</i>
Oct. 31 Ch 8 pp. 312-324 Initial values, Source free series RLC circuits <i>Lab 16:</i>	Nov. 2 Ch 8 pp. 324-334 Step response series RLC LT Spice simulation <i>Lab 17:</i>
Nov. 7 Lab Practical	Nov. 9 Review Ch 6-8 Last day to withdraw with a W is Nov. 10
Nov. 14 Hour Exam 3	Nov. 16 Ch 9 pp. 368-394 Sinusoids and phasors <i>Lab 18:</i>
Nov. 21 Ch 9 pp. 385- 400 impedance and admittance, the frequency domain <i>Lab 19:</i>	Nov. 23 Thanksgiving
Nov. 28 Ch 10 pp.412-424 Nodal Analysis, complex numbers Thevenin's Theorem	Nov. 30 Ch 10 pp.494-438 Thevenin, LT Spice AC analysis
Dec. 5 Course review	

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