

ECEN 2632 - Basic Circuit Theory 1

Fall 2026 Syllabus, Section 01, CRN 40728,

Credit hours: 3

Instructor

Robert Caven

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Public Instructor Information

Instructor Title: Senior Lecturer

Instructor Professional Qualifications: MS Engineering, Youngstown State University, 1989. BEE, Kettering University, 1984.

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Course Description

2632. Basic Circuit Theory 1. Basic principles of linear circuits. Circuits concepts and laws, methods of analysis, network theorems. Source-resistor circuits. Inductors and capacitors. Analysis of AC circuits using phasors; impedance and admittance. Power calculations in DC and AC circuits. Prereq. or Coreq.: ECEN 2611 and MATH 1572 or MATH 1572H. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Fundamentals of Electric Circuits	Alexander and Sadiku	9781260226409 (print version); 8220130704308 (online access)

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Chapter 1	Charge, voltage, current; active and passive power; energy	
8/31	Chapter 2	Kirchhoff's laws: KVL and KCL	
9/7	Chapter 2	Ohm's law; series and parallel resistive circuits	
9/14	Chapter 3	Node voltage method	
9/21	Chapter 3	Mesh current method	
9/28	Chapter 4	Superposition; Thevenin's theorem	
10/5	Chapter 4	Norton's theorem	
10/12	Chapter 4	Source transformations; maximum power transfer	
10/19	Appendix B, Chapter 9	Complex numbers; phasor representation of AC voltages and currents	
10/26	Chapters 6 and 9	Capacitance and inductance; complex impedance	
11/2	Chapters 9 and 10	Steady-state AC circuit analysis using phasors	
11/9	Chapter 11	Complex power and power factor correction	
11/16	Chapters 9, 10, 11	Steady-state AC circuit examples	

11/23	Chapter 6	RLC circuits in DC steady state
11/30	Review chapters 1-4, 6, 9-11	Review
12/7		Final exam week

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.