

EE 206 Circuit Analysis

1. **Course number and name:** EE 206, Circuit Analysis
2. **Credits:** 4, **Contact hours:** 3 per week (lecture).
3. **Instructor:** Chao You
4. **Textbook:** Hayt, Kemmerly, and Drubin, *Engineering Circuit Analysis*, 7th Edition
5. **Specific course information:**
 - a. **Catalog description:** The study of linear circuits, component models, circuit laws, transient analysis, design rules, and CAD.
 - b. **Prerequisite:** Math 166 both with a grade of C or better. Co-requisite of Physics 252. Math 129
6. **Specific goals:**
 - a. The specific outcomes of instruction are listed below. b. The corresponding student outcomes are enclosed in parentheses. The student should be able to:
 - Learn the basic Kirchhoff laws, (A, E, K)
 - Learn the basic operation of resistor, capacitor and inductor. (A, E, K)
 - Learn circuit analysis method, nodal and mesh analysis. (A, C, E, K)
 - Learn basic concept of operational amplifier. (A, C, E, K)
 - Analysis basic RL and RC circuit. (A, C, E, K)
 - Learn the concept of steady-state analysis. (A, C, E, J, K)
 - Have the hand-on experience of lab tools. (A, B, C, D, E, F, G, J, K)
 - Learn to use the basic circuit analysis and simulation software.(A, B, C, D, E, F, G, J, K)

7. Brief list of topics to be covered

<u>Lecture</u>	<u>Topics</u>
1	Course Introduction and Pre-test
2	Charge, current, voltage, power 1
3	Charge, current, voltage, power 2
4	Circuit elements
5	Ohm's Law
6	KCL
7	KVL
8	Two node circuits
9	Resistor networks
10	Voltage and Current Division
11	Review

12	Exam 1
13	Nodal Analysis
14	Supernodes
15	Mesh Analysis
16	Analysis Issues/review
17	Complex Numbers
18	Superposition
19	Source Transformations
20	Thevenin and Norton Equiv. Ckts. 1
21	Thevenin and Norton Equiv. Ckts. 2
22	Maximum Power Transfer
23	Delta-wye conversion
24	Op amps 1
25	Op amps 2
26	Review
27	Exam 2
28	Capacitors
29	Inductors
30	Capacitors and inductor issues
31	Solving RL circuits
32	Solving RC circuits
33	Pulse response, driven circuits
34	sinusoids and phasors
35	phasor relationships and impedance
36	ac steady-state analysis 1
37	ac steady-state analysis 2
38	Phasor diagram
39	Review
40	Exam 3