



Course Syllabus

Course: EET K119 Electric Circuits and Systems

Prerequisites: EET*K105

Pre/Corequisites: MAT* K137

Instructor: Michael Gentry

mgentry@trcc.commnet.edu 860-215-9428

Office Hours: As Posted

Text: Introductory Circuit Analysis 13th edition Robert Boylestad.
With Lab manual

Other Required Course Materials: Scientific Calculator–
Calculators should be available at all times

Course Detail:

Course #	Credits	Title	Day	Time	Room
EET K119	3.00	Electric Circ & Syst	Wednesday	8 :00am - 12 :20 PM	B213

Course Description:

This course provides an introduction to the basic concepts of AC electric circuits. Voltage, current, resistance, energy, and power relationships are introduced. Circuit analysis of basic series and parallel circuits is covered. Instruments and techniques of electrical measurement for AC circuits are also discussed. The lab portion of this course will supplement the course Electric Circuits & Systems. Students will apply the concepts learned in the classroom and gain practical hands-on experience making electrical measurements using a variety of test instruments.

Course Format: Classes will consist of topic discussions, classroom exercises, projects and laboratory exercises. Classes will move fluently between these activities.

Course Grading:	Quizzes, Exams	50%
	Labs	25%
	Homework	15%
	Class Participation, Technical Aptitude, Professional Attitude	10%

Attendance/Timeliness: Attendance is mandatory at all class and lab sessions. Tardiness of attendance and assignments will have a significant negative impact on grading.

All students are also required to maintain an online learning portfolio in Digication that uses the college template. The Digication Portfolio may be separate from the Course Portfolio. Specific items may be required for upload to the Digication



Portfolio. The instructor will give specific direction concerning course content for upload to the Digication Portfolio.

TRCC EET Stated Outcomes

1. Students will practice the skills needed to work effectively in teams and as an individual.
2. Students will demonstrate the ability to use appropriate mathematical and computational skills needed for engineering technology applications.
3. Students will combine oral, graphical, and written communication skills to present and exchange information effectively and to direct technical activities.
4. Students will know of a professional code of ethics.
5. Students will describe concepts relating to quality, timeliness, and continuous improvement.
6. Students will describe how the concepts of electric circuits, electrical measurements, digital electronic devices, programmable logic circuits, electromechanical and automated systems, affect the design, maintenance, and operation of electrical systems.
7. Students will illustrate an ability to think critically and identify, evaluate and solve complex technical and non-technical problems; demonstrate creativity in designing problem solutions; and conduct and interpret experimental data and outcomes.
8. Students will recognize actions and acts of professionalism that allows them to become informed and participating citizens cognizant of ethics, civic duty, and social responsibility.
9. Students will recognize the need to be lifelong learners.

K119 Course Outcomes

1. Mastery of Electrical Technology concepts as defined in the course syllabus
2. Knowledge of electrical quantities, units and relationships
3. Demonstrate an ability to build and test electrical circuits and systems
4. Demonstrate an ability to analyze and solve problems relating to basic electrical systems
5. Demonstrate technician level oral and written communication skills
6. Demonstrate an ability to engage in self-directed professional development
7. Demonstrate proper professional and ethical behavior
8. Demonstrate a commitment to quality, timeliness and continuous improvement

Sequence	Fall 2018	EET 119	Mike Gentry	Wed 0800 -1220		
Week	Text Note 1	PPT Note 2	Lab Note 3	Homework Note 4	Workbook Note 5	Notes Note 6
1	13 Sinusoidal Alternating Waveforms	Lesson14 Boyle. Chap 13	AC Lab 1 Math Review AC Lab 2 Oscilloscope Function generator	13.1,19,31,35,49	Chapter1	Sine Wave Notes Intro to AC and Sinusoids Info on Phasors
2	14 Basic Elements and Phasors	Lesson 15 Boyle. Chap 14	Reactance 3	14.19,37,39,57 Phasors Problems	Chapter 1	Fourier Analysis Overtones
3			4	Extra 14.41,43,45,49,53		
4	15 Series AC Circuits	Lesson 16 Boyle. Chap 15	5	15.13,15,17,21 Look at 15.1,3,5,7	Chapter 1	Exam 1 on Review (Basic Elements) Sinusoidal Phasors Chap. 13,14 Labs 1,2,3
5	16	Lesson 17 Boyle. Chap 16	9	16.1,5,9,13	2	AC Series circuits

6	17	Lesson 18 Boyle. Chap 17	10	17.1,3,5,7,11,15,17	3	AC Parallel circuits
7	18	Lesson 19 Boyle. Chap 18	11	18.3,17,39,41,45,47	4	AC Series parallel circuits
8	19 AC Thevin Max Power	Lesson 20	12,13	19.3,5,7,15,17,49	5,6	Exam 2 On AC Circuits Series, parallel & series/parallel Chap 15,16,17 Notes: AC Thevin Max Power Norton
9	20 Power factor	Lesson 21 Lesson 22 Boyle. Chap 20	16	20.1,3,5,7,11	7	AC power, Power triangle Power Correction
10	21 Resonant Circuits	Lesson 23 Boyle. Chap. 21	14,15	21 19,23 Plots in Psice or Multisim	8	Resonance Circuits
11	22 Filters	Lesson 24 Boyl. Chap 22	18	22 1,3,5,7,19,23		Filters Exam
12	12, 23 Transformers	Lesson 25,26 Magnetism	19	12 23. 3,5,7,11,13,15	10	Mag. Transformers

		Transformer s Boyle. Chap 23				Transformers and reflected Impedance
13	24 Poly Phase Systems	Lesson 32,33 Boyle. Chap 24	21	24.1,7,15,17	9	3 Phase Sources loads Power
		Lesson 32	22	TBD		Per Phase Analysis
14	24			TBD		AC Generators
15						Exam

All material is in Blackboard. Hard copies will be available the week before they are covered in Class. All material referenced here is testable in exams. Material covered in Lectures, PPT. lecture notes, HW, Labs and Text

Notes 1. Text Boylestad Introductory Circuit Analysis Edition 13

2. Boylestad PPT under Boylestad PPT and lessons are under MEG PPT

3. Labs from Boylestad Lab Manual. Labs are due at the beginning of the next scheduled class

4. Homework from Boylestad Edition 13 Homework is due 1 week after lecture is given on Chapter

5. Workbook available for download on J Drive Author J Fiore Mohawk valley CC

6. Notes are under Notes in Blackboard

Date	Topic	Reading	Homework	lab
1/23/18	Introduction, Course Policy Review Voltage & Current	1.3-1.11, 2.1-2.5	Hw1 CH1 : 13, 33, 41 CH2: 9, 15, 21	1,2
1/30/18	Resistance and Ohm's Law Power and Energy	3.1, 3.2, 3.4-3.9, 3.15, 4.2, 4.4-4.6	Hw2 CH3: 5, 35, 37 CH4: 9, 13, 49, 55	3
2/6/18	Series Circuits	5.1-5.6	Hw3 CH5: 3, 9, 17, 27, 41	4,5
2/13/18	Parallel Circuits	6.1-6.8	Hw4 CH6: 13, 25, 29, 35, 39	6,7
2/20/18	Series Parallel Circuits	7.1-7.5	Hw5 CH7: 5, 15, 35, 45	8
2/27/18	Current Sources/ Source Conversion	8.1-8.3	Hw6 CH8: 7, 9, 11, 13	9
3/6/18	Nodal Analysis I	8.6	HW7 CH8: 15, 41 (a,c,d)	10
3/13/18	No Classes			
3/20/18	Nodal Analysis II		HW8 CH8: 53	11
3/27/18	Thevenin's Theorem	9.3	Hw9 CH9: 9, 11, 31, 35	12
4/03/18	Capacitors/Inductors	10.1-10.4, 10.11, 10.12 11.1-11.4, 11.11-11.13	Hw10 CH10: 3, 7, 57 CH11: 3, 4	13

4/10/18	Capacitor Transient Analysis	10.5-10.10	CH13: 1, 19Hw11 CH10: 29, 43, 51	14
4/17/18	Inductor Transient Analysis	11.5-11.10	Hw12 CH11: 21, 23, 37	15,16
4/24/18	Magnetic Circuits	12	TBD	17
5/1/18	Sinusoids Review	13.1-13.2, 13.4-13.8	Hw13, 31, 35, 49	19
5/8/18	Phasors/Complex Numbers and Impedance	14	Ch 14:19,37,39,57	20

Introduction, Course Policy Review	1.3-1.11, 2.1-2.5	Voltage and Current Notes
Voltage & Current		
Resistance and Ohm's Law	3.1, 3.2, 3.4-3.9, 3.15, 4.2, 4.4-4.6	Resistance and Ohm's Law Notes
Power and Energy		Power and Energy Notes
Series Circuits	5.1-5.6	Series Circuits Notes
Parallel Circuits	6.1-6.8	Parallel Circuits Notes
Series Parallel Circuits	7.1-7.5	Series Parallel Circuits Notes
Current Sources/ Source Conversion	8.1-8.3	Current Sources/ Source Conversion Notes
No classes		
Nodal Analysis I	8.6	Nodal Analysis I Notes
Nodal Analysis II		Nodal Analysis II Notes
Thevenin's Theorem	9.3	Thevenin's Theorem Notes
Capacitors/Inductors	10.1-10.4, 10.11, 10.12 11.1-11.4, 11.11-11.13	Capacitors and Inductors Notes
Capacitor Transient Analysis	10.5-10.10	Capacitor Transient Analysis Notes
Inductor Transient Analysis	11.5-11.10	Inductor Transient Analysis Notes

Review (6 Week Exam)	Review Package	Review Package Sol
Review (DC Practical Exam)		
Sinusoids Review	13.1-13.2, 13.4-13.8	
6 Week Exam		
X period		
Phasors/Complex Numbers and Impedance	14.1-14.10, 14.12	Phasors, Complex Numbers