When and where	Lecture NI 2103 11:10-12:30 – T,R	Lab (Sec 002) – NE 2380 – 9:10-10:50 T
Instructor	Prof. Wm Ted Evans, PhD, PE (Ohio)-Office: NE 1607, Phone 419-530-3349, cell 419-343-3681 Email: William.evans@utoledo.edu web: www.hybridplc.org	
Office Hours	9:30-12:00 M, W	
Prerequisite	EET 1010 with a minimum grade of D- and (MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D-)	
Textbooks	AC Electrical Circuit Analysis: A Practical Approach, James M. Fiore, a free OER text Laboratory Manual for AC Electrical Circuit Analysis. James M. Fiore (OER) You may find the text at the following sites or from my website above: https://www2.mvcc.edu/users/faculty/jfiore/index.cfm https://www2.mvcc.edu/users/faculty/jfiore/freebooks.html or just google james fiore mvcc to see the above websites Also, Prof. Fiore has a youtube website that covers all the subject material in detail. AC Circuits – Davis – second text on website	
Useful References	Bojack 37 Values 480 Pcs Electronic Fun Kit – Amazon.com Students given thia kit for use which they keep and use through their time at U of Toledo	
Grading	**Quizes/Problems 20%, Labs 20 %, Hour Exam I 20%** **Hour Exam II 20%, Final Exam 20 % (Comprehensive)** **(A >= 90, B >= 80, C > = 70, D > = 60)**	
	1. No eating, drinking, or smoking in classrooms. 2. There are no make-up exams for this course. If you have a problem or conflict and cannot attend an exam, let me know beforehand and we will try to work something out. No credit will be given for a missed exam that we haven't made arrangements about beforehand unless you have a *really excusable* emergency. Cell phone use will not be allowed. If you do not have a calculator, buy one and bring it to class. ***Cheating is not allowed and will be punished by rules of U of Toledo Student Handbook.***	
Catalog descriptions	This course involves transient analysis of first order, reactive DC circuits and steady state analysis of reactive circuits under AC conditions. Frequency response, three-phase analysis, oscilloscope usage and PSpice simulation methods are included.	
Topics and reading assignments - Course Objectives:	In this course students are expected to: 1. Develop an understanding of the analytical techniques used for reactive circuits under DC and steady state AC conditions. 2. Develop an understanding of the laboratory skills used to evaluate reactive circuits under DC and steady state AC conditions, work with lab partners and produce well-written report. 3. Analyze and interpret laboratory data from basic reactive circuits. 4. Identify and solve reactive circuit problems under DC and steady state AC conditions.	
Course Outline -Major Content Areas	•Sinusoidal wave properties. • Complex numbers and phasors. • Properties of capacitors and their behavior under DC conditions. • Properties of inductors and their behavior under DC conditions. • Behavior of transformers. • Steady state behavior of RC circuits under AC conditions. • Steady state behavior of RL circuits under AC conditions. • Steady state behavior of RLC circuits under AC conditions. • Analyses of basic filter circuits. • Superposition, Thevenin's theorem and Norton's theorem under AC conditions. • An introduction to three phase systems.	

Labs	• An introduction to the Multisim 7 simulation software with sinusoidal sources
	• The oscilloscope and the signal generator
	• Capacitors – RC circuits and time constants
	• Measuring RC time constants with an oscilloscope
	• Inductors – RL circuits and time constants
	• Series RC circuits with AC sources
	• The frequency response of a series RC circuit
	• Series / parallel RC circuits with AC sources.
	• Series RL circuits with AC sources.
	• Series RLC resonant circuits. • Parallel RLC resonant circuits.
	Schedule of Classes
1-16-24	Review Ch. 8 - DC - Fiore Video 1
1-18-24	Review Ch. 8 - DC - Fiore – Ch. 8 – Pg 291 #24, 25 Video 2
	Problems Ch. 8 due 1-25-24
1-23-24	Review Ch. 9 - DC - Fiore – Ch. 9 - Lab 1 Video 3
1-25-24	Review Ch. 9 - DC - Fiore – Ch. 9 – Pg 320 #11,12, 29, 30 Video 4
	Problems Ch. 9, Lab 1 due 2-1-24
1-30-24	Review Ch. 10 – DC Fiore – Ch. 10 - Pg 352 #17, 18, 19 Lab 2 Video 5
2-1-24	Review Ch. 1 – AC Fiore – Ch. 1 – Pg 39 #1-12, #25-34 Video 6
	Problems Ch. 10, Ch. 1, Lab 2 due 2-8-24
2-6-24	Review Ch. 2 – AC Fiore – Ch. 2 Pg 66 #1-12, 24, 28, 32, 33, 43-46 Lab 4 Video 7
2-8-24	Review Ch. 3 – AC Fiore – Ch. 3 - Pg 102 #5, 13, 16, 23-28 Video 8
	Problems Ch. 2, 3 due 2-9-23, Lab 4 due 2-15-24
2-13-24	Review Ch. 3 – AC Fiore – Ch. 3 Lab 5 Video 9
2-15-24	Review Ch. 4 – AC Fiore – Ch. 4 - Pg 135 #11-14 Video 10
	Lab 5 due 2-22-24
2-20-24	Review Ch. 4 – AC Fiore – Ch. 4 - Pg 137 #23, 24, 27, 28 Lab 6 Video 11
2-22-24	Review Ch. 5 – AC Fiore – Ch. 5 - Pg 188 #5, 7, 19, 37, 40, 41 Video 12
	Problems Ch. 4, 5 due 2-29-23, Lab 5 due 2-22-24
2-27-24	Test 1 No Lab
2-29-24	Test 1 returned, all homework, labs through lab 6 due. Video 13
3-4 ro 3-7-24	Spring Break
3-12-24	Review Ch. 6 – AC Fiore – Ch. 6 - Pg 249 #43
3-14-24	Review Ch. 7 – AC Fiore – Ch. 7 – Pg 292 #29
3-19-24	Review Ch. 8 – AC Fiore – Ch. 8 - Pg 334 #19, 21
3-21-24	Review Ch. 9 – AC Fiore – Ch. 9 – Pg 366 #3, 7
3-26-24	Review Ch. 10 – AC Fiore – Ch. 10
3-28-24	
4-2-24	
4-4-24	
4-9-24	
4-11-24	
4-16-24	
4-18-24	
4-23-24	
4-25-24	
4-30-24	