

<b>When and where</b>	Lecture Palmer 3060 12:55-2:15 – T,R	Lab (Sec 002) – NE 2380 – 9:10-10:50 T
<b>Instructor</b>	Prof. Wm Ted Evans, PhD, PE (Ohio)-Office: NE 1607, Phone 419-530-3349, cell 419-343-3681 Email: <a href="mailto:William.evans@utoledo.edu">William.evans@utoledo.edu</a> web: <a href="http://www.eng.utoledo.edu/~wevans">www.eng.utoledo.edu/~wevans</a>	
<b>Office Hours</b>	8:00-9:30 T, 8:00-11:30 R	
<b>Prerequisite</b>	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-)	
<b>Textbooks</b>	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: <a href="https://www2.mvcc.edu/users/faculty/jfiore/index.cfm">https://www2.mvcc.edu/users/faculty/jfiore/index.cfm</a> <a href="https://www2.mvcc.edu/users/faculty/jfiore/freebooks.html">https://www2.mvcc.edu/users/faculty/jfiore/freebooks.html</a> 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	
<b>Useful References</b>	ELEGOO Upgraded Electronics Fun Kit w/Power Supply Module, Jumper Wire, Precision Potentiometer, 830 tie-Points Breadboard for Arduino, STM32 by <a href="#">ELEGOO</a>	
<b>Grading</b>	<b>Quizzes/Problems 15%, Labs 20 %, Hour Exam I 15%</b> <b>Hour Exam II 15%, Hour Exam II 15%, Final Exam 20 % (Comprehensive)</b> <b>(A &gt;= 90, B &gt;= 80, C &gt;= 70, D &gt;= 60)</b>	
	<ol style="list-style-type: none"> <li>1. No eating, drinking, or smoking in classrooms.</li> <li>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 <i>really excusable</i> emergency. Cell phone use will not be allowed. If you do not have a calculator, buy one and bring it to class. <b><i>Cheating is not allowed and will be punished by rules of U of Toledo Student Handbook.</i></b></li> </ol>	
<b>Catalog descriptions</b>	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.	
<b>Topics and reading assignments - Course Objectives:</b>	<p>In this course students are expected to:</p> <ol style="list-style-type: none"> <li>1. Develop an understanding of the analytical techniques used for reactive circuits under DC and steady state AC conditions.</li> <li>2. Develop an understanding of the laboratory skills used to evaluate reactive circuits under DC and steady state AC conditions.</li> <li>3. Analyze and interpret laboratory data from basic reactive circuits.</li> <li>4. Work effectively in the laboratory with lab partners.</li> <li>5. Identify and solve reactive circuit problems under DC and steady state AC conditions.</li> <li>6. Communicate the results of circuit analyses in written reports.</li> </ol>	

<b>Course Outline - Major Content Areas</b>	<ul style="list-style-type: none"> <li>• Sinusoidal wave properties.</li> <li>• Complex numbers and phasors.</li> <li>• Properties of capacitors and their behavior under DC conditions.</li> <li>• Properties of inductors and their behavior under DC conditions.</li> <li>• Behavior of transformers.</li> <li>• Steady state behavior of RC circuits under AC conditions.</li> <li>• Steady state behavior of RL circuits under AC conditions.</li> <li>• Steady state behavior of RLC circuits under AC conditions.</li> <li>• Analyses of basic filter circuits.</li> <li>• Superposition, Thevenin's theorem and Norton's theorem under AC conditions.</li> <li>• An introduction to three phase systems.</li> </ul>
Labs	<ul style="list-style-type: none"> <li>• An introduction to the Multisim 7 simulation software with sinusoidal sources</li> <li>• The oscilloscope and the signal generator</li> <li>• Capacitors – RC circuits and time constants</li> <li>• Measuring RC time constants with an oscilloscope</li> <li>• Inductors – RL circuits and time constants</li> <li>• Series RC circuits with AC sources</li> <li>• The frequency response of a series RC circuit</li> <li>• Series / parallel RC circuits with AC sources.</li> <li>• Series RL circuits with AC sources.</li> <li>• Series RLC resonant circuits. • Parallel RLC resonant circuits.</li> </ul>
Schedule of Classes	
1-18-22	Review Ch. 8 - DC - Fiore – Assign various problems end of Ch. 8
1-20-22	Review Ch. 9 - DC - Fiore – Assign various problems end of Ch. 9
1-25-22	Review Ch. 10 – DC Fiore – Assign various problems end of Ch. 10
2-1-22	Review Ch. 1 – AC Fiore – Assign various problems end of Ch. 1
2-8-22	Review Ch. 2 – AC Fiore – Assign various problems end of Ch. 2
2-15-22	Review Ch. 3 – AC Fiore – Assign various problems end of Ch. 3
2-22-22	Review Ch. 4 – AC Fiore – Assign various problems end of Ch. 4
3-1-22	Review Ch. 5 – AC Fiore – Assign various problems end of Ch. 5
3-15-22	Review Ch. 6 – AC Fiore – Assign various problems end of Ch. 6
3-22-22	Review Ch. 7 – AC Fiore – Assign various problems end of Ch. 7
3-29-22	Review Ch. 8 – AC Fiore – Assign various problems end of Ch. 8
4-5-22	Review Ch. 9 – AC Fiore – Assign various problems end of Ch. 9
4-12-22	Review Ch. 10 – AC Fiore – Assign various problems end of Ch. 10