

COURSE SYLLABUS

Course Title:	Circuit Theory I	Date submitted:	4/30/2018 (18-36)	
Department:	Advanced Manufacturing Technology			
Curriculum:	Technology Studies			
Course Descriptors: <small style="color: red;">Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.</small>	Course Code: (eg. ACC*101) MFG*137 Course Type: B A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: Internship M: Seminar P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio Elective Type: G AH: Art History E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science Credit Hours: 3 Developmental: (yes/no) No Lecture: 0 Clinical: 0 Contact Hours: Lab: 3 Studio 0 Other: 0 TOTAL: 3 Class Maximum: 24 Semesters Offered: Fall	Prerequisites: <div style="border: 1px solid black; padding: 5px; min-height: 100px;">None</div>		
	Corequisites: <div style="border: 1px solid black; padding: 5px; min-height: 100px;">None</div>			
	Other Requirements: <div style="border: 1px solid black; padding: 5px; min-height: 100px;">None</div>			
	Catalog Course Description:	Circuit Theory I is an introduction to direct current (DC) circuits. Circuit Theory I will introduce the student to electrical/electronic components; the nature of electricity (voltage, current, and resistance); Ohm's Law of measurement; the concept of energy and power; types of circuits (series, parallel, and series-parallel); Thevenin's and Norton's Theorems of circuit simplification, and magnetism and electro magnetism.		
	Topical Outline: <small style="color: red;">List course content in outline format.</small>	<ol style="list-style-type: none"> 1. Components, Quantities, and Units 2. Voltage, Current, and Resistance 3. Ohm's Law 4. Energy and Power 5. Series Circuits 6. Parallel Circuits 		

	<ol style="list-style-type: none"> 7. Series-Parallel Circuits 8. Circuit Theorems and Conversions 9. Branch, Mesh, and Node Analysis 10. Magnetism and Electromagnetism
<p>Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p>	<p>Upon successful completion of this course, the student will be able to do the following:</p> <p>COURSE:</p> <ol style="list-style-type: none"> 1. demonstrate an understanding of electrical components, electrical and magnetic quantities and their units, scientific and engineering notations, and metric conversion 2. demonstrate an understanding the theory of electrical structure, voltage, current, resistance, and electrical circuit and their measurement 3. demonstrate an understanding of Ohm's Law and apply Ohm's Law to the measurement of current, voltage, and resistance in a circuit 4. demonstrate an understanding of the concepts of energy and power, power in circuits, resistance, and power supply 5. demonstrate an understanding of the concept of a series circuit and of its physical construction, and demonstrate an understanding of the application of Ohm's law and Kirchhoff's voltage law to a series circuit 6. demonstrate an understanding of a concept of a parallel circuit and of its physical construction, and demonstrate an understanding of the application Ohm's and Kirchhoff law to a parallel circuit 7. demonstrate an understanding of the concept of a series-parallel circuit and of its physical construction, and demonstrate an understanding of the application of Ohm's and Kirchhoff's laws to a series-parallel circuit 8. demonstrate an understanding of superposition theorem to circuit analysis and an understanding of Thevenin's and Norton's theorems of circuit simplification 9. demonstrate an understanding of simultaneous equations in branch current measurements, an understanding of the application Kirchhoff voltage in current laws as they apply to branch, mesh, and node analysis 10. demonstrate an understanding of the principles of magnetism and of electromagnetism
	<p>PROGRAM: <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i></p>
	<p><u>Electronics Technology Certificate and A.S. Degree</u></p> <ol style="list-style-type: none"> 1. demonstrate an understanding of Shop Safety 2. demonstrate an understanding the theory of electrical structure, voltage, current, resistance, and electrical circuit and their measurement 3. demonstrate an understanding of the basic laws of arithmetic 4. demonstrate an understanding of several number systems and codes that are the foundation of digital theory and digital applications 5. make comparisons with personal computers; as well as, develop an understanding

	<p>of its origin and growth since conception</p> <p>6. demonstrate an understanding of the fundamentals of Automated Manufacturing systems</p>
<p>Evaluation: List how the above outcomes will be assessed.</p>	<p>GENERAL EDUCATION: <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p>No General Education outcomes.</p> <p>Assessment will be based on the following criteria: tests and quizzes</p>
<p>Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p>	<p>Required: None</p> <p>Desired: None</p>
<p>Textbook(s)</p>	<p><u>Principles of Electric Circuits, Conventional Current Version</u> Thomas L. Floyd, latest edition.</p>