

School of Engineering and Computer Science
ECE 101: Introduction to Electrical Engineering
Master Syllabus

Catalog Data:	ECE 101: Introduction to Electrical Engineering; 2 credits (1-3) Introduction to the field of electrical engineering and the fundamental concepts behind electronic devices and systems.		
Class Schedule:	One lecture hour per week, for one semester.		
Laboratory Schedule:	One 3-hour lab session per week, for one semester.		
Prerequisites by Course:	Math 106, or a minimum ALEKS math placement score of 80%.		
Prerequisites by Topic:	An understanding of algebra, basic integral and differential calculus.		
Typical Text:	E. D. Gates, <i>Introduction to Electronics, 6th Edition</i> , Thompson Delmar Learning, 2012, ISBN 978-1-111-12853-1		
Course Coordinator:	Dr. John Lynch		
Course Objectives:	<ol style="list-style-type: none"> 1. Familiarity with the basic concepts of Ohm's Law and Kirchoff's Voltage and Current Laws. 2. Understanding and ability to apply basic circuit analysis. 3. Understanding of basic electronic component models and practical knowledge of basic electronic circuit construction. 4. Development of teamwork skills, organization and task management. 5. Students will construct prototype circuits in the laboratory and perform testing and measurement using laboratory instruments. 		
Topics Covered:	<ol style="list-style-type: none"> 1. Introduction to voltage, current, Ohm's law, Kirchoff's laws 2. Electronics laboratory instruments and measurement 3. Resistor, capacitor, inductor circuits 4. Time-varying signals 5. Diodes, bipolar and field-effect transistors 6. Operational amplifiers 7. Basic digital electronic circuits, logic states, gates 		
Lab Experiments and Activities:	Laboratory projects will be conducted in five areas: digital logic circuits, RF circuits, electronic component characteristics, simple filters and amplifiers, and laboratory instrumentation.		
Course Outcomes:	Students will be able to:		
	Assessed for Student Outcomes	<ol style="list-style-type: none"> 1.a. Demonstrate knowledge of Ohm's law and Kirchoff's law to DC circuits. 4.b. Recognize ethical issues in the practice of electrical engineering using the IEEE Code of Ethics. 6.b. Use a variety of equipment and techniques to measure voltage, current, resistance, frequency. 7.a. Use resources to learn new material not taught in class. 	
	Other	<ol style="list-style-type: none"> 1.d. Apply algebra and basic calculus to simple electrical and electronic circuits. 3.a. Write reports describing lab experiments and results. 	
Relationship of Course to Program:	Meets: Educational Objectives <u>1, 2, 3, 4</u> Student Outcomes <u>1, 3, 4, 6, 7</u>		
Prepared by:	Dr. John Lynch	Date:	March 2, 2018; 3/21/18 (mb) reviewed 02/12