

**Bergen Community College**  
**Division of Math, Science and Technology**  
**Department of Industrial Design Technology**

**Course Syllabus**  
**ELC 203 Electronics I**

**Semester and year:**  
**Course Number:**  
**Meeting Times and Locations:**

**Instructor:**  
**Office Location:**  
**Phone:**  
**Office Hours:**  
**Email Address:**

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<b>COURSE TITLE:</b>	<b>ELC 203 Electronics I</b>
<b>COURSE CREDIT:</b>	4 credits
<b>COREQUISITE: (or PREREQUISITE)</b>	<b>AC-Circuit Analysis (ELC 201)</b>
<b>COURSE DESCRIPTION:</b>	Electronics I is an introduction to the fundamental concepts and applications of solid-state devices.
<b>SPECIFIC OBJECTIVES:</b>	<ol style="list-style-type: none"><li>1. To prepare the student to think logically and creatively about the problems encountered.</li><li>2. To prepare the student for the job tasks relevant to a technologist's role in the field.</li><li>3. To study semiconductor diodes and transistors, and their applications.</li></ol>
<b>TEXT:</b>	<ol style="list-style-type: none"><li>1. <b><u>Electronic Principles</u></b>, Seventh Edition, Albert P. Malvino and David Bates, McGraw Hill, 2007, ISBN 13-978007-297527-7</li></ol>
<b>LABORATORY:</b>	Lab experiments for diodes and transistors. Physical bread boards/circuit boards and Multisim simulated circuits

## **STUDENT LEARNING OBJECTIVES:**

1. The student will be able to recognize and understand how basic diodes and transistors function.
2. The student will be able to read and understand circuit diagrams that include diodes and transistors as circuit elements.
3. The student will be able to draw circuit diagrams including diodes and transistors using the Multisim computer program.
4. The student will be able to make physical measurements on diodes and transistors using physical lab equipment.

## **COURSE CONTENT:**

### **Textbook Chapters**

<b><u>Chapter</u></b>	<b><u>Topic</u></b>
1	Introduction
2	Semiconductors
3	Diode Theory
4	Diode Circuits
5	Special Purpose Diodes
6	Bipolar Transistors
7	Transistor Fundamentals
8	Transistor Biasing
9	AC Models
10	Voltage and Amplifiers

### **Means of Assessment/ Course Grades/ Evaluation**

<b>Methods: Sample evaluation method:</b>	<b>test average</b>	<b>80%</b>
	<b>lab</b>	<b>20%</b>

**COURSE CALENDAR:**

<b>CLASS MEETING</b>	<b>TOPIC</b>	<b>CHAPTER</b>
1	Background Review	1
2	Semi-Conductor Basics	2, 3
3	Diodes	2,3
4	Diode Circuit Applications	4
5	Zeners and Zener Circuits	5
6	Electro-Optical Applications	5
7	Bipolar Junction Transistors	6
8	Transistor Applications	6,7,8
9	(continued)	6,7,8
10	(continued)	6,7,8
11	Amplifiers	8,9
12	(continued)	8,9
13	(continued)	9,10
14	Signal Distortion and Noise	10
15	<b>Exam</b>	

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