

## SYLLABUS/COURSE OUTLINE

**DIVISION:** Business, Engineering & Industrial Technologies

**REVISED:** 1/09/2014

**CURRICULUM:** Air Conditioning & Refrigeration

**COURSE NUMBER AND TITLE:** AIR 199-01, HVAC Electronics Survey

**INSTRUCTOR:** Teresa P. Toler

[ttoler@dcc.vccs.edu](mailto:ttoler@dcc.vccs.edu)

434-797-8425

**CREDITS: 2    HOURS/WK LECTURE: 1    HOURS/WK LAB: 2**

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### **I. CATALOG DESCRIPTION:**

Studies electronics and its applications in the HVAC field. Covers computers, programmable controllers, and microprocessors in the HVAC industry.

### **II. RELATIONSHIP OF THE COURSE TO CURRICULUM OBJECTIVES:**

The objective of this course is to give the student an overview of the use of electronics in the HVAC field.

### **III. REQUIRED BACKGROUND/PREREQUISITES/COREQUISITES:**

None

### **IV. COURSE CONTENT:**

The student will become familiar with the operation, application and interpretation of the following:

Electronic Component Identification  
Typical Power Supply Circuits  
Soldering Printed Circuit Boards  
Computers  
Basic Robotics

### **V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE:**

- **Communications**
  - 1.1 understand and interpret complex materials;
  - 1.3 use standard English;
  - 1.5 use listening skills

- **Critical Thinking**
  - 2.4 weigh evidence and decide if generalizations or conclusions based on the given data are warranted;
  - 2.5 determine whether certain conclusions or consequences are supported by the information provided; and
  - 2.6 use problem solving skills.
- **Quantitative Reasoning**
  - 6.1 use logical and mathematical reasoning within the context of various disciplines;
  - 6.2 interpret and use mathematical formulas;

**VI. LEARNER OUTCOMES :**

**VII. EVALUATION:**

<ul style="list-style-type: none"> <li>• Demonstrate the knowledge and awareness of the damage that can be caused by static, how to control the static and damage to equipment and components.</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>
<ul style="list-style-type: none"> <li>• Demonstrate the ability to identify Electronic components and how they are installed on the circuit board.</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>
<ul style="list-style-type: none"> <li>• Demonstrate the ability to identify all the hard ware located in the computer. Identify main components on the motherboard.</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>
<ul style="list-style-type: none"> <li>• Identify the purpose of various types of computer preventive maintenance products and procedures and when to use them</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>
<ul style="list-style-type: none"> <li>• Demonstrate a knowledge of electrical quantities, units, abbreviations, and meters</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>
<ul style="list-style-type: none"> <li>• Demonstrate an understanding of Diodes, transformers and transistors.</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>
<ul style="list-style-type: none"> <li>• Demonstrate an understanding of typical power supplies</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>
<ul style="list-style-type: none"> <li>• Design and construct a basic VEX robot for competition in class.</li> </ul>	<p><b>Evaluation methods:</b> Written quizzes and tests Homework and labs</p>

**INSTRUCTOR:** Teresa P. Toler  
**OFFICE:** Hill 110 (Back of classroom)  
**PHONE:** 434-797-8425  
**E-MAIL ADDRESS:** ttoler@dcc.vccs.edu  
**OFFICE HOURS:** Posted on office door  
**TEXTBOOK:** No Textbook required  
**SEMESTER:** Spring 2014

**COURSE CONTENT:**

The student will become familiar with the operation, application and interpretation of the following:

- Electronic Component Identification
- Typical Power Supply Circuits
- Soldering Printed Circuit Boards
- Computers
- Basic Robotics

**REQUIREMENTS:**

Regular attendance is necessary for successful completion of this course. You are expected to be here on time, each time the class meets. Students that are absent 25 percent of the lab will receive a failing grade according to DCC policy. Quizzes given during class cannot be made up. **No exceptions will be made.** Labs can be made up on your own time and it is your responsibility to get all material that you missed during an absence. My office hours are posted below.

**COLLEGE ATTENDANCE POLICY:**

When absence from a class becomes necessary, it is the responsibility of the student to inform the instructor prior to the absence, whenever possible. The student is responsible for making up all work missed during an absence. It is the philosophy of Danville Community College that student and faculty interactions are critical to the learning process. Class attendance enhances this process. Regular attendance is thus expected of students. Students missing twenty-five percent (25%) or more of the total time allocated for classes and or labs may be administratively withdrawn from the class upon recommendation of the instructor. Students who are administratively withdrawn prior to completion of 60% of the class will be issued a grade of "W." After that point, students who are administratively withdrawn will be issued a grade of "F."

**OFFICE HOURS:**

Monday	Tuesday	Wednesday	Thursday	Friday
10:00AM-11:30AM	1:00PM-3:00PM	10:00AM-11:30AM	3:00PM-4:00PM	
2:30PM-6:30PM				

