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**COURSE SYLLABUS**

**DIVISION:** Workforce Services

**REVISED:** January 2015

**CURRICULUM:** Electrical Electronics Engineering Technology

**COURSE NUMBER AND TITLE:** ETR 151, Electronic Circuits & Troubleshooting I

**CREDIT HOURS:** 2

**HOURS/WEEK LECTURE:** 2

**HOURS/WEEK LAB:** 2

**LECTURE/LAB COMBINATION:** 2

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**I. CATALOG DESCRIPTION:**

The course studies analog and digital circuits and systems with standard circuit test and troubleshooting procedures. Lecture 2 hours per week.

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

Introduction to circuit analysis for applications to real world systems. The first course in a two semester sequence that presents, discusses and explains a method, and/or procedure for developing concepts, procedures for identifying circuits and systems, standard test and measurements for evaluation and analyzing devices, circuits and systems.

**III. REQUIRED BACKGROUND:**

Student must have completed the first semester of the Electrical/Electronics program or have the instructor's permission.

**IV. COURSE CONTENT:**

- A. Diagrams (block, schematic, wiring)
- B. Devices and circuits
  - 1. Passive devices
  - 2. Active devices
  - 3. Rectifiers
  - 4. Filters
  - 5. DC amplifiers
  - 6. Transducers
  - 7. Audio frequency amplifier circuits
  - 8. Troubleshooting
  - 9. Equipment use

## V. LEARNER OUTCOMES :

## VII. EVALUATION:

<ul style="list-style-type: none"> <li>Identify, measure, and distinguish between active and passive devices.</li> </ul>	Written quizzes and tests Oral and written reports Homework and projects
<ul style="list-style-type: none"> <li>Identify the three basic amplifier designs, select instruments for measuring testing and analyzing the circuits and describe the function/purpose of each component/device of each circuit type.</li> </ul>	
<ul style="list-style-type: none"> <li>Draw a block diagram of a multistage system and explain the function of each stage/component and identify the signal expected on inputs and outputs of each stage.</li> </ul>	
<ul style="list-style-type: none"> <li>Relate abnormal voltage and signal levels with stage and component failures and explain the relationship between the abnormal voltages and signals to the failed components.</li> </ul>	
<ul style="list-style-type: none"> <li>Demonstrate an understanding of basic electronic devices and in instruments</li> </ul>	
<ul style="list-style-type: none"> <li>Demonstrate an understanding of troubleshooting methods and develop methods and procedures as appropriate to troubleshoot basic electronics circuits.</li> </ul>	

## VII. The course supports the following general education goals/objectives:

DCC Educational Objectives

- Communication
- Critical Thinking
- Information Literacy
- Quantitative Reasoning