Danville Community College

Workforce Services
Danville Community College

## COURSE SYLLABUS

**DIVISION:** Workforce Services **Revised: January 2015**

**CURRICULUM IN WHICH COURSE IS TAUGHT:** Integrated Systems Technology

**COURSE NUMBER AND TITLE:** ETR 115, D.C. and A.C. Circuits

**CREDIT HOURS: 3-4** **HOURS/WEEK LECTURE: 3-4**

**HOURS/WEEK LAB: 0** **LECTURE/LAB COMBINATION: 3-4**

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The OEE classes are self-paced study classes in which a student has 16 weeks to complete once enrolled. Students will complete all lab and bookwork before doing the end of chapter tests. All end of chapter tests and final exams are closed book. Upon completion of the lab, all tools, components, and supplies shall be returned to their proper location.

**I. CATALOG DESCRIPTION:** Studies current flow in direct and alternating current circuits with emphasis upon practical problems. Reviews mathematics used in circuit calculations. Introduces concepts of resistance, capacitance, inductance and magnetism. Focuses on electronics/circuits application.

**II. RELATIONSHIP OF THE COURSE TO CURRICULUM OBJECTIVES IN WHICH IT IS TAUGHT:**
This course offers the basic fundamentals of AC and DC circuits and is necessary for today's industrial maintenance technicians.

**III. REQUIRED BACKGROUND:** This course is intended for those individuals with no prior experience in AC and DC circuits.

**IV. COURSE CONTENT**

Electrical Safety
Basic Electrical Circuits
Electrical Measurements
Circuit Analysis
Inductance and Capacitance
Combination Circuits
Transformers
Control Logic
Sequencing Control
Timers and Advanced Systems

| V. Learner Outcomes | VI. Evaluation |
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| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Electrical Safety | Class participation, homework, quizzes, and final exam |

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| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Basic Electrical Circuits | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Electrical Measurements | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Circuit Analysis | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Inductance and Capacitance | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Combination Circuits | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Transformers | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Control Logic | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Sequencing Control | Class participation, homework, quizzes, and final exam |
| Demonstrate an understanding of the theory of operation, maintenance procedures, and safety concerns related to Timers and Advanced Systems | Class participation, homework, quizzes, and final exam |

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

DCC Educational Objectives

- Communication
- Critical Thinking
- Information Literacy
- Quantitative Reasoning