Danville Community College

Workforce Services
Danville Community College

COURSE SYLLABUS

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

CURRICULUM IN WHICH COURSE IS TAUGHT: Technical Studies, Integrated Systems Technology

COURSE NUMBER AND TITLE: MEC 195 Applications in Electro Fluid Power

CREDIT HOURS: 2 **HOURS WEEK LECTURER:** 2

HOURS WEEK LAB: 4 **LECTURE/LAB COMBINATION:** 4

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 DESCRIPTIONC

Provides an opportunity to explore topical areas of interest to or needed by students. Introduction to Electrically-Controlled fluid power systems, the combination of electrical control systems and fluid power control systems for industrial applications.

II. RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES IN WHICH IT IS TAUGHT.

This course offers the basic fundamentals of electrical-control systems and is necessary for today industrial maintenance technicians.

III. REQUIRED BACKGROUND

This course is intended for those individuals with no prior electrical systems experience.

IV. COURSE CONTENT:

- Electrical control concepts
- Basic ladder diagrams
- Control transformers
- Fuses and circuit breakers
- Solenoid operated valves
- Push buttons
- Selector switches
- Indicator lights

- Relays
- Limit switches
- Motor control
- Cylinder reciprocation
- Multiple cylinder control
- Manual controls
- Rapid traverse slow feed
- Electrical pressure control
- Safety circuits
- Time delay relays
- Photoelectric control

V. LEARNER OUTCOMES	**VI. EVALUATION**
Determine distribution in fluids at rest and to calculate hydrostatic forces acting on plane and curved surfaces.	Quiz
Determine pressure variation in a flowing fluid using Bernoulli's principle.	Assignments
Determine velocity and acceleration of a fluid at a point.	
Apply control volumes to solve fluid flow problems through the application of integral conservation laws of mass, momentum, and energy.	Hands-on Lab
Apply the differential conservation equations of mass, momentum, and energy to fluid flow problems.	Assignments
Apply basic fluid mechanics principles to the flow of viscous fluids in pipes and ducts.	
Mechanical safety rules	Final Exam Final Hands-on Lab

The course supports the following objectives:

DCC Educational Objectives

1. Communication
2. Critical Thinking
3. Understanding Culture and Society
4. Information Literacy