

## Master Syllabus

### EGR 1217 - Fluid Power & Control

**Division:** Science, Mathematics and Engineering

**Department:** Automation and Control Technology

**Credit Hour Total:** 2.0

**Lecture Hrs:** 1.0 **Lab Hrs:** 3.0

**Date Revised:** October 2012

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### Course Description:

Fundamentals and basic applications of fluid power components, systems, controls and accessories. The design parameters and the terminology required to specify and plan fluid power systems. Basic electrical and Programmable Logic Control (PLC) control of fluid power components. One classroom, three lab hours per week.

### General Education Outcomes:

- Critical Thinking/Problem Solving Competency
- Information Literacy Competency

### Course Outcomes:

#### Fluid power cylinders

Evaluate the construction and operation of fluid power cylinders.

**Assessment Method:** Locally developed exams

**Performance Criteria:** Score greater than 70% on exams

**Assessment Method:** Simulations

**Performance Criteria:** Score "17.5" or higher on a five by five rubric

#### Pneumatic principles

Apply pneumatic principles.

**Assessment Method:** Locally developed exams

**Performance Criteria:** Score greater than 70% on exams

**Assessment Method:** Simulations

**Performance Criteria:** Score "17.5" or higher on a five by five rubric

#### Directional control valves

Evaluate the construction and operation of directional control valves.

**Assessment Method:** Locally developed exams

**Performance Criteria:** Score greater than 70% on exams

**Assessment Method:** Simulations

**Performance Criteria:** Score "17.5" or higher on a five by five rubric

#### Fluid power components and common fluid power circuits

Demonstrate an understanding of standard fluid power components and the construction and operation of common fluid power circuits.

**Assessment Method:** Locally developed exams

**Performance Criteria:** Score greater than 70% on exams

**Assessment Method:** Simulations

**Performance Criteria:** Score "17.5" or higher on a five by five rubric

#### Electrical control of fluid power components

Apply electrical control of fluid power components.

**Assessment Method:** Locally developed exams

**Performance Criteria:** Score greater than 70% on exams

**Assessment Method:** Simulations

**Performance Criteria:** Score "17.5" or higher on a five by five rubric

### Outline:

Fundamental pneumatic principles

Fundamental vacuum

Fundamental hydraulic principles

Construction and operation of fluid power cylinders

Construction and operation of directional control valves

Other fluid power components such as filters, regulators, etc.

Construction and operation of common fluid power circuits

Electrical and Programmable Logic Control (PLC) control of fluid power