

## Master Syllabus

### EET 2281 - Programmable Logic Controllers

**Division:** Science, Mathematics and Engineering

**Department:** Electronics Engineering Technology

**Credit Hour Total:** 3.0

**Lecture Hrs:** 2.0 **Lab Hrs:** 2.0

**Prerequisite(s):** OR EET 1131 EET 1120

**Date Revised:** May 2016

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#### Course Description:

Provides history of control systems and PLCs, use of number systems, ladder logic programming devices, Control I/O modules, relays, contacts, coils, and timers, counters and sequencers, fundamental PLC programming, and data transfer. Two classroom, two lab hours per week.

#### General Education Outcomes:

- Critical Thinking/Problem Solving Competency

#### Course Outcomes:

##### Troubleshoot

Determine cause of problems with PLC hardware and software; and repair.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of exam items correct

##### Machine control

Develop programs for machine control.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of exam items correct

##### Ladder logic programs

Demonstrate competency in writing ladder logic programs.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of exam items correct

#### Outline:

Recall the history of control systems  
Explain and describe the use of number systems  
Demonstrate use of ladder logic programming devices  
Employ ladder logic in control circuit design  
Demonstrate fundamental PLC programming (e.g., comparators, block transfers, I/O forcing)  
Use addressing to control I/O modules  
Demonstrate the use of relays, contacts, coils, and timers  
Demonstrate counters and sequencers  
Demonstrate data transfer in PLC networks