

## Master Syllabus

### EGR 1128 - Robotics in Computer Integrated Manufacturing (CIM) Systems

**Division:** Science, Mathematics and Engineering

**Department:** Automation and Control Technology

**Credit Hour Total:** 3.0

**Lecture Hrs:** 1.0 **Lab Hrs:** 4.0

**Date Revised:** October 2013

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#### Course Description:

This course serves as an introduction to automated systems. The basics of sensors, logic control systems, motion control systems, robotics and flexible manufacturing systems will be covered. The course will be taught using demonstration and discussion combined with individual and team centered project-based learning. One classroom, four lab hours per week.

#### General Education Outcomes:

- Oral Communication Competency
- Critical Thinking/Problem Solving Competency
- Computer Literacy Competency
- Information Literacy Competency

#### Course Outcomes:

##### Basic Sensors and Control Systems

Apply the fundamentals of digital and analog sensors and their use in automated systems and to integrate sensors in closed loop systems.

**Assessment Method:** Locally developed exams  
**Performance Criteria:** Score greater than 70%

**Assessment Method:** Oral examination  
**Performance Criteria:** Score "17.5" or higher on a five by five rubric when presenting work accomplished

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

##### Pbasic Programming and STAMP Technology

Create functional Pbasic programs and integrate STAMP technology into autonomous robotic systems.

**Assessment Method:** Locally developed exams  
**Performance Criteria:** Score greater than 70%

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

##### Computer Intergrated Manufacturing (CIM)

Demonstate the capability of combining computers, software, and networking together with machines, workers, and managers.

**Assessment Method:** Locally developed exams  
**Performance Criteria:** Score greater than 70%

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

##### Introduction to Robotics

Classify robots, components of industrial robots, basic electrical and mechanical components, and programming.

**Assessment Method:** Locally developed exams  
**Performance Criteria:** Score greater than 70%

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

#### Outline:

Sensors  
Flexible Manufacturing Systems  
Logic Control Systems  
Motion Control Systems  
Robotics