

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

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)

Demstrate 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