**Oakton Community College**

**Introduction to Robotics and Vision Systems**

**I.     Course Prefix/Number:** MFG 140

**Course Name:** Introduction to Robotics and Vision Systems

**Credits:** 4 (3 lecture; 2 lab)

**II.    Prerequisite**

None

**III.   Course (Catalog) Description**

An overview of the operation and usage of robots in manufacturing applications. Topics include: manipulators, drive systems, controllers, motion, payload, programming, and vision systems. Hands-on projects are a part of this course.

**IV.   Learning Objectives**

To understand the uses and limitations of robotic and vision applications.

**V.    Academic Integrity**

Students and employees at Oakton Community College are required to demonstrate academic integrity and follow Oakton's Code of Academic Conduct. This code prohibits:  
  
• cheating,   
• plagiarism (turning in work not written by you, or lacking proper citation),   
• falsification and fabrication (lying or distorting the truth),   
• helping others to cheat,   
• unauthorized changes on official documents,   
• pretending to be someone else or having someone else pretend to be you,   
• making or accepting bribes, special favors, or threats, and   
• any other behavior that violates academic integrity.   
  
There are serious consequences to violations of the academic integrity policy. Oakton's policies and procedures provide students a fair hearing if a complaint is made against you. If you are found to have violated the policy, the minimum penalty is failure on the assignment and, a disciplinary record will be established and kept on file in the office of the Vice President for Student Affairs for a period of 3 years.   
Details of the Code of Academic Conduct can be found in the Student Handbook.

**VI.   Sequence of Topics**

Class time spent learning terminology, safety, various applications  
  
• Flow charting, and basic programming  
• Lab work programming robot -- pick and place  
• Various exercises in application programming  
• Machine vision and associated topics  
• Robot control language  
• Off-line simulation of robot motion  
• Interfacing with PLC's

**VII.  Methods of Instruction**

Lecture, demonstrations, and hands-on projects.  
Course may be taught as face-to-face, media-based, hybrid or online course.

**VIII. Course Practices Required**

Regular attendance and completion of projects and exams.

**IX.   Instructional Materials**

**Note:** Current textbook information for each course and section is available on Oakton's Schedule of Classes.  
  
Texts: Industrial Robotics; Mikell P. Groover, Mitchell Weiss, Roger N. Nagel, Nicholas G. Odrey; by McGraw-Hill, Inc.  
  
Reference; 1993 International Robots & Vision Show and Conference Proceedings; Fighting Back With Automation; April 5 - 8 Cobo Center Detroit, Michigan

**X.    Methods of Evaluating Student Progress**

Grading:   
25% Mid-term Exam  
25% Quizzes  
50% Final Exam

**XI.   Other Course Information**

If you have a documented learning, psychological, or physical disability you may be entitled to reasonable academic accommodations or services. To request accommodations or services, contact the Access and Disability Resource Center at the Des Plaines or Skokie campus. All students are expected to fulfill essential course requirements. The College will not waive any essential skill or requirement of a course or degree program.

**XII. Instructor:**

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