

JAMESTOWN COMMUNITY COLLEGE
State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: Automation & Robotics

Course Abbreviation and Number: MCT 2220

Credit Hours: 3

Course Type: Lecture/Lab

Course Description: Students will learn the various components, devices, and machines used in modern automation systems along with a study of their related electronics. Students learn the techniques of testing and troubleshooting incorporated in the industrial control setting in a team setting. Students will construct and troubleshoot an automated system including programming and sensors.

Prerequisite/Corequisite: ENG 1510.

General Education Requirements Met

JCC

Applied Learning

Student Learning Outcomes:

Students who demonstrate understanding can:

1. Demonstrate understanding of automated system input devices.
 2. Troubleshoot and repair an automated system.
 3. Set up and maintain an automated system logic and sensors.
 4. Effectively apply knowledge and skills to a real-world experience, creative project, or independent intellectual investigation. [JCC Gen Ed – Applied Learning]
 5. Thoughtfully reflect on connections between concepts studies in the classroom and insights gained from an applied learning experience/project. [JCC Gen Ed – Applied Learning]
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Topics Covered:

- System level programming/troubleshooting
 - Application and calibration of hall-effect sensors
 - Grippers and EOAT
 - Robots
 - Material feeding systems
 - Magnetic, photoelectric, inductive, capacitive, ultrasonic, and homing sensors
 - Magnetic reed and limit switches
 - Synchronous belt drive
 - All screw drives
 - Part rejections/transfer
 - Stepper motors
 - Pick and place assembly
 - Servo robotics
 - Part transfer
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Information for Students

- Expectations of Students
 - [Civility Statement](#)
 - [Student Responsibility Statement](#)
 - [Academic Integrity Statement](#)
- [Accessibility Services](#)
Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
- [Get Help: JCC & Community Resources](#)
- [Emergency Closing Procedures](#)
- Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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- Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.

Effective Date: Fall 2021