

TECHNOLOGY STUDIES: ROBOTICS AND MECHATRONICS TECHNICIAN CERTIFICATE

Program code: RMTCC-COT

Location: Asnuntuck

Program Description

This certificate provides training in Mechatronics. Mechatronics is a multidisciplinary field that includes a combination of mechanical systems, robotics, electronics, telecommunications, digital processing, and digital controls. Using both instructional techniques and hands-on practice with state-of-the-art equipment, the student will receive a comprehensive and expansive education in an ever-growing career field. The successful graduate may apply their knowledge and skills in a variety of fields such as engineering, design, manufacturing, machining, troubleshooting and repair of automated equipment. The student who completes the Robotics and Mechatronics Technician certificate program has a choice to pursue employment or to matriculate in an associate degree program.

Learning Outcomes

1. Technical knowledge of the electrical sciences vital to automated electric power systems, control systems, communication systems, and sensing systems.
2. Technical knowledge of hydraulic and pneumatic fluid power generation, transmission, control, and maintenance.
3. Technical knowledge of mechanical control systems, timing systems, and power transmission systems from a maintenance and repair perspective.
4. Technical knowledge of the generation, logic, and application of digital signals as applied in automated mechatronic systems.
5. Practical knowledge of robotic systems that would include function, operation, programming, and maintenance of multiple industry leading robot vendors.
6. Skill in the maintenance of mechatronic systems, the diagnosis of root causes of points of failure in those systems, and the strategies of troubleshooting solutions.
7. Extensive on campus maintenance and repair practicum with state-of-the-art educational systems constructed of components from industry leading vendors including Fanuc, Festo, Siemens, Rockwell Automation, Allen Bradley, ABB, Bridgeport, Microsoft, et al.

Certificate Requirements

Code	Title	Credits
Required Courses		
MFG 1330	Mathematics for Electricity and Electronics	3
MFG 1220	Digital Concepts	3
MFG 1250	Robotic Automation	3
MFG 1210	Circuit Design and Diagnostics	4
MFG 1240	Motor Controls for Automation	3

MFG 1245	Programmable Logic Controllers Applications	3
MFG 1230	Industrial Fluid Power	3
MFG 1235	Industrial Maintenance, Service and Repair	3
MFG 1225	Digital Controls	3
MFG 1200	Automation Fundamentals	3
MFG 1415	Safety in the Workplace	1
MFG 1479	Career Awareness for Manufacturing	1
Total Credits		33

- Technology Studies: Robotics and Mechatronics Technician, AS