

MECHATRONICS TECHNOLOGY

This Certificate of Training prepares students with practical skills in robotic automation, electronics, and mechanical systems (broadly referred to as mechatronics), suitable for technician-level employment in a number of fields where automation and robotics systems are making rapid inroads. This includes everything from agriculture to water treatment, and from assembly lines to surgical robotics. Some examples of specific job titles include machine maintenance technician, field service technician, manufacturing process technician, and electro-mechanical technician. The curriculum is designed to provide real-world, hands-on problem-solving skills and requires only beginning algebra as a prerequisite. Some students may find this program a suitable path to further academic study in fields such as engineering.

Learning Outcomes: Upon successful completion of the program, students will have demonstrated the ability to:

- Apply basic principles of physics to develop a mechanical system capable of performing a well-defined task.
- Design, fabricate, assemble, and troubleshoot a printed circuit board capable of interfacing an electronic sensor to a microcontroller.
- Design, fabricate, and document a complex electro-mechanical system using modern automated and power machinery.
- Combine sensors, actuators, microcontrollers, and software to effectively control a robotics project.

Certificate of Training

Certificate Requirements

Units

REQUIRED CORE:

12

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| MECT 5 | Introduction to Mechanical Systems (3) |
| MECT 10 | Fundamentals of Electronics (3) |
| MECT 15 | Introduction to Mechanical Design and Fabrication (3) |
| MECT 20 | Electronic Control Systems (3) |

Select one course from the following:

3-4

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| ARTD 7A | 3D Arts and Technology I (3) |
| AUTO 102 | Basic Automotive Electricity and Electronics (4) |
| BUSI 44 | Introduction to Business Ownership/Mgmt (3) |
| CSIS 9 | Programming Fundamentals: Python (3) |
| CSIS 10A | Programming Methods I: Java (4) |
| CSIS 10C | Programming Methods I.5: C and C++ (4) |
| CSIS 75 | Introduction to Computer Hardware/A+ Prep (4) |

TOTAL CERTIFICATE OF TRAINING UNITS

15-16