FUNDAMENTALS OF SMART AUTOMATION, COA

Program Code: Fund of Smart Automation-CoA

Program Description

This Certificate of Achievement, Fundamentals of Smart Automation, will provide students with a well-rounded course of training in industrial operations, maintenance, and repairs. This certificate provides students with a strong base of knowledge in a variety of topics in manufacturing including workplace safety, electricity, robotics, mechanical systems, pneumatics, programmable logic controllers (PLCs), industrial networking, and IIoT. Students will work hands-on with state-of-the-art training equipment to practice operating, maintaining, troubleshooting, and repairing automated systems. Graduates of this program will be prepared to enter the manufacturing workforce in high-demand positions such as machine operator and industrial maintenance technician.

Recommended Course Schedule

1st semester		Units
MPT 101	Basics of Operations and Maintenance	3
MPT 111	Fundamentals of Manufacturing and Automation I	3
MPT 112	Fundamentals of Manufacturing and Automation II	3
MPT 114	Fundamentals of Manufacturing and Automation III	3
MPT 135	Material Handling	2
ELM 140	Industrial Robotics I	3
	Semester Total	**17**
2nd semester		
Communications [1]		3
MPT 102	Introduction to Programming for Mechatronics	3
MPT 104	Introduction to IIoT, Networking and Data Analytics	6
OSH 222	General Industry Safety	1
	Semester Total	**13**
	Total Units	**30**

[1] See program recommendations or requirements.

Program Requirements

Certificates of Achievement can be a stepping stone to an associate degree or allow students to enter the workforce. Certificates of Achievement have a general education component.

To earn a Certificate of Achievement, students must:

1. Maintain a minimum cumulative GPA of 2.0 (see requirements for graduation.)
2. Complete a minimum of 15 semester credit hours within the college.
3. Satisfy General Education requirements for the Certificate of Achievement (https://catalog.tmcc.edu/degrees-certificates/general-education/coa/).
4. Have no financial or library obligation to the college.

Code	Title	Units
General Education Requirements		
Communications		*3*
Recommended:		
ENG 101	Composition I	
or ENG 100	Composition Enhanced	
or ENG 113	Composition I for International and Multilingual Students	
Human Relations		*[3]*
Requirement is satisfied through embedded curriculum in the following courses: MPT 101, MPT 104, MPT 111, MPT 112, MPT 135, OSH 222.		
Mathematics		*[3]*
Requirement is satisfied through embedded curriculum in the following courses: ELM 140, MPT 101, MPT 104, MPT 111, MPT 112.		
Certificate Requirements		
MPT 101	Basics of Operations and Maintenance	3
MPT 102	Introduction to Programming for Mechatronics	3
MPT 104	Introduction to IIoT, Networking and Data Analytics	6
MPT 111	Fundamentals of Manufacturing and Automation I	3
MPT 112	Fundamentals of Manufacturing and Automation II	3
MPT 114	Fundamentals of Manufacturing and Automation III	3
MPT 135	Material Handling	2
ELM 140	Industrial Robotics I	3
OSH 222	General Industry Safety	1
Total Units		**30**

Program Outcomes

Students completing the certificate will:

- PSLO1: Describe industry standard manufacturing and automation concepts and theories
- PSLO2: Demonstrate essential entry level, industry standard skills related to safety and maintenance
- PSLO3: Demonstrate the ability to operate industry standard smart automation equipment