Workforce & Continuing Education
MACOMB COMMUNITY COLLEGE

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M-TEC Michigan Technical Education Center℠

Robot Programmer Certificate

The Robot Programmer pathway is a straightforward program to prepare students to enter the field of robotics in a modern industrial setting. Robots are widely used in industry to perform repetitive tasks with extreme precision. This pathway will enable students to create, execute and test robot trajectories and programs necessary to incorporate robots with integrated processes. Upon successful completion participants will be awarded FANUC Handling Tool Operation and Programming Certification and FANUC iRVision 2D Certification.

Please note: The Manufacturing Essentials Program is a pre-requisite to entering this program. This pre-req may be waived based on experience or successful completion of a hands-on assessment in these areas. Assessment to be completed at the expense of the student.

Non-Credit Course Code	Course Title	Hours	Days
CMNF 8241	FANUC Robotics Operations	40	5
CMNF 8283	HandlingPRO (ROBOGUIDE) Workcell Simulation	16	2
CMNF 8270	Advanced Robotics Operations	40	5
CMNF 8273	FANUC iRVision 2D	24	3
A certificate of completion will be awarded to students who successfully complete the above courses.		120 hours	15 days

Non-Credit Course Descriptions

FANUC Robotics Operations – CMNF 8241 – 40 hours

Prerequisite: None

This forty (40) hour course is designed to provide the basic skills needed to operate and program FANUC robots. Course topics include robotic safety, controls, operations, and handling tool programming.

HandlingPRO (ROBOGUIDE) Workcell Simulation – CMNF 8283 – 16 hours

Prerequisite: CMNF 8241/FANUC Robotics Operations

This sixteen (16) hour course is designed to provide the skills needed for creating a computer 3D simulated robotic workcell using FANUC ROBOGUIDE. Course topics include: Creating a Workcell; Add Parts to the Workcell; Edit Robot Properties; Add End-of-Arm Tooling to the Robot; Add a Pick and Place Fixture to the Workcell; Create/Run a Robot Program; Create an AVI of the Workcell.

Advanced Robotics Operations – CMNF 8270 - 40 hours

Prerequisite: CMNF 8241/FANUC Robotics Operations

This forty (40) hour course is designed to provide the advanced skills needed to operate and program Fanuc robots. Course topics include collision guard, condition monitor function, executing multiple program (multi-tasking), program shift utility and systems operations.

FANUC iRVision 2D – CMNF 8273 - 24 hours

Prerequisite: CMNF 8241/FANUC Robotics Operations

This twenty-four (24) hour course provides an understanding of how to program a vision system as a stand-alone solution and integrated into robotic systems. The student will understand general vision concepts, including camera setup, lighting, lensing, 2D Single & 2D Multiple View Process and perform hands-on programming with industrial vision systems.

Optional courses

CELC 8013	Electrical Fundamentals	CMNF 8207	Pneumatics Fundamentals	CMNF 8285	Intermediate PLC 1
CELC 8012	Motor Controls & Drives	CMNF 8053	Hydraulics Fundamentals	CMNF 8279	Intermediate PLC 2
CELC 8016	Digital Electronics	CELC 8020	Electro-Pneumatics & Hydraulics	CMNF 8280	Advanced PLC
CMNF 8166	Mechanical Systems/ Power Transmission	CMNF 8247	Basic PLC	CMNF 8239	Automated System Troubleshooting