
ENGINEERING - AUTOMATED MANUFACTURING TECHNOLOGY CERTIFICATE

PROGRAM OVERVIEW

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The Engineering-Automated Manufacturing Technology Certificate Program is designed to prepare students with theory-based (knowledge) and performance-based (hands-on) experiences crucial to advanced and automated manufacturing processes. Through the integration of mathematics, robotics, metallurgy, manual tooling skills, programmable machinery applications, computer-assisted machining techniques and additive manufacturing, students can acquire the critical skills leading to successful employment. Students will be eligible for National certification based on industry-written, industry-approved standards through the National Institute of Metalworking Skills (NIMS). Rigorous and highly disciplined, NIMS credentials have been vetted in partnership with the American National Standards Institute (ANSI).

NIMS credentialing opportunities throughout the coursework will include fourteen skill specific credentials and a special merit certificate. These credentials will include the following: (1) Measurement, Materials, and Safety, (2) Job Planning, Benchwork, and Layout, (3) Drill Press Skills I, (4) Manual Milling Skills I, (5) Turning Operations: Between Centers I, (6) Turning Operations: Chucking Skills I, (7) CNC Milling: Programming Setup & Operations, (8) CNC Milling: Operator, (9) CNC Turning: Programming Setup & Operations, (10) CNC Turning: Operator, (11) Metalforming, (12) Electrical Discharge Machining (EDM): Plunge, (13) Electrical Discharge Machining (EDM): 2-Axis Wire, (14) Grinding Skills I, and (15) NIMS Machining Certificate of Special Merit. Through coursework in computer-aided design/ computer-aided manufacturing, students will be prepared to test for two additional industry credentials. Credentials include (1) Autodesk Certified User and (2) Mastercam 2D Mill Certification. Students will be eligible for three additional certifications in automation and additive manufacturing. These include the following: (1) FANUC Certified Robot Operator I, (2) FANUC Certified Robot Operator II, and (3) Stratasys Additive Manufacturing Certification.

Successful completion of this program qualifies a student to apply for a Certificate in Engineering-Automated Manufacturing Technology.

COURSE REQUIREMENTS

REQUIRED ENGINEERING - AUTOMATED MANUFACTURING TECHNOLOGY COURSES

ENGT-101	Machine Tool Applications, Material Handling/Fluid Power & Metallurgy
ENGT-102	Quality Control with Geometric Dimensions & Tolerances
ENGT-103	Mill Applications
ENGT-104	Lathe Applications
ENGT-110	Introduction to Computer-Aided Design/Computer-Aided Manufacturing
ENGT-120	Introduction to Computerized Numeric Control Programming and Machining
ENGT-201	Fixture Design and Fabrication
ENGT-210	Advanced Computer-Aided Design/Computer-Aided Manufacturing
ENGT-212	Electrical Discharge Machining
ENGT-215	Abrasive Machining and Heat Treatment
ENGT-220	Advanced Computerized Numeric Control Programming and Machining
ENGT-225	Robotics Material Handling and Automation or Manufacturing Capstone

PROGRAM PATH

ENGINEERING-AUTOMATED MANUFACTURING TECHNOLOGY

ONE-YEAR CERTIFICATE

PREPARATION FOR EMPLOYMENT

FIRST SEMESTER

	<u>Credit Hours</u>
Engineering-Automated Manufacturing Technology 101 (Machine Tool Applications, Material Handling/Fluid Power & Metallurgy)	3
Engineering-Automated Manufacturing Technology 102 (Quality Control with Geometric Dimensions & Tolerances)	3
Engineering-Automated Manufacturing Technology 110 (Introduction to Computer-Aided Design/Computer-Aided Manufacturing)	3
Total:	9

SECOND SEMESTER

Engineering-Automated Manufacturing Technology 103 (Mill Applications)	3
Engineering-Automated Manufacturing Technology 104 (Lathe Application)	3
Engineering-Automated Manufacturing Technology 120 (Introduction to Computerized Numeric Control Programming and Machining)	3
Engineering-Automated Manufacturing Technology 210 (Advanced Computer-Aided Design/Computer-Aided Manufacturing)	3
Total:	12

THIRD SEMESTER

Engineering-Automated Manufacturing Technology 201 (Fixture Design and Fabrication)	4
Engineering-Automated Manufacturing Technology 220 (Advanced Computerized Numeric Control Programming and Machining)	4
Total:	8

FOURTH SEMESTER

Engineering-Automated Manufacturing Technology 212 (Electrical Discharge Machining)	3
Engineering-Automated Manufacturing Technology 215 (Abrasive Machining & Heat Treatment)	3
Engineering-Automated Manufacturing Technology 225 (Robotics Material Handling and Automation or Manufacturing Capstone)	4
Total:	10
Total Credit Hours:	39

NOTE: All courses specifically identified by course number are graduation requirements for this program.