Manufacturing Technology –
Applied Manufacturing Option – Associate in Science:
Program Narrative & Grid

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MANUFACTURING TECHNOLOGY - APPLIED MANUFACTURING OPTION

Program Goals

The goal of the Manufacturing Technology Applied Manufacturing Option is to prepare highly skilled technicians and front-line supervisory personnel for the advanced manufacturing workforce. This option is specifically designed to serve as an associate degree completion program for applicants who meet the criteria for admission to the program and can demonstrate successful completion of all aspects of the MA Manufacturing Extension Partnership CNC Machine Operator Skills Training & Advanced CNC Machine Operator Skills Training.

Student Learning Outcomes

Upon completion of the program graduates will:

- Apply mathematical and scientific concepts to solve manufacturing problems.
- Use their knowledge of engineering principles to operate, troubleshoot, and maintain highly technical manufacturing equipment and integrated systems.
- Program, set up and operate sophisticated CNC machinery while maintaining safe working conditions and a structured approach to CNC programming methodology.
- Use industry recognized CAD/CAM software to prepare engineering drawings and build complex CNC programs.
- Apply advanced methods of analysis, synthesis, and control of productions systems as they relate to lean production and automated process techniques.
- Integrate advanced methods of communication and maintain a professional approach to add value to a variety of manufacturing organizations through contextualized experience and applied technical knowledge.
- Understand and analyze modern quality systems to maintain and improve the production of goods and the processes that drive them.

Admissions Process

Admissions inquiries should be directed to admissions@qcc.mass.edu. Prospective students may apply to the program of their choice by following the enrollment steps at the following link: http://www.qcc.edu/pages/Enrollment_Steps.html.

Admissions Requirements

High School Diploma or GED/High School Equivalency

Prospective applicants must hold a high school diploma or GED. In addition, applicants must submit the following certificate of completion:

- MACWIC Level 4 Certificate of Applied Manufacturing Technology.

This certificate documents successful completion of all classroom-based and on-the-job training hours related to content addressed in the following QCC courses: MNT 101, MNT 110, MNT 115, MNT 210 and MNT 215 as well as successful completion of a minimum of 600 additional apprentice hours (beyond the hours utilized to fulfill the requirements of the MNT course articulations).

Prospective applicants will work through QCC's Career Placement Services Office to credential the MMEP CNC Machine Operator Skills Training & Advanced CNC Machine Operator Skills Training. Please see the Additional Cost section for information regarding credentialing fees.

Additionally, prospective students should note that some required courses carry minimum prerequisites. Refer to the program grid.

Students should note that some first semester courses carry minimum prerequisites. Refer to the program grid.

CORI, SORI, Finger Printing & Drug Testing

A Criminal Offenders Record Information (CORI) and Sexual Offenders Record Information (SORI) are not required. Finger printing and drug testing are not required.

Additional Cost

See page 30 for program fees for this program. (Note: Not all programs have program fees).
Students are required to pay the current QCC credentialing fee for the 26 college credits granted through this agreement. Please see: http://www.qcc.edu/services/experience-based-education/credentialing

Location

This program may be completed at the QCC Worcester campus.
This program may be completed face-to-face.
This program may be completed more than 50% on-line.

Technical Performance Standards

See page 17 for technical standards for this program. (Note: Not all programs have technical performance standards).

Credit for Prior Learning

Students enrolled in this program may be able to earn academic credit for prior learning. Please contact the office of Career Placement Services at careerservices@qcc.mass.edu, 508.854.4439, Room 272 A.

Note: Applicants should note that 26 credits are being granted through articulation as per the terms of the agreement between MA Manufacturing Extension Partnership and QCC for this associate degree completion option. While students enrolled in this program may be able to earn additional academic credit for prior learning, it should be noted that a minimum of 15 credits must be completed at QCC in order to meet the residency requirement.

Career Outlook

Please consult The Massachusetts Career Information System at http://masscis.intocareers.com/ or The Occupational Outlook Handbook at http://www.bls.gov/oco/ for specific occupational information. The CIP code for this program is 15.0613.

Transfer Articulations & Opportunities

Prospective students may learn more about transfer articulation agreements at the following link: http://www.qcc.mass.edu/transfer/ArticPathways.html. More information regarding transfer opportunities is available at: http://www.qcc.mass.edu/transfer and on page 23.

Note: Applicants should note that credits granted through articulation as per the terms of the agreement between MA Manufacturing Extension Partnership and QCC may not be eligible for transfer to four-year colleges or universities. Applicants are advised to check with their transfer institution of choice regarding relevant transfer policies.

Program Contact: Manufacturing@qcc.mass.edu

Additional Program Information: For the most up to date information, go to the program website at www.QCC.edu.

MANUFACTURING TECHNOLOGY - APPLIED MANUFACTURING OPTION - Associate in Science (Program Code: MPA)

Course Title	Course #	Offered	Plan to Take	Grade	Credits	Prerequisites
Credentialing of MassMEP CNC Machine Operator Skills Training & Advanced CNC Machine Operator Skills Training as per articulation agreement					26	
Semester 1						
English Composition & Literature I	ENG 101	F/S/SU			3	ENG 100 or approp place score
Process Automation and Robotics	MNT 217	F			3	CIS 111, MNT 110
Mathematics Elective	---				3	
Social Science Elective	---				3	
Elective*	---				3-4	
Semester 2						
English Composition & Literature II	ENG 102	F/S/SU			3	ENG 101
Introduction to Business	MGT 101	F/S/SU			3	A grade of "C" or higher in ENG 091 and passing the ENG 096 departmental writing final examination essay or approp place score
Humanities Elective	---				3	
Mathematics Elective	---				3	
Science Elective	---				4	
Elective*	---				3-4	
Total Credits Required					60-62	

Program Notes:

*Elective: Students MUST select from the following list of courses:

- BUS 205 Project Management (3 credits)
- ENG 205 Technical & Workplace Writing (3 credits)
- MGT 211 Principles of Management (3 credits)
- MNT 103 Solid Modeling (3 credits)
- MNT 105 Geometric Tolerancing & Dimensioning (4 credits)
- MNT 216 Manufacturing Processes II (4 credits)
- MNT 218 Lean Manufacturing & Six Sigma (3 credits)

*Note: MAT 108 is designed to teach students how to apply mathematics to specific technical disciplines and is offered for credit toward the Certificate in Manufacturing Technology. MAT 108 may not be considered equivalent to college-level mathematics for the purpose of transfer of credit to some baccalaureate institutions. Students who plan to pursue QCC's Associate in Science in Manufacturing Technology are advised to take MAT 100.