

# Advanced Manufacturing Technology



## Why AMT?

The Advanced Manufacturing Technology program helps students learn marketable skills in a variety of automated manufacturing processes to enter the dynamic world of high-tech manufacturing.

The term “advanced manufacturing technology” is used to describe flexible manufacturing systems which use innovative technology to improve the design and manufacture of products and processes. The program teaches students how to use systems like robotic and transport-based automation including modular work cells, assembly stations, storage locations, machining centers, welding centers and painting stations. The manufacturing process of a product is analyzed from design to manufacture to the delivery to the customer. Each student will acquire an overview of how a complete system is tied together to produce high-quality product at a low cost.

**Students who plan to transfer to a four-year program can choose between a Mechanical Engineering Technology, Mechatronics or Robotics pathway in the MCC Advanced Manufacturing degree program.** See your advisor for details about specific classes and course substitutions.

## Program Outcomes

Students who graduate from this program will be able to:

- Implement and control automated manufacturing processes
- Design components and assemblies using Solidworks
- Use 3D printers, laser cutters and CNC equipment to fabricate prototypes
- Illustrate flow of materials and resources within the manufacturing cycle
- Control a manufacturing system to create finished product
- Program material-handling robots and equipment
- Perform system analysis and master the troubleshooting process
- Master Lean manufacturing process to maximize production of a product
- Have theoretical knowledge and hands-on practice in electronics, mechanics, computer systems and software control systems

## Potential Jobs

- Automation Technician
- Engineering Technician
- Electro-Mechanical Technician
- Robotics Operator
- Electrical Engineering Tech
- Manufacturing Technician
- R&D Technician
- Robotics Technician

## Potential Salary\*

There is a wide range of jobs in the advanced manufacturing industry. See below for the average annual salary range in NH for an **Electro-Mechanical Technician**.

ENTRY LEVEL	MID-RANGE	EXPERIENCED
\$47,757	\$66,872	\$75,858

\*New Hampshire Occupational Employment & Wages 2021, published by the NH Economic + Labor Market Information Bureau — Salaries are based on 40 hours of work, not including overtime.

## Transfer Opportunities

- University of NH / UNH Manchester
  - Northeastern University
  - UMass Lowell
  - WPI
- ...and many more!

## Internship Opportunities

- GE Aviation
  - Corfin Industries
  - Hitchiner Manufacturing
  - Velcro, USA
- ...and many more!



# Degree & Certificate Requirements

## Advanced Manufacturing Degree

### Degree Program - First Year

First Year	Fall Semester	TH	LAB	CR
ADMT110M	Manufacturing Processes	2	3	3
ADMT112M	Introduction to Engineering Design and Solid Modeling	3	3	4
ADMT115M	Engineering Print Reading	2	3	3
ADMT118M	Electrical Fundamentals for Manufacturing	3	3	4
MATH155M	College Algebra with Trigonometry*	4	0	4
FYE100M	MCC Essentials	1	0	1
<b>Total</b>		<b>15</b>	<b>12</b>	<b>19</b>

First Year	Spring Semester	TH	LAB	CR
ADMT120M	Motor Controls and PLC for Manufacturing	3	3	4
ADMT135M	Basic Machining Practices	1	5	3
MATH171M	Pre-Calculus*	4	0	4
PHYS135M	College Physics I	3	3	4
ENGL110XM or ENGL110M	College Composition I with Corequisite or College Composition I	4	0	4
<b>Total</b>		<b>15</b>	<b>11</b>	<b>19</b>

### Degree Program - Second Year

Second Year	Fall Semester	TH	LAB	CR
ADMT210M	Manufacturing Systems I	2	3	3
ADMT220M	Material Science	2	3	3
Pathway Elective*	<b>Robotics Pathway: ROBO210M</b> <b>Mechatronics Pathway: ADMT230M</b>	2	3	3
PHYS136M	College Physics II	3	3	4
	Foreign Language/Humanities/Fine Arts Elective	3	0	3
<b>Total</b>		<b>12</b>	<b>12</b>	<b>16</b>

Second Year	Spring Semester	TH	LAB	CR
ADMT240M	Manufacturing Systems II	3	6	5
Pathway Elective	<b>Robotics Pathway: ROBO211M</b> <b>Mechatronics Pathway: ADMT225M</b>	2/3	2/0	3
	Open Elective	3	0	3
	Social Science Elective	3	0	3
<b>Total</b>		<b>11/12</b>	<b>6/8</b>	<b>14</b>
<b>Total Credits - 68</b>				

\*Students transferring to Mechanical Engineering Technology program at UNH-M need to follow the Mechatronics Pathway as well as take MATH204M Calculus I and MATH214M Calculus II.

## Mechatronics Certificate

First Year	Fall Semester	TH	LAB	CR
ADMT110M	Manufacturing Processes	2	3	3
ADMT112M	Intro to Engineering Design and Solid Modeling	3	3	4
ADMT115M	Engineering Print Reading	2	3	3
ADMT118M	Electrical Fundamentals for Manufacturing	3	3	4
First Year	Spring Semester	TH	LAB	CR
ADMT120M	Motor Controls and PLCs (8 weeks)	3	3	4
ADMT135M	Basic Machining Practices	1	5	3
ADMT210M	Manufacturing Systems I	2	3	3
ADMT230M	CAD/CAM for Manufacturing	2	3	3
<b>Total Credits - 27</b>				

## Robotics Certificate

First Year	Fall Semester	TH	LAB	CR
ADMT110M	Manufacturing Processes	2	3	3
ADMT112M	Intro to Engineering Design and Solid Modeling	3	3	4
ADMT115M	Engineering Print Reading	2	3	3
ADMT118M	Electrical Fundamentals for Manufacturing	3	3	4
First Year	Spring Semester	TH	LAB	CR
ADMT120M	Motor Controls and PLCs (8 weeks)	3	3	4
ADMT210M	Manufacturing Systems I	2	3	3
ROBO210M	Robotic Processes	2	3	3
ROBO211M	Robotic Design	2	3	3
<b>Total Credits - 27</b>				

## Available Advanced Manufacturing Degree Pathways

Students wishing to pursue a career in Mechanical Engineering Technology, Mechatronics or Robotics, must take specific courses in order to transfer appropriate credits to a four-year college. Please see notes below for transfer requirements.

### \*Mechanical Engineering Technology Pathway

Students who wish to follow this pathway should replace MATH155M and MATH171M with MATH204M Calculus I and MATH214M Calculus II and take the Mechatronics pathway electives, ADMT230M CAD/CAM for Manufacturing and ADMT225M Statics.

### Mechatronics Pathway

Students who wish to follow this pathway should take the Mechatronics pathway electives, ADMT230M CAD/CAM for Manufacturing and ADMT225M Statics.

### Robotics Pathway

Students who wish to follow this pathway should take the Robotics pathway electives, ROBO210M Robotic Processes and ROBO211M Robotic Design.

All courses and degree requirements are subject to change. For the most current information on MCC programs, visit [mccnh.edu](http://mccnh.edu).