

# ADVANCED MANUFACTURING TECHNOLOGY: MANUFACTURING ENGINEERING TECHNOLOGY

**Award:** Associate of Applied Science Degree

**Major:** Advanced Manufacturing Technology

**Specialization:** Manufacturing Engineering Technology

**Additional Program Information:** <https://www.brcc.edu/academics/programs/advanced-manufacturing/>

**Potential Additional Funding Information:** <https://www.brcc.edu/g3/>

This specialization combines operational/mechanical technology with advanced troubleshooting and process improvement skills. The curriculum includes basic mechanical and electrical, trouble shooting, materials, process and productivity improvement and prepares the student for manufacturing positions such as an engineering technician, reliability technician, maintenance planner or process control technician. Terminal or potential transferrable degree.

## Required Courses Curriculum

First Semester		Credit Hours
ELE 123	Electrical Applications I	2
ETR 113	D.C. and A.C. Fundamentals I	3
MAC 156	Mechanisms I	3
MEC 161	Basic Fluid Mechanics - Hydraulics/Pneumatics	4
MTH 161	Precalculus I	3
SDV ( <a href="https://catalog.brcc.edu/programs-study/sdv/">https://catalog.brcc.edu/programs-study/sdv/</a> )	Student Development	1
<b>Credit Hours</b>		<b>16</b>
Second Semester		Credit Hours
CAD 140	Technical Drawing	3
Select one of the following:		3
ENG 111	College Composition I	
ENG 115	Technical Writing	
IND 181	World Class Manufacturing I	3
MTH 162	Precalculus II	3
General Education Elective ( <a href="https://catalog.brcc.edu/programs-study/general-education-aas/">https://catalog.brcc.edu/programs-study/general-education-aas/</a> )		3
<b>Credit Hours</b>		<b>15</b>
Third Semester		Credit Hours
EGR 121	Foundations of Engineering	2
IND 165	Principles of Industrial Technology I	4
MEC 111	Materials for Industry	3
Literature/Humanities/Fine Arts Elective ( <a href="https://catalog.brcc.edu/programs-study/general-education-aas/#literature">https://catalog.brcc.edu/programs-study/general-education-aas/#literature</a> )		3
Social and Behavioral Science Elective ( <a href="https://catalog.brcc.edu/programs-study/general-education-aas/#social">https://catalog.brcc.edu/programs-study/general-education-aas/#social</a> )		3
<b>Credit Hours</b>		<b>15</b>
Fourth Semester		Credit Hours
BUS 200	Principles of Management	3
IND 251	Automated Manufacturing Systems I	3
MEC 112	Processes of Industry	3
Select one of the following:		4
PHY 100	Elements of Physics	
PHY 201	General College Physics I	
Select one of the following:		3-4
CAD 241	Parametric Solid Modeling I	
CHM 101	Introductory Chemistry I	
EGR 206	Engineering Economics	

ITE 140	Spreadsheets for Business	
	<b>Credit Hours</b>	<b>16-17</b>
	<b>Total Credit Hours</b>	<b>62-63</b>

## Certificates

### Applied Mechatronics I

**Award: Career Studies Certificate**

**Potential Additional Funding Information:** <https://www.brcc.edu/g3/>

Purpose: To provide a broad overview of the major areas involved in the day-to-day operations of a manufacturing facility, including leadership, process improvement, financial management, and information systems. The completed career studies certificate will provide a foundation for those students seeking further study in the area of manufacturing management.

Code	Title	Credit Hours
ELE 123	Electrical Applications I	2
ETR 113	D.C. and A.C. Fundamentals I	3
MAC 156	Mechanisms I	3
MEC 161	Basic Fluid Mechanics - Hydraulics/Pneumatics	4
Select one of the following:		3
MTH 111	Basic Technical Mathematics	
MTH 161	Precalculus I	
SDV ( <a href="https://catalog.brcc.edu/programs-study/sdv/">https://catalog.brcc.edu/programs-study/sdv/</a> )	Student Development	1
<b>Total Credit Hours</b>		<b>16</b>

### Applied Manufacturing Technician

**Award: Career Studies Certificate**

**Potential Additional Funding Information:** <https://www.brcc.edu/g3/>

Purpose: To provide a basic understanding of manufacturing methods and processes with emphasis on problem solving and process improvement. The completed career studies certificate will provide a foundation for students seeking to enhance their skills in advanced manufacturing.

Code	Title	Credit Hours
BUS 200	Principles of Management	3
Select one of the following:		2-3
CAD 161	Blueprint Reading I	
CAD 140	Technical Drawing	
IND 165	Principles of Industrial Technology I	4
IND 181	World Class Manufacturing I	3
IND 251	Automated Manufacturing Systems I	3
MEC 111	Materials for Industry	3
<b>Total Credit Hours</b>		<b>18-19</b>

### Mechatronics I

**Award: Career Studies Certificate**

**Additional Program Information:** <https://www.brcc.edu/academics/programs/advanced-manufacturing/>

Purpose: To provide the student with a basic understanding of electrical and mechanical operations. Included is foundational math instruction. This career studies certificate prepares students for entry level positions in industrial maintenance.

Code	Title	Credit Hours
ELE 123	Electrical Applications I	2
ETR 113	D.C. and A.C. Fundamentals I	3

MAC 156	Mechanisms I	3
MEC 161	Basic Fluid Mechanics - Hydraulics/Pneumatics	4
Select one of the following:		3
MTH 111	Basic Technical Mathematics	
MTH 161	Precalculus I	
<b>Total Credit Hours</b>		<b>15</b>

## Manufacturing Engineering Technician I

**Award: Career Studies Certificate**

**Additional Program Information:** <https://www.brcc.edu/academics/programs/advanced-manufacturing/>

Purpose: To provide a basic understanding of manufacturing methods and processes with emphasis on problem solving and process improvement. The completed career studies certificate will provide a foundation for students seeking to enhance their skills in advanced manufacturing.

Code	Title	Credit Hours
BUS 200	Principles of Management	3
Select one of the following:		2-3
CAD 161	Blueprint Reading I	
CAD 140	Technical Drawing	
IND 181	World Class Manufacturing I	3
IND 165	Principles of Industrial Technology I	4
MEC 111	Materials for Industry	3
<b>Total Credit Hours</b>		<b>15-16</b>

## Manufacturing Engineering Technician II

**Award: Career Studies Certificate**

**Additional Program Information:** <https://www.brcc.edu/academics/programs/advanced-manufacturing/>

Purpose: To provide an in depth understanding of major areas involved in day to day operations of a manufacturing facility including leadership, communication, troubleshooting, and financial management. The completed career studies certificate will enhance students' skills in advanced manufacturing.

Code	Title	Credit Hours
CAD 241	Parametric Solid Modeling I	3
EGR 206	Engineering Economics	3
IND 251	Automated Manufacturing Systems I	3
MEC 112	Processes of Industry	3
PHY 100	Elements of Physics	4
<b>Total Credit Hours</b>		<b>16</b>