AUTOMATED MANUFACTURING ENGINEERING TECHNOLOGY, BS

Bachelor of Science in Automated Manufacturing Engineering Technology (287103BS)

More on the Advanced and Automated Manufacturing Engineering Technology programs (https://www.uakron.edu/engineering/me/undergraduate/manufacturing-tech/)

Program Information

Graduates of the Automated Manufacturing Engineering Technology degree will possess knowledge in robotics, computer integrated manufacturing, computer numerical control, manufacturing processes, manufacturing operations management, and quality control techniques to enter technologist level careers in process and system design, manufacturing operations, maintenance, and technical sales or service.

The first two years can be completed as the AAS degree in Advanced Manufacturing Engineering Technology (https://bulletin.uakron.edu/undergraduate/colleges-programs/engineering-polymer-science/mechanical-engineering/adv-manufacturing-engineering-tech/) (288006AAS). Students holding a different relevant associate degree or having completed the first two years of a relevant bachelor degree program can bridge to the final two years of the BS in Automated Manufacturing Engineering Technology using the bridgework shown.

Required Bridgework

1. Completion of a relevant associate degree program in engineering, science, or business technology (or related) or the first two years of a relevant bachelor degree program with a minimum grade point average of 2.0.
2. Completion of AMET 241 Introduction to Quality Assurance or equivalent with a minimum grade of C.
3. Completion of AMET 110 Manufacturing Processes or equivalent with a minimum grade of C.
4. Completion of AMET 248 Introduction to CNC and Additive Manufacturing or equivalent with a minimum grade of C.

Cooperative Education

Cooperative education work experiences are available on an optional basis in this academic program.

The following information has official approval of **The Department of Mechanical Engineering** and **The College of Engineering and Polymer Science**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Progress Report (Stellic) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your academic advisor.

Requirements Summary

Code	Title	Hours
General Education Requirements (https://bulletin.uakron.edu/undergraduate/general-education/) *		21
Courses included in the AAS in Automated Manufacturing Engineering Technology		48
Courses beyond the AAS in Automated Manufacturing Engineering Technology		45
AMET Technical Electives		6
Total Hours		**120**

* Several courses required for the major also satisfy General Education requirements. The University minimum of 36 credits are required for General Education and credit for these courses will apply to multiple requirements.

General Education Courses

Code	Title	Hours
Students pursuing a bachelor's degree must complete the following General Education coursework. Diversity courses may also fulfill major or Breadth of Knowledge requirements. Integrated and Applied Learning courses may also fulfill requirements in the major.		
Academic Foundations		**12**
	Mathematics, Statistics and Logic: 3 credit hours	
	Speaking: 3 credit hours	
	Writing: 6 credit hours	
Breadth of Knowledge		**22**
	Arts/Humanities: 9 credit hours	
	Natural Sciences: 7 credit hours	
	Social Sciences: 6 credit hours	
Diversity		
	Domestic Diversity	
	Global Diversity	
Integrated and Applied Learning		**2**
	Select one class from one of the following subcategories:	
	Complex Issues Facing Society	
	Capstone	
	Review the General Education Requirements page for detailed course listings.	
Total Hours		**36**

Courses that are also included in the Associate of Applied Science in Automated Manufacturing Engineering Technology

These courses are required for the BS in Automated Manufacturing Engineering Technology and are also part of the AAS in Automated Manufacturing Engineering Technology.

Code	Title	Hours
Program-Specific General Education I: 8 credits		
MATH 144	Technical Algebra and Trigonometry 1	4
or MATH 143	Technical Algebra and Trigonometry 1 - Expanded	
PHYS 261	College Physics I	4
Other Discipline Specific Courses I: 15 credits		
MCET 101	Introduction to Mechanical Design	3
MCET 121	Fundamentals of Engineering Drawing	3
MCET 142	Introduction to Material Technology	3
MCET 253	Fluid Mechanics	3
MCET 261	Manufacturing Processes [3]	3
Additional Math and Natural Science I: 3 credits		
MATH 154	Technical Algebra and Trigonometry 2	3
Required Courses / AMET Core I: 22 credits		
AMET 101	Introduction to Advanced Manufacturing [1, 3]	2
AMET 130	Work Measurement & Cost Estimating [1]	3
AMET 151	Industrial Safety & Environmental Protection [2, 3]	2
AMET 201	Robotics & Automated Manufacturing [1]	3
AMET 211	Manufacturing Operations [1]	3
AMET 225	Computer Aided Tool Design [2]	3
AMET 241	Introduction to Quality Assurance	3
AMET 248	Introduction to CNC and Additive Manufacturing	3
Cooperative Education		
One semester of full-time cooperative education or its equivalent is required. Students already working in the manufacturing industry should consult their academic advisor about this requirement.		
GNEN 300	Cooperative Education Work Period	0
or GNEN 301	Cooperative Education Work Period I	
Total Hours		**48**

Courses that are beyond the Associate of Applied Science in Automated Manufacturing Engineering Technology

These courses are required for the BS in Automated Manufacturing Engineering Technology but are not also part of the AAS in Automated Manufacturing Engineering Technology.

Code	Title	Hours
Program-Specific General Education II:		
CHEM 151	Principles of Chemistry I	3
CHEM 152	Principles of Chemistry I Laboratory	1
Other Discipline Specific Courses II:		
MCET 310	Economics of Technology	3
MCET 405	Introduction to Industrial Machine Control	3
EEET 242	Machinery & Controls	3
EEET 370	Survey of Electronics	3
Additional Math and Physical/Natural Science II:		
MATH 255	Technical Calculus I	3
Required Courses / AMET Core:		
AMET 230	3-D Modeling & Design	3
AMET 311	Facilities Planning [2]	3
AMET 348	CNC Programming I [1]	3
AMET 441	Advanced Quality Practices [1]	3
AMET 448	CNC Programming II [2]	3
AMET 480	Automated Production [2]	3
AMET 485	SME Manufacturing Technologist Certification Preparation [2]	2
	AMET Technical Electives (see below)	6
Total Hours		**45**

AMET Technical Electives

A total of six credits of technical elective are required. Students who are interested in pursuing employment in the polymer industry are encouraged to take MCET 370 Plastics Design & Process and MCET 470 Plastics Processing & Testing to satisfy their technical electives.

Code	Title	Hours
Six credits from the following:		**6**
MATH 345	Technical Data Analysis	
MATH 356	Technical Calculus II	
MCET 251	Fluid Power	
MCET 370	Plastics Design & Process	
MCET 470	Plastics Processing & Testing	
STAT 261	Introductory Statistics I	
STAT 262	Introductory Statistics II	
COET 125	Statics	
COET 225	Strength of Materials	
COET 462	Mechanical Service Systems	
COET 463	Electrical Service Systems	
EEET 121	Introduction to Electronics and Computers	
EEET 237	Digital Circuits	
EEET 310	National Electrical Code and Electrical System Design	
Total Hours		**6**

1 Traditionally Fall course.

2 Traditionally Spring course.

3 Students completing NTMA Journeyman's Machinist Program receive block credit for AMET 101 Introduction to Advanced Manufacturing, AMET 151 Industrial Safety & Environmental Protection, and MCET 261 Manufacturing Processes. Credit for courses taken as a part of other Journeyman's programs will be evaluated on a case-by-case basis.

4 Automated Manufacturing Engineering Technology Approved Technical Electives: Students who are interested in pursuing employment in the polymer industry are encouraged to take MCET 370 Plastics Design & Process and MCET 470 Plastics Processing & Testing to satisfy their technical electives.

5 Course must be part of the Ohio Transfer Module

[6] Students should choose a course that also meets the requirements for the Domestic Diversity requirement.
[7] Students should choose a course that also meets the requirements for the Global Diversity requirement.
[8] Check General Education section of undergraduate bulletin for courses that satisfy social science, writing, speaking, arts, humanities, and complex issues general education requirements.

Recommended Sequence

1st Year		
Fall Semester		**Hours**
ENGL 111	English Composition I	3
MATH 144	Technical Algebra and Trigonometry 1	4
MCET 121	Fundamentals of Engineering Drawing	3
AMET 101	Introduction to Advanced Manufacturing [1,3]	2
	Speaking Requirement [8]	3
	Hours	**15**
Spring Semester		
MATH 154	Technical Algebra and Trigonometry 2	3
PHYS 261	College Physics I	4
AMET 151	Industrial Safety & Environmental Protection [2,3]	2
AMET 248	Introduction to CNC and Additive Manufacturing	3
	Social Science Requirement [6]	3
	Hours	**15**
Summer Semester		
GNEN 300	Cooperative Education Work Period	0
	Hours	**0**
2nd Year		
Fall Semester		
MCET 101	Introduction to Mechanical Design	3
MCET 253	Fluid Mechanics	3
AMET 130	Work Measurement & Cost Estimating	3
AMET 201	Robotics & Automated Manufacturing [1]	3
AMET 211	Manufacturing Operations [1]	3
	Hours	**15**
Spring Semester		
MCET 142	Introduction to Material Technology [2]	3
MCET 261	Manufacturing Processes	3
AMET 225	Computer Aided Tool Design [2]	3
AMET 241	Introduction to Quality Assurance	3
	Writing II Requirement	3
	Hours	**15**
3rd Year		
Fall Semester		
CHEM 151	Principles of Chemistry I	3
CHEM 152	Principles of Chemistry I Laboratory	1
MATH 255	Technical Calculus I	3
EEET 370	Survey of Electronics [1]	3
AMET 348	CNC Programming I [1]	3
	Humanities Requirement [8]	3
	Hours	**16**
Spring Semester		
EEET 242	Machinery & Controls [2]	3
AMET 230	3-D Modeling & Design	3
AMET 311	Facilities Planning [2]	3
AMET 448	CNC Programming II	3
	Arts/Humanities Requirement [6]	3
	Hours	**15**
4th Year		
Fall Semester		
MCET 310	Economics of Technology	3
MCET 405	Introduction to Industrial Machine Control [1]	3
AMET 441	Advanced Quality Practices [1]	3
	Technical Elective [4]	3
	Arts Requirement [8]	3
	Hours	**15**
Spring Semester		
AMET 480	Automated Production [2]	3
AMET 485	SME Manufacturing Technologist Certification Preparation [2]	2
	Technical Elective [4]	3
	Complex Issues Requirement [8]	3
	Social Science Requirement [6]	3
	Hours	**14**
	Total Hours	**120**

[1] Traditionally Fall course.
[2] Traditionally Spring course.
[3] Students completing NTMA Journeyman's Machinist Program receive block credit for AMET 101 Introduction to Advanced Manufacturing, AMET 151 Industrial Safety & Environmental Protection, and MCET 261 Manufacturing Processes. Credit for courses taken as a part of other Journeyman's programs will be evaluated on a case-by-case basis.
[4] Automated Manufacturing Engineering Technology Approved Technical Electives: Students who are interested in pursuing employment in the polymer industry are encouraged to take MCET 370 and MCET 470 to satisfy their technical electives.
[5] Course must be part of the Ohio Transfer Module
[6] Students should choose a course that also meets the requirements for the Domestic Diversity requirement.
[7] Students should choose a course that also meets the requirements for the Global Diversity requirement.
[8] Check General Education section of undergraduate bulletin for courses that satisfy social science, writing, speaking, arts, humanities, and complex issues general education requirements.

You must have a minimum cumulative GPA of a 2.0 to graduate with this degree.