

MECHANICAL ENGINEERING TECHNOLOGY, BS

Bachelor of Science in Mechanical Engineering Technology (292104BS)

More on the Mechanical Engineering Technology major (<https://www.uakron.edu/engineering/ME/>)



Contact Information

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Program Information

Mechanical Engineering Technology is concerned with product testing, the design of products, and the machines required to manufacture them.

Our students include: recent high school graduates, transfers from other colleges and institutions, and those students currently employed who are looking for a degree in mechanical engineering technology. As our mission statement states: "We provide high quality educational opportunities necessary to assist a diverse student population to achieve its career goals in the field of mechanical engineering technology." The Mechanical Engineering Technology, BS Degree is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

Program Educational Objectives

Program educational objectives are broad statements that describe what graduates are expected to attain within a few years after graduation. Program educational objectives are based on the needs of the program's constituencies (i.e., students, alumni, employers of our students, and faculty of the program), including being able to:

1. be successfully employed in a mechanical engineering technology related field capable of earning promotions, professional registration/licensing, certification, other recognition;
2. be effective in the understanding and application of mechanical engineering technology principles;
3. effectively communicate, work, and lead cross functional teams;
4. expand their technical knowledge through professional development, continuing education, or the pursuit of a graduate degree;
5. conduct their work within the accepted standards of professional integrity and ethics; and
6. serve in technical societies and other community service areas.

Student Outcomes

Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge,

skills, and behaviors that students acquire as they progress through the program, including:

1. an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
3. an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
4. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes;
5. an ability to function effectively as a member as well as a leader on technical teams.

Placement or Optional Cooperative Education

Co-op work experiences are available on an optional basis in this academic program. To obtain additional information, contact the Career Center regarding these opportunities.

For additional information regarding career opportunities in the Mechanical Engineering Technology field, please visit the Bureau of Labor Statistics at www.bls.gov (<http://www.bls.gov>) or the Career Center at the Student Union, room 211, (330-972-7747) <http://www.uakron.edu/career> (<http://www.uakron.edu/career/>)

The following information has official approval of **The Department of Engineering and Science Technology** 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 (DPR) 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/) *	22
	Required Courses	51
	Discipline Specific Courses	23
	Math and Physical/Natural Science Courses	26
	Technical Electives	5
	Total Hours	127

* Several courses required for the major also satisfy General Education requirements. The University minimum of 34 credits are required for General Education and credit for these courses will apply to both.

Recommended General Education Courses

Code	Title	Hours
Students pursuing a bachelor's degree must complete three tiers of General Education coursework. Tiers I and II provide students with foundational skills and breadth of disciplinary knowledge. Tier III courses require students to integrate knowledge, understand diverse perspectives, and think critically about complex issues. Courses tagged for Tier III may also fulfill major or Disciplinary Area requirements.		
Students are not required to enroll in the specific courses listed below. However, to facilitate successful degree completion, the academic department strongly encourages completion of the following recommendations.		
Tier I: Academic Foundations		12
<i>Quantitative Reasoning: 3 credit hours</i>		
<i>Speaking: 3 credit hours</i>		
2420:263	Professional Communications and Presentations	
<i>Writing: 6 credit hours</i>		
2020:121	English	
2020:222	Technical Report Writing	
Tier II: Disciplinary Areas		22
<i>Arts/Humanities: 9 credit hours</i>		
3600:101	Introduction to Philosophy	
	or 3600:120 Introduction to Ethics	
	or 3600:170 Introduction to Logic	
7100:210	Visual Arts Awareness	
	or 7500:201 Exploring Music: Bach to Rock	
	or 7900:200 Viewing Dance	
<i>Natural Sciences: 7 credit hours</i>		
<i>Social Sciences: 6 credit hours</i>		
3002:256	Diversity in American Society	
	or 3850:100 Introduction to Sociology	
	or 7750:244 Death & Dying	
2040:243	Contemporary Global Issues	
Tier III: Tagged Courses		
<i>Select one class from each of the following subcategories:</i>		
Complex Systems		
2040:241	Technology & Human Values	
Critical Thinking		
3600:101	Introduction to Philosophy	
	or 3600:120 Introduction to Ethics	
	or 3600:170 Introduction to Logic	
Domestic Diversity		
3002:256	Diversity in American Society	
	or 3850:100 Introduction to Sociology	
	or 7750:244 Death & Dying	
Global Diversity		
2040:243	Contemporary Global Issues	
<i>Review the General Education Requirements page for detailed course listings.</i>		
Total Hours		34

Required Courses

Code	Title	Hours
2920:100	Survey of Mechanical Engineering Technology ¹	2
2920:101	Introduction to Mechanical Design (Sch. Lab) ¹	3
2920:121	Fundamentals of Engineering Drawing (Sch. Lab)	3
2920:142	Introduction to Material Technology (Sch. Lab) ²	3
2920:243	Kinematics (Sch. Lab) ¹	3
2920:245	Mechanical Design II (Sch. Lab) ²	5
2920:249	Applied Thermal Energy I ²	2
2920:251	Fluid Power ¹	2
2920:252	Thermo-Fluids Laboratory ²	1
2920:310	Economics of Technology	3
2920:344	Dynamics ¹	3
2920:346	Mechanical Design III (Sch. Lab) ²	4
2920:347	Production Machinery & Processes ²	3
2920:365	Applied Thermal Energy II ¹	3
2920:370	Plastics Design & Process ¹	3
2920:402	Mechanical Projects ²	2
2920:405	Introduction to Industrial Machine Control (Sch. Lab) ¹	3
2920:470	Plastics Processing & Testing (Sch. Lab) ²	2
2920:490	Mechanical Engineering Technology Senior Seminar ¹	1
Total Hours		51

Discipline Specific Courses

Code	Title	Hours
2860:242	Machinery & Controls ²	3
2860:370	Survey of Electronics I (Sch. Lab) ¹	3
2880:241	Introduction to Quality Assurance (Sch. Lab)	3
2880:248	Introduction to CNC and Additive Manufacturing	3
2990:125	Statics	3
2990:225	Strength of Materials	3
	Technical Electives ³	5
Total Hours		23

Math and Physical/Natural Science Courses

Code	Title	Hours
2030:154	Technical Mathematics IV	3
2030:255	Technical Calculus I	3
2030:356	Technical Calculus II	3
2820:111	Introductory Chemistry (Sch. Lab) ¹	3
2820:112	Introductory & Analytical Chemistry ²	3
2820:131	Software Applications for Technology (Sch. Lab)	1
2820:310	Programming for Technologists (Sch. Lab)	2
3650:160	Technical Physics: Mechanics (Sch. Lab)	4
3650:163	Technical Physics: Electricity & Magnetism (Sch. Lab)	2
3650:164	Technical Physics: Heat & Light (Sch. Lab)	2
Total Hours		26

Technical Electives

Code	Title	Hours
Complete 5 credits		5
2030:345	Technical Data Analysis	
2850:100	Introduction to Corrosion Technology ^{1,4}	
2850:200	Advanced Corrosion Technology ^{2,4}	
2860:121	Introduction to Electronics and Computers	
2860:237	Digital Circuits (Sch. Lab)	
2860:238	Microprocessor Applications	
2860:360	Virtual Instrumentation and Data Acquisition	
2870:311	Facilities Planning	
2870:332	Management of Technology Based Operations	
2870:441	Advanced Quality Practices	
2870:448	CNC Programming II	
2870:480	Automated Production	
2880:130	Work Measurement & Cost Estimating	
2880:201	Robotics & Automated Manufacturing	
2880:211	Manufacturing Operations	
2880:230	3-D Modeling & Design	
2920:130	Introduction to Hydraulics and Pneumatics (Sch. Lab) ¹	
2920:290	Special Topics: Mechanical Engineering Technology	
2920:498	Independent Study in Mechanical Engineering Technology	
2980:101	Basic Surveying	
2990:462	Mechanical Service Systems	
2990:463	Electrical Service Systems	
Total Hours		5

Discipline Specific General Education Courses

Code	Title	Hours
2020:121	English	
2020:222	Technical Report Writing	
2040:243	Contemporary Global Issues	
2420:263	Professional Communications and Presentations	
2040:241	Technology & Human Values	
<i>Select one of the following:</i>		
3002:256	Diversity in American Society	
3850:100	Introduction to Sociology	
7750:244	Death & Dying	
<i>Select one of the following:</i>		
3600:101	Introduction to Philosophy	
3600:120	Introduction to Ethics	
3600:170	Introduction to Logic	
	Arts or Humanities Requirement ⁵	
<i>Select one of the following:</i>		
7100:210	Visual Arts Awareness	
7500:201	Exploring Music: Bach to Rock	
7900:200	Viewing Dance	

Arts Requirement ⁵Humanities Requirement ⁵

- ¹ Traditionally Fall course (See Program Contact).
- ² Traditionally Spring course (See Program Contact).
- ³ Mechanical Engineering Technology Approved Technical Electives: Availability dependent on enrollment demands and classroom availability.
- ⁴ The student must take both the Introduction and Advanced Corrosion Technology courses to receive the Corrosion Technology Certificate. Other requirements may be required in addition. Please check with the student advisor to be sure.
- ⁵ Must be a course in the Ohio Transfer Module.

Recommended Sequence

1st Year

Fall Semester		Hours
2020:121	English	3
2030:154	Technical Mathematics IV	3
2920:100	Survey of Mechanical Engineering Technology ¹	2
2920:121	Fundamentals of Engineering Drawing (Sch. Lab)	3
3650:160	Technical Physics: Mechanics (Sch. Lab)	4
Hours		15

Spring Semester

2020:222	Technical Report Writing	3
2420:263	Professional Communications and Presentations	3
2820:131	Software Applications for Technology (Sch. Lab)	1
2990:125	Statics	3
3650:163	Technical Physics: Electricity & Magnetism (Sch. Lab)	2
3650:164	Technical Physics: Heat & Light (Sch. Lab)	2
Hours		14

2nd Year

Fall Semester

2030:255	Technical Calculus I	3
2880:248	Introduction to CNC and Additive Manufacturing	3
2920:101	Introduction to Mechanical Design (Sch. Lab) ¹	3
2920:243	Kinematics (Sch. Lab) ¹	3
2920:251	Fluid Power ¹	2
2990:225	Strength of Materials	3
Hours		17

Spring Semester

2040:243	Contemporary Global Issues	3
<i>Select one of the following:</i>		
3002:256	Diversity in American Society	
3850:100	Introduction to Sociology	
7750:244	Death & Dying	

2920:142	Introduction to Material Technology (Sch. Lab) ²	3
2920:245	Mechanical Design II (Sch. Lab) ²	5
2920:249	Applied Thermal Energy I ²	2
2920:252	Thermo-Fluids Laboratory ²	1
	Hours	17

3rd Year**Fall Semester**

2030:356	Technical Calculus II	3
2820:111	Introductory Chemistry (Sch. Lab) ¹	3
2820:310	Programming for Technologists (Sch. Lab)	2
2860:370	Survey of Electronics I (Sch. Lab) ¹	3
2920:344	Dynamics ¹	3
	Technical Elective ³	2
	Hours	16

Spring Semester

2820:112	Introductory & Analytical Chemistry ²	3
2860:242	Machinery & Controls ²	3
2920:346	Mechanical Design III (Sch. Lab) ²	4
2920:347	Production Machinery & Processes ²	3
	Technical Elective ³	3
	Select one of the following:	3
3600:101	Introduction to Philosophy	
3600:120	Introduction to Ethics	
3600:170	Introduction to Logic	
	Arts or Humanities Requirement ⁵	
	Hours	19

4th Year**Fall Semester**

2920:310	Economics of Technology	3
2920:365	Applied Thermal Energy II ¹	3
2920:370	Plastics Design & Process ¹	3
2920:405	Introduction to Industrial Machine Control (Sch. Lab) ¹	3
2920:490	Mechanical Engineering Technology Senior Seminar ¹	1
	Humanities Requirement ⁵	3
	Hours	16

Spring Semester

2040:241	Technology & Human Values	3
2920:402	Mechanical Projects ²	2
2880:241	Introduction to Quality Assurance (Sch. Lab)	3
2920:470	Plastics Processing & Testing (Sch. Lab) ²	2
	Select one of the following:	3
7100:210	Visual Arts Awareness	
7500:201	Exploring Music: Bach to Rock	
7900:200	Viewing Dance	
	Arts Requirement ⁵	
	Hours	13
	Total Hours	127

¹ Traditionally Fall course (See Program Contact).

² Traditionally Spring course (See Program Contact).

³ Mechanical Engineering Technology Approved Technical Electives: Availability dependent on enrollment demands and classroom availability.

⁴ The student must take both the Introduction and Advanced Corrosion Technology courses to receive the Corrosion Technology Certificate. Other requirements may be required in addition. Please check with the student advisor to be sure.

⁵ Must be a course in the Ohio Transfer Module.

Policy Alert: By the end of your first 48 credit hours attempted, you must have completed your required General Education English, Mathematics, and Communications (Speech) requirements.