BACHELOR OF SCIENCE IN APPLIED SCIENCE IN MECHANICAL ENGINEERING TECHNOLOGY

Students who have earned the associate degree may elect to complete the bachelor's degree on either a full- or part-time basis. Courses in the bachelor's degree program further develop technical, communication, and managerial skills. Upon successful completion of the coursework, graduates are awarded the Bachelor of Science in Applied Science degree and are prepared for greater levels of responsibility and greater career advancement.

Graduates of the BSAS degree program obtain employment as engineers or engineering designers for government agencies, consulting engineers and architects, industry and manufacturing, and contractors. Because their education is more extensive, they are prepared for more responsibility and more-rapid advancement. BSAS engineers and designers plan, design, and inspect production and maintenance activities.

Based on an evaluation of their work, transfer students who have a related associate degree from a regionally accredited institution may be admitted to the bachelor's degree program at the junior level.

Program Educational Objectives

Educational objectives for the mechanical engineering technology programs have been developed by faculty and the program industrial advisory committee to support the university, the college, and the School of Engineering Technology missions. Graduates of the MET associate degree program function as assistants in the design, drafting and testing of mechanical products, equipment and processes. Bachelor's degree graduates assume greater responsibility in the design and testing of mechanical products, processes, and equipment.

During their first few years after completion of the mechanical engineering technology program at YSU, graduates will have demonstrated the ability to:

- Work competently in technical and professional careers related to the field of mechanical engineering technology.
- Communicate effectively in a professional environment.
- Continue growth in professional knowledge and skills.
- Achieve recognition and/or compensation consistent with their educational achievements.

Accreditation

The Bachelor of Science in Applied Science in Mechanical Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET, https://www.abet.org/, under the General Criteria and the Program Criteria for Mechanical Engineering Technology.

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Date of last campus visit:   October 2024
Accredited through:   2030
Next campus visit:     October 2029
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COURSE	TITLE	S.H.
FIRST YEAR REQUIREMENT - STUDENT SUCCESS		
YSU 1500	Success Seminar	1-2
or YSU 1500S	Youngstown State University Success Seminar	
or HONR 1500	Intro to Honors	
General Education Courses		
Writing		
ENGL 1550	Writing 1	3-4
or ENGL 1549	Writing 1 with Support	
ENGL 1551	Writing 2	3
Math		
MATH 1513	Algebra and Transcendental Function	5-10
or MATH 1510 and 1511		
or MATH 1510C and 1511C		
Natural Science		
CHEM 1515	General Chemistry 1	3
CHEM 1515L	General Chemistry 1 Laboratory	1
PHYS 1501	Fundamentals of Physics 1	4
or PHYS 2610	General Physics 1	
GER Arts and Humanities		6
GER Social Science		6
General Education Electives		
MATH 1570	Applied Calculus 1	4
or MATH 1571	Calculus 1	
Two Additional Gen Ed Electives from any topic		6
Courses in the Major		
CCET 2604	Properties and Strength of Materials	3
CCET 2614L	Materials Laboratory 1	2
EET 3712 & 3712L	Programmable Logic Controllers and PLC Laboratory	4
EET 3715	Industrial Instrumentation and Control	3
EET 3725 & 3725L	Electromechanical Systems and Electromechanical Systems Lab	4
ENTC 1505	Engineering Technology Concepts	4
ENGR 1550 and ENGR 1560		
MET 1515	Mechanics 1	3
MET 2606	Solid Modeling	4
MET 2607	Geometric Dimensioning and Tolerancing	3
MET 2616	Mechanics 2	3
MET 2630	Manufacturing Techniques	3
MET 2630L	Manufacturing Techniques Laboratory	1
MET 3705	Thermodynamics	4
MET 3706	Machine Design 1	4
MET 3707	Machine Design 2	3
MET 3713	Fluid Power Systems	3
MET 3711	Heat and Power Cycles	4
MET 3714 & 3714L	Fluid Mechanics and Fluid Mechanics Laboratory	4
MET 3720	Mechanisms	3
MET 4810	Manufacturing Systems Analysis	3
MET 4820	Machine Systems	3
MET 4860 & 4860L	Robotics Technology and Robotics Technology Laboratory	3
MET 4870	Applied Finite Element Method	3
MET Elective: Select 6 hours from list below:		**6**
MET 3710	Tool Design	
MET 4812 & 4812L	Numerical Control and Numerical Control Lab	
MET 4890	Special Topics in Mechanical Engineering Technology	
ENTC 4895	Independent Engineering Technology Project	
ISEN/MGT Elective: Select 3 hours from list below:		**3**
ENT 3700	Entrepreneurship New Venture Creation	
ISEN 3720	Statistical Quality Control	
MGT 3725	Fundamentals of Management	
MGT 2604	Legal and Social Responsibilities of Business	

STEM 4890	STEM Internship	
Total Semester Hours		**125-132**

Year 1

Fall		**S.H.**
YSU 1500 or SS 1500 or HONR 1500	Success Seminar or or Intro to Honors	1-2
ENGL 1550 or ENGL 1549	Writing 1 or Writing 1 with Support	3-4
ENTC 1505	Engineering Technology Concepts	4
or ENGR 1550 and 1560		
MATH 1513	Algebra and Transcendental Function	5-10
or MATH 1510 and 1511		
or MATH 1510C and 1511C		
MET 2606	Solid Modeling	4
	Semester Hours	**17-24**
Spring		
General Ed AH Elective (1 of 2)		3
MATH 1570 or MATH 1571	Applied Calculus 1 or Calculus 1	4
MET 1515	Mechanics 1	3
MET 2607	Geometric Dimensioning and Tolerancing	3
PHYS 1501 or PHYS 2610	Fundamentals of Physics 1 or General Physics 1	4
	Semester Hours	**17**

Year 2

Fall		
CCET 2604	Properties and Strength of Materials	3
CCET 2614L	Materials Laboratory 1	2
EET 3725	Electromechanical Systems	3
EET 3725L	Electromechanical Systems Lab	1
MET 2630	Manufacturing Techniques	3
MET 2630L	Manufacturing Techniques Laboratory	1
MET 4860	Robotics Technology	2
MET 4860L	Robotics Technology Laboratory	1
	Semester Hours	**16**
Spring		
EET 3712	Programmable Logic Controllers	3
EET 3712L	PLC Laboratory	1
ENGL 1551	Writing 2	3
MET 3706	Machine Design 1	4
MET 3713	Fluid Power Systems	3
MET 4812	Numerical Control	2
MET 4812L	Numerical Control Lab	1
	Semester Hours	**17**

Year 3

Fall		
General Ed SS Elective (1 of 2)		3
CHEM 1515	General Chemistry 1	3
CHEM 1515L	General Chemistry 1 Laboratory	1
MET 2616	Mechanics 2	3
MET 3714	Fluid Mechanics	3
MET 3714L	Fluid Mechanics Laboratory	1
MET 3707	Machine Design 2	3
	Semester Hours	**17**
Spring		
EET 3715	Industrial Instrumentation and Control	3
MET 3705	Thermodynamics	4
MET 4870	Applied Finite Element Method	3
General Ed SS Elective (2 of 2)		3
General Ed Open Elective (2 of 3)		3
	Semester Hours	**16**

Year 4

Fall		
MET 3711	Heat and Power Cycles	4
MET 3720	Mechanisms	3
MET Elective (1 of 2)		3
Gen Ed Open Elective (3 of 3)		3
	Semester Hours	**13**
Spring		
MET 4820	Machine Systems (Capstone)	3
ISEN/MGT Elective		3
MET Elective (2 of 2)		3
General Ed AH (2 of 2)		3
	Semester Hours	**12**
	Total Semester Hours	**125-132**

Electives

COURSE	**TITLE**	**S.H.**
MET Electives		
Select two of the following:		6
ENTC 4895	Independent Engineering Technology Project	1-4
MET 3710	Tool Design	3
MET 4812	Numerical Control	2
MET 4812L	Numerical Control Lab	1
MET 4830	Intro to Additive Manufacturing	3
MET 4890	Special Topics in Mechanical Engineering Technology	1-4
ISEN/MGT Electives		**3**
Select one of the following:		
ENT 3700	Entrepreneurship New Venture Creation	
ISEN 3720	Statistical Quality Control	
ISEN 3724		
MGT 3725	Fundamentals of Management	
MGT 2604	Legal and Social Responsibilities of Business	
Total Semester Hours		**20-26**

PROGRAM OUTCOMES

BACHELOR OF SCIENCE IN APPLIED SCIENCE IN MECHANICAL ENGINEERING TECHNOLOGY

Graduates of the Bachelor's Degree in Mechanical Engineering Technology will possess the following competencies upon graduation:

- 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;
- an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
- 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;
- an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and

- an ability to function effectively as a member as well as a leader on technical teams