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, with a path to the BSAS degree.
- Communicate effectively in a professional environment.
- Continue growth in professional knowledge and skills.
- Achieve recognition and/or compensation consistent with their educational achievements.

Accreditation and Registration

The mechanical engineering technology bachelor program is accredited by the ETAC Accreditation Commission of ABET, http://www.abet.org. In most states, including Ohio, West Virginia and Pennsylvania, bachelor's degree graduates are qualified to take the Fundamentals of Engineering (FE) exam, and, with sufficient work experience, the Professional Engineers (PE) exam. Graduates are also qualified to apply to the National Institute for Certification in Engineering Technologies (NICET) for certification procedures in various specialty areas, depending on academic major and employment area.

Date of last campus visit: October, 2017
Accredited through: 2024
Next campus visit: 2023
Link to accrediting body: ABET (http://www.abet.org/)

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<thead>
<tr>
<th>COURSE</th>
<th>TITLE</th>
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<tr>
<td>FIRST YEAR REQUIREMENT - STUDENT SUCCESS</td>
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<tr>
<td>YSU 1500</td>
<td>Success Seminar</td>
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<td>or SS 1500</td>
<td>Strong Start Success Seminar</td>
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<td>or HONR 1500</td>
<td>Intro to Honors</td>
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<td>General Education Courses:</td>
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<tr>
<td>ENGL 1550</td>
<td>Writing 1</td>
<td>3-4</td>
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<tr>
<td>or ENGL 1549</td>
<td>Writing 1 with Support</td>
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<tr>
<td>ENGL 1551</td>
<td>Writing 2</td>
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<tr>
<td>CMST 1545</td>
<td>Communication Foundations</td>
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<tr>
<td>MATH 1513</td>
<td>Algebra and Transcendental Function</td>
<td>5</td>
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<tr>
<td>CHEM 1515</td>
<td>General Chemistry 1</td>
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& 1515L     | General Chemistry 1 Laboratory Lecture is 4 sh lab is 0 sh |
| PHYS 1501 | Fundamentals of Physics 1                  | 4    |
| GER Social Science                                   | 3    |
| GER Social Science                                   | 3    |
| GER Arts and Humanities                               | 3    |
| GER Arts and Humanities                               | 3    |
| GER SPA                                              | 3    |
| GER SPA                                              | 3    |
| Courses in the Major:                                |      |
| MATH 1570  | Applied Calculus 1                         | 4    |
| MATH 2670  | Applied Calculus 2                         | 5    |
| ENTC 1505  | Engineering Technology Concepts            | 4    |
| CCET 1503  | CAD Technology                             | 2    |
| CCET 1504  | Drafting and Plan Reading                  | 2    |
| CCET 2604  | Properties and Strength of Materials       | 3    |
| CCET 2614L | Materials Laboratory                       | 1    |
| MET 1515   | Mechanics 1                                | 3    |
| MET 2606   | Solid Modeling                             | 4    |
| MET 2616   | Mechanics 2                                | 3    |
| MET 2630   | Manufacturing Techniques                   | 4    |
& 2630L     | Manufacturing Techniques Laboratory Lecture is 3 sh lab is 1 sh |
| MET 3706   | Machine Design 1                           | 4    |
| MET 3714   | Fluid Mechanics                            | 5    |
& 3714L     | Fluid Mechanics Laboratory Lecture is 4 sh lab is 1 sh |
| MET 3720   | Mechanisms                                 | 3    |
| MET 3707   | Machine Design 2                           | 3    |
| EET 3725   | Electromechanical Systems                  | 4    |
& 3725L     | Electromechanical Systems Laboratory Lecture is 3 sh lab is 1 sh |
| MET 3705   | Thermodynamics                             | 4    |
| CCET 3705  | Computing for Technologists                | 3    |
| MET 3711   | Heat and Power Cycles                      | 4    |
| MET 4860   | Robotics Technology                        | 3    |
& 4860L     | Robotics Technology Laboratory Lecture is 2 sh lab is 1 sh |
| MET 4810   | Manufacturing Systems Analysis             | 3    |
| MET 4820   | Machine Systems                            | 3    |
| MET 4870   | Applied Finite Element Method              | 3    |
| MET Elective: Select 6 hours from list below         |      |
| MET 3710   | Tool Design                                | 6    |
| MET 4812   | Numerical Control                          |      |
& 4812L     | Numerical Control Laboratory Lecture is 3 sh lab is 1 sh |
| MET 4890   | Special Topics in Mechanical Engineering Technology |      |
| ENTC 4895 | Independent Engineering Technology Project |      |
Bachelor of Science in Applied Science in Mechanical Engineering Technology

ISEN/MGT Elective: Select 3 hours from list below

- ISEN 3720 Statistical Quality Control
- MGT 3725 Fundamentals of Management
- MGT 2604 Legal Environment of Business 1
- ENT 3700 Entrepreneurship New Venture Creation

Total Semester Hours: 128-130

Year 1

Fall
- YSU 1500 Success Seminar 1
- ENTC 1505 Engineering Technology Concepts 4
- MATH 1513 Algebra and Transcendental Function 5
- ENGL 1550 or ENGL 1549 Writing 1 or Writing 1 with Support 3-4
- CCET 1503 CAD Technology 2
- CCET 1504 Drafting and Plan Reading 2

Semester Hours: 17-18

Spring
- MET 1515 Mechanics 1 3
- CCET 2604 Properties and Strength of Materials 3
- CCET 2614L Materials Laboratory 1 2
- MATH 1570 Applied Calculus 1 4
- MET 2606 Solid Modeling 4

Semester Hours: 16

Year 2

Fall
- MET 2616 Mechanics 2 3
- MET 3714 Fluid Mechanics 5
- & 3714L Fluid Mechanics Laboratory 3
- PHYS 1501 Fundamentals of Physics 1 4
- Arts & Humanities GER 3 3

Semester Hours: 15

Spring
- MET 2630 Manufacturing Techniques 4
- & 2630L Manufacturing Techniques Laboratory 4
- MET 3706 Machine Design 1 4
- CHEM 1515 & 1515L General Chemistry 1 and General Chemistry 1 Laboratory 4
- ENGL 1551 Writing 2 3
- Social Science GER 3 3

Semester Hours: 18

Year 3

Fall
- MET 3720 Mechanisms 3
- MET 3707 Machine Design 2 3
- EET 3725 Electromechanical Systems 4
- & 3725L Electromechanical Systems Lab 4
- MATH 2670 Applied Calculus 2 5

Semester Hours: 15

Spring
- MET 3705 Thermodynamics 4
- CCET 3705 Computing for Technologists 3
- MET 4860 Robotics Technology 3
- & 4860L Robotics Technology Laboratory 3
- CMST 1545 Communication Foundations 3
- MET Elective 3 3

Semester Hours: 16

Year 4

Fall
- MET 3711 Heat and Power Cycles 4
- MET 4810 Manufacturing Systems Analysis 3
- MET Elective 1 3
- Social Science GER 3 3
- Arts and Humanities GER 3 3

Semester Hours: 15

Spring
- MET 4820 Machine Systems (Capstone) 3
- MET 4870 Applied Finite Element Method 3
- Social & Personal Awareness GER 3 3
- Social & Personal Awareness GER 3 3
- ISEN/MGT Elective 2 3

Semester Hours: 16

Total Semester Hours: 128-129

Electives

COURSE

- MET Electives
  Select two of the following:
  - MET 3710 Tool Design 2-8
  - MET 4812L Numerical Control Laboratory
  - MET 4890 Special Topics in Mechanical Engineering Technology
  - ENTC 4895 Independent Engineering Technology Project

- ISEN/MGT Electives
  Select one of the following:
  - ISEN 3720 Statistical Quality Control 3
  - ISEN 3724 Engineering Economy 3
  - MGT 3725 Fundamentals of Management 3
  - MGT 2604 Legal Environment of Business 1 3

Total Semester Hours: 5-11

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:

- mastery of knowledge, skills, and tools of the discipline
- ability to apply knowledge to solve engineering problems
- ability to conduct, analyze, and interpret experiments
- ability to be creative in design
- ability to work effectively in teams
- ability to identify, analyze, and solve technical problems
• ability to communicate effectively
• recognition of the need to engage in lifelong learning
• ability to understand professional, ethical, and social responsibilities
• respect for diversity, professional, societal, and global issues
• commitment to quality, timeliness, and continuous improvement