Mechanical Engineering Technology

The mission of the Mechanical Engineering Technology (MET) program is to prepare students for successful Mechanical Engineering Technology careers, responsible citizenship, and continued professional growth. The MET program seeks to produce graduates with a foundation in engineering fundamentals, applications, design, problem recognition and resolution, project management, communication, and professional and ethical responsibility. The MET undergraduate program is accredited by the Engineering Technology Accreditation Commission of ABET, 415 N. Charles Street, Baltimore, MD, 21201, or by telephone: (410) 347-7700. The educational objectives of the MET program follow.

The Mechanical Engineering Technology program strives to prepare graduates who:

- Successfully establish themselves as professionals within a diverse range of engineering technology activities
- Conduct themselves ethically in all activities
- Contribute to industry and society, through service activities and professional organizations
- Advance in their profession, maintain currency within the profession, and demonstrate leadership qualities

The undergraduate Mechanical Engineering Technology program is designed with an applications-oriented structure. Many of the technical science courses have an accompanying laboratory component providing hands-on activities. Coursework emphasizes mechanical design, measurement, data collection and analysis, documentation, and written/oral report preparation/presentation.

The program aims to develop core competencies in engineering fundamentals (statics, strengths of materials, materials science, fluid dynamics, and electrical circuits), manufacturing applications (manufacturing processes, machining, welding, design for manufacturing and tooling, and quality assurance), mechanical design (computer-aided design, mechanisms, machine design, fluid power technology, measurement and test, etc.), and thermal sciences (thermodynamics, heat transfer, and heating, ventilation, and air conditioning). Extensive course work in the physical sciences and Mathematics is included.

Technical elective courses are chosen by the student in consultation with an academic advisor. Core coursework includes offerings such as humanities, arts, and social sciences. The overall curriculum is designed to provide the student with an ability to apply scientific and engineering knowledge and methods combined with technical skills in support of engineering activities.

Mechanical engineering technology (MET) is concerned with the application of scientific and engineering knowledge in support of engineering activities. Specifically, the mechanical engineering technologist provides the professional services needed in transforming the results of scientific endeavors into useful products and services. Students who choose a career in mechanical engineering technology may pursue any number of career paths including, but not limited to: machine and product design, product and system evaluation, research laboratory experimental support, prototype evaluation, plant operation and management, quality assurance, technical sales, manufacturing methods improvement, HVAC systems design and installation, project management, and energy exploration.

The mechanical engineering technologist is equipped to perform analysis and planning steps to convert ideas into finished products, in the most efficient and safe manner. He or she may be the professional who produces computer models, design drawings, sets up and operates manufacturing equipment, handles inspections, analyzes production problems, and manages the implementation of product realization and product improvement activities.

The demand for the mechanical engineering technologists continues to be strong. Average starting salaries are very competitive, and indications are that this trend will continue. MSU Mechanical Engineering Technology graduates are actively recruited, and many of our alumni hold positions of considerable responsibility in industry and government.

Student Performance and Retention Requirements

No further requirements apply in order to advance in the Mechanical Engineering Technology program.
ETME 340 - Mechanisms  
ETME 310R - Multidisciplinary Engineering Design  
ETME 303 - CAE Tools in Mechanical Design  
ETME 321 - Applied Heat Transfer  
ETME 311 - Joining Processes  
ETME 341 - Machine Design  
Year Total: 16  
Senior Year Credits  
EGEN 325 - Engineering Economic Analysis or EGEN 330 - Business Fundamentals for Technical Professionals 3  
ETME 422 - Principles of HVAC I 3  
ETME 424 - Thermal Processes Lab 1  
ETME 489 - Capstone: Mechanical Engineering Technology Design I 2  
Professional Electives3 6  
ETME 415 - Design for Manufacturing and Tooling 3  
ETME 499R - Capstone: Mechanical Engineering Technology Design II 3  
EGEN 488 - Fundamentals of Engineering Exam 0  
Professional Electives3 6  
University Core Electives 3  
Year Total: 15  
Total Program Credits: 126  

Pre-Approved MET Professional Elective Courses:  
EGEN 365 - Introduction to Mechatronics 3  
EIND 300 - Engineering Management & Ethics 3  
EIND 313 - Work Design and Analysis 3  
EIND 371 - Introduction to Computer Integrated Manufacturing 3  
EIND 373 - Production Inventory Cost Analysis 3  
EIND 410 - Interaction Design 3  
& EIND 411 - Interaction Design Project  
EIND 413 - Ergonomics & Human Factors Engineering 3  
EIND 422 - Introduction to Simulation 3  
EIND 425 - Technology Entrepreneurship 3  
EIND 434 - Project Management for Engineers 3  
EIND 477 - Quality Management Systems 3  
EMAT 350 - Engineering Materials 3  
EMAT 461 - Friction and Wear of Materials 3  
EMAT 462 - Manufacturing of Composites 3  
EMAT 463 - Composite Materials 3  
EMAT 464 - Biomedical Materials Engineering 3  
EMEC 440 - Biomechanics of Human Movement 3  
EMEC 444 - Mech Behavior of Materials 3  
EMEC 447 - Aircraft Structures 4  
EMEC 465 - Bio-inspired Engineering 3  
EMEC 467 - Micro-Electromechanical Systems 3  
ETME 309 & ETME 327 - Building Information Modeling in MEP and Commercial Building Energy Assessment Lab 3  
ETME 410 - Computerized Numerical Control and Computer-aided Manufacturing Technology 3  
ETME 423 - Principles of HVAC II 3  
ETME 430 - Fluid Power Systems Design 3  
ETME 460 - Advanced Instrumentation 3  
ETME 462 - Industrial Processing Automation and Controls 3  
ETME 470 - Renewable Energy Applications 3  
ETME 490R - Undergraduate Research 1-3  
ETME 492 - Independent Study 1-3  
ETME 498 - Internship 1-3  

1 Students exempt from MSU writing requirement must still complete a 3 credit writing intensive course. See MIE Writing Policy (http://www.montana.edu/mie/students/advising_forms/documents/Advising_Forms_All_Terms/Writing%20Exemption%20Policy%206-30-15.pdf).  
2 Business Elective: Choose ACTG 201, ACTG 220, BGEN 204, BGEN 210, BMGT 205, BMKT 241, ECNS 132, ECNS 202, or ECNS 204IS.  

A minimum of 126 credits is required for graduation; 42 of these credits must be in courses numbered 300 and above.
Font Notice

This document should contain certain fonts with restrictive licenses. For this draft, substitutions were made using less legally restrictive fonts. Specifically:

Times was used instead of Adobe Garamond Pro.

The editor may contact Leepfrog for a draft with the correct fonts in place.