

MANUFACTURING AND MECHANICAL ENGINEERING TECHNOLOGY - BS

Manufacturing and Mechanical Engineering technology (MMET) prepares students for dynamic careers in industry. Graduates are versatile and effective in diverse areas that require understanding of the dependencies among material properties, product design, costs, manufacturing systems, and process technologies. The student views manufacturing from an enterprise and system perspective, recognizing the importance of customer and supplier interactions. To meet these diverse needs, this degree program provides a foundation of mathematics, science, and specialized technical courses, as well as preparation in oral and written communication. The three main areas of concentration are product design, manufacturing systems integration and automation, and quality assessment. Studies in these areas are supported by a solid foundation in materials and manufacturing processes.

The Manufacturing and Mechanical Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org/>.

Program Mission

The mission of the Manufacturing and Mechanical Engineering Technology program at Texas A&M University is to provide a high-quality, application-oriented education producing professionals who can effectively contribute to leadership, the advancement of manufacturing and mechanical engineering technology, and improved performance of industrial endeavors. The educational mission is complemented by applied research and the development of new interdisciplinary technology that mutually benefits the university and its industrial, governmental, and academic collaborators. The people in the program are committed to providing service and leadership in the promotion and advancement of the University and the profession.

Program Educational Objectives

The MMET program prepares students who after a few years after graduation:

- Demonstrate manufacturing and mechanical technical knowledge, problem solving skills, and implementation skills for careers in design, installation, operations, technical sales, or service functions in industry;
- Demonstrate increasing level of leadership and responsibility;
- Exhibit both immediate and sustainable productivity in a dynamic work environment.

Program Requirements

The freshman year is identical for degrees in aerospace engineering, architectural engineering, civil engineering, computer engineering, computer science, electrical engineering, electronic systems engineering technology, environmental engineering, industrial distribution, industrial engineering, interdisciplinary engineering, manufacturing and mechanical engineering technology, mechanical engineering, multidisciplinary engineering technology, nuclear engineering, ocean engineering, and petroleum engineering (Note: not all programs listed are offered in Qatar). The freshman year is slightly different for chemical engineering,

biomedical engineering and materials science and engineering degrees in that students take CHEM 119 or CHEM 107/CHEM 117 and CHEM 120.

Students pursuing degrees in biological and agricultural engineering should refer to the specific curriculum for this major. It is recognized that many students will change the sequence and number of courses taken in any semester. Deviations from the prescribed course sequence, however, should be made with care to ensure that prerequisites for all courses are met.

First Year		Semester
Fall		Credit Hours
CHEM 107	General Chemistry for Engineering Students ^{1,4}	3
CHEM 117	General Chemistry for Engineering Students Laboratory ^{1,4}	1
ENGL 103 or ENGL 104	Introduction to Rhetoric and Composition ¹ or Composition and Rhetoric	3
ENGR 102	Engineering Lab I - Computation ¹	2
MATH 151	Engineering Mathematics I ^{1,2}	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		3
Semester Credit Hours		16
Spring		
ENGR 216/ PHYS 216	Experimental Physics and Engineering Lab II - Mechanics ¹	2
MATH 152	Engineering Mathematics II ¹	4
PHYS 206	Newtonian Mechanics for Engineering and Science ¹	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		3
Select one of the following:		3-4
CHEM 120	Fundamentals of Chemistry II ^{1,4}	
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ^{3,5}		
Semester Credit Hours		15-16
Total Semester Credit Hours		31-32

¹ A grade of C or better is required.

² Entering students will be given a math placement exam. Test results will be used in selecting the appropriate starting course which may be at a higher or lower level.

³ Of the 21 hours shown as University Core Curriculum electives, 3 must be from creative arts (see AREN curriculum for more information), 3 from social and behavioral sciences (see IDIS curriculum for more information), 3 from language, philosophy and culture (see CVEN, EVEN and PETE curriculum for more information), 6 from American history and 6 from government/political science. The required 3 hours of international and cultural diversity and 3 hours of cultural discourse may be met by courses satisfying the creative arts, social and behavioral sciences, language, philosophy and culture, and American history requirements if they are also on the approved list of international and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international->

cultural-diversity-requirements/) courses and cultural discourse (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/>) courses.

⁴ BMEN, CHEN and MSEN require 8 hours of fundamentals of chemistry which are satisfied with CHEM 119 or CHEM 107/CHEM 117 and CHEM 120; Students with an interest in BMEN, CHEN and MSEN can take CHEM 120 second semester freshman year. CHEM 120 will substitute for CHEM 107/CHEM 117.

⁵ For BS-PETE, allocate 3 hours to core communications course (ENGL 210, COMM 203, COMM 205, or COMM 243) and/or 3 hours to UCC elective. For BS-MEEN, allocate 3 hours to core communications course (ENGL 203, ENGL 210, or COMM 205) and/or 3 hours to UCC elective.

Second Year

Fall

		Semester Credit Hours
ENGR 217/ PHYS 217	Experimental Physics and Engineering Lab III - Electricity and Magnetism ¹	2
MMET 105	Engineering Graphics ¹	2
MMET 181	Manufacturing and Assembly Processes I ¹	3
MMET 206	Nonmetallic Materials ¹	3
PHYS 207	Electricity and Magnetism for Engineering and Science ¹	3
STAT 211	Principles of Statistics I ¹	3
Semester Credit Hours		16

Spring

ISEN 302	Economic Analysis of Engineering Projects ¹	2
MMET 207	Metallic Materials ¹	3
MMET 275	Mechanics for Technologists ¹	3
MMET 281	Manufacturing and Assembly Processes II ¹	3

Select one of the following:		3
ENGL 210	Technical and Professional Writing	
COMM 203	Public Speaking	
COMM 205	Communication for Technical Professions	
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		3
Semester Credit Hours		17

Third Year

Fall

ESET 300	Industrial Electricity	4
MMET 303	Fluid Mechanics and Power ¹	4
MMET 376	Strength of Materials ¹	4
MMET 380	Computer-Aided Manufacturing ¹	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		3
Semester Credit Hours		18

Spring

MMET 320	Quality Assurance ¹	3
MMET 361	Product Design and Solid Modeling ¹	3

MMET 363	Mechanical Design Applications I ¹	3
MMET 383	Manufacturing Information Systems ¹	4
Technical elective ^{1,6}		3
High Impact Experience ⁷		0
ENTC 399	High Impact Experience	
Semester Credit Hours		16

Fourth Year

Fall

MMET 370	Thermodynamics for Technologists ¹	4
MMET 402	Inspection Methods and Procedures ¹	3
MMET 410	Manufacturing Automation and Robotics ¹	3
MMET 429	Managing People and Projects in a Technological Society ¹	3
MMET 463	Mechanical Design Applications II ¹	3
Semester Credit Hours		16

Spring

MMET 412	Production and Inventory Planning ¹	3
MMET 422	Manufacturing Technology Projects ¹	2
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ³		6
Technical elective ^{1,6}		3
Semester Credit Hours		14
Total Semester Credit Hours		97

⁶ See departmental advisor for a list of approved technical electives.

Students interested in Co-op may use ENGR 385 for up to 3 semester credit hours. ENTC 485 is not for general use as a technical elective.

⁷ All students are required to complete a high-impact experience in order to graduate. The list of possible high-impact experiences is available in the ETID advising office.

The curriculum lists the minimum number of classes required for graduation. Additional courses may be taken.

Total Program Hours 128