Multidisciplinary Engineering Technology (MXET) prepares students for careers requiring an understanding of technical problems and systems that combine principles from two or more engineering technology disciplines. The degree is designed to be flexible, giving the student a strong background in electronic and mechanical systems, which is then augmented with a focus area. Graduates of the program receive a rigorous technical education and typically take engineering and technology positions appropriate to their focus area of study. The MXET curriculum is based on a strong underpinning of engineering math and science courses followed by a core technical sequence. Throughout their curriculum, students work on multiple open-ended projects to design, implement, test, and evaluate mechanical and electronic hardware and software systems. One of the most unique aspects of the Multidisciplinary Engineering Technology program is that most technical courses provide a hands-on laboratory experience using state-of-the-art equipment and industry-standard design and analysis software. The technical curriculum is augmented with courses in written/oral communications and technical project management. A team-based industry-sponsored capstone design sequence provides a challenging opportunity to apply technical, managerial, and communications skills to solve a real-world problem.

**MXET Program Mission**

The Multidisciplinary Engineering Technology Program at Texas A&M University prepares graduates for immediate impact and long-term career success by providing a real-world experiential education coupled with personalized undergraduate experiences in mechanical, electronic, control, computer and communication systems, as well as engineering design and development.

**MXET Program Educational Objectives**

The program educational objectives of the BS MXET degree program are to produce graduates who, within two to five years after graduation, will:

- Possess and demonstrate technical knowledge of the design, manufacture, sales, and service of complex systems that span multiple engineering technology disciplines.
- Demonstrate an increasing level of leadership and responsibility.
- Exhibit productivity in a dynamic work environment through a commitment to lifelong learning.
- Exhibit a commitment to professional ethics in their professional careers.

A continuous cycle of assessment and program improvement is used to ensure that these objectives are being met. Through interactions with industry and academic partners, the Multidisciplinary Engineering Technology program offers a state-of-the-art curriculum that produces successful graduates.

**MXET Tracks**

The MXET program has a common core of courses and 29 additional credit hours that allow students to gain further experience with the focus area of choice. Currently, there are three focus areas, each represents a track of the MXET program. These tracks are mechatronics, STEM education, and electro marine engineering technology. The MXET program is offered at three distinct locations: College Station, Galveston, and McAllen.

**Mechatronics Track**

The Mechatronics track prepares students to design, develop and support products and systems that combine mechanical, electronic, robotics, automation, communication, control, and embedded computing principles.

This program is approved to be offered at the Texas A&M Higher Education Center in McAllen, Texas.

**Program Requirements**

The freshman year is identical for degrees in aerospace engineering, architectural engineering, civil engineering, computer engineering, computer science, data engineering, 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 107/117 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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>CHEM 107</td>
<td>General Chemistry for Engineering Students</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CHEM 117</td>
<td>General Chemistry for Engineering Students Laboratory</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ENGL 103 or ENGL 104</td>
<td>Introduction to Rhetoric and Composition or Composition and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ENGR 102</td>
<td>Engineering Lab I - Computation</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MATH 151</td>
<td>Engineering Mathematics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>University Core Curriculum</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>16</strong></td>
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</tbody>
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<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>ENGR 216/PHYS 216</td>
<td>Experimental Physics and Engineering Lab II - Mechanics</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MATH 152</td>
<td>Engineering Mathematics II</td>
<td>4</td>
</tr>
</tbody>
</table>

**Semester Credit Hours** 16
### Second Year

#### Fall
- **ENGR 217** / **PHYS 217**  
  *Experimental Physics and Engineering Lab III - Electricity and Magnetism*  
  2 Semester Credit Hours

- **ESET 210**  
  *Circuit Analysis*  
  4 Semester Credit Hours

- **ESET 219**  
  *Digital Electronics*  
  4 Semester Credit Hours

- **MMET 207**  
  *Metallic Materials*  
  3 Semester Credit Hours

- **PHYS 207**  
  *Electricity and Magnetism for Engineering and Science*  
  3 Semester Credit Hours

#### Spring
- **ESET 269**  
  *Embedded Systems Development in C*  
  3 Semester Credit Hours

- **ESET 350**  
  *Analog Electronics*  
  4 Semester Credit Hours

### Third Year

#### Fall
- **ESET 349**  
  *Microcontroller Architecture*  
  4 Semester Credit Hours

- **MMET 303**  
  *Fluid Mechanics and Power*  
  4 Semester Credit Hours

- **MMET 361**  
  *Product Design and Solid Modeling*  
  3 Semester Credit Hours

- **MMET 376**  
  *Strength of Materials*  
  4 Semester Credit Hours

- **MXET 375**  
  *Applied Dynamic Systems*  
  3 Semester Credit Hours

#### Spring
- **ENTC 399**  
  *High Impact Experience*  
  0 Semester Credit Hours

- **ESET 359**  
  *Electronic Instrumentation*  
  4 Semester Credit Hours

- **ESET 369**  
  *Embedded Systems Software*  
  4 Semester Credit Hours

- **MMET 363**  
  *Mechanical Design Applications I*  
  3 Semester Credit Hours

- **MMET 370**  
  *Thermodynamics for Technologists*  
  4 Semester Credit Hours

- **MXET 300**  
  *Mechatronics I – Mobile Robotic Systems*  
  3,7 Semester Credit Hours

### Fourth Year

#### Fall
- **ESET 419** or **MMET 429**  
  *Engineering Technology Capstone I*  
  3 Semester Credit Hours

- **ESET 462**  
  *Control Systems*  
  4 Semester Credit Hours

- **MXET 400**  
  *Mechatronics II – Industrial Robotic Systems*  
  3 Semester Credit Hours

- **Technical elective**  
  1,6 Semester Credit Hours

- **University Core Curriculum** (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/)  
  3 Semester Credit Hours

#### Spring
- **ESET 420** or **MMET 422**  
  *Engineering Technology Capstone II*  
  2 Semester Credit Hours

- **Select one of the following:**  
  3 Semester Credit Hours

  - COMM 203  
    *Public Speaking*  
    3 Semester Credit Hours

  - COMM 205  
    *Communication for Technical Professions*  
    3 Semester Credit Hours

  - ENGL 210  
    *Technical and Professional Writing*  
    3 Semester Credit Hours

  - **Technical elective**  
    1,6 Semester Credit Hours

  - **University Core Curriculum** (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/)  
    3 Semester Credit Hours

#### Total Semester Credit Hours
- 96 Semester Credit Hours

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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 DAEN and IDIS curriculum for more information), 3 from language, philosophy and culture (see CVEN, EVEN and PETE curriculum for more information), 3 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 (ENG 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 (ENG 210, ENGL 210, or COMM 205) and/or 3 hours to UCC elective.
6. See a departmental advisor for a list of approved electives.
Meets the 29 hour Mechatronics focus area requirements.

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.

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

**Total Program Hours 127**