**MULTIDISCIPLINARY ENGINEERING TECHNOLOGY - BS, STEM EDUCATION TRACK**

**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

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 107</td>
<td>General Chemistry for Engineering Students</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 117</td>
<td>General Chemistry for Engineering Students Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 103</td>
<td>Introduction to Rhetoric and Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 102</td>
<td>Engineering Lab I - Computation</td>
<td>2</td>
</tr>
<tr>
<td>MATH 151</td>
<td>Engineering Mathematics I</td>
<td>4</td>
</tr>
<tr>
<td>University Core Curriculum (<a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a>)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Semester Credit Hours**: 16

#### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 216/</td>
<td>Experimental Physics and Engineering Lab</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 216</td>
<td>II - Mechanics</td>
<td>2</td>
</tr>
<tr>
<td>MATH 152</td>
<td>Engineering Mathematics II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 206</td>
<td>Newtonian Mechanics for Engineering and Science</td>
<td>3</td>
</tr>
<tr>
<td>University Core Curriculum (<a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a>)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Select one of the following:**

- CHEM 120  Fundamentals of Chemistry II

**Semester Credit Hours**: 3-4

**Second Year

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 217/</td>
<td>Experimental Physics and Engineering Lab</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 217</td>
<td>III - Electricity and Magnetism</td>
<td>2</td>
</tr>
<tr>
<td>ESET 210</td>
<td>Circuit Analysis</td>
<td>4</td>
</tr>
<tr>
<td>ESET 219</td>
<td>Digital Electronics</td>
<td>4</td>
</tr>
<tr>
<td>MMET 207</td>
<td>Metallic Materials</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 207</td>
<td>Electricity and Magnetism for Engineering and Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Semester Credit Hours**: 16

#### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESET 269</td>
<td>Embedded Systems Development in C</td>
<td>3</td>
</tr>
<tr>
<td>ESET 319</td>
<td>Engineering Leadership</td>
<td>3</td>
</tr>
<tr>
<td>ESET 350</td>
<td>Analog Electronics</td>
<td>4</td>
</tr>
<tr>
<td>INST 210</td>
<td>Understanding Special Populations</td>
<td>3</td>
</tr>
<tr>
<td>MMET 275</td>
<td>Mechanics for Technologists</td>
<td>3</td>
</tr>
</tbody>
</table>

**Semester Credit Hours**: 16

### Additional Notes

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, 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 cultural, 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 freshman chemistry, which may be satisfied by CHEM 119 or CHEM 107/CHEM 117 and CHEM 120; Credit by Examination (CBE) for CHEM 119 plus CHEM 120; or 8 hours of CBE for CHEM 119 and CHEM 120. BMEN, CHEN and MSEN should 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 203, ENGL 210, or COMM 205) and/or 3 hours to UCC elective.

### University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) Notes

- 1, 4: BMEN, CHEN and MSEN require 8 hours of freshman chemistry, which may be satisfied by CHEM 119 or CHEM 107/CHEM 117 and CHEM 120; Credit by Examination (CBE) for CHEM 119 plus CHEM 120; or 8 hours of CBE for CHEM 119 and CHEM 120. BMEN, CHEN and MSEN should take CHEM 120 second semester freshman year. CHEM 120 will substitute for CHEM 107/CHEM 117.
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**Semester Credit Hours**: 16

**Total Semester Credit Hours**: 31-32
Multidisciplinary Engineering Technology - BS, STEM Education Track

Summer
Math Elective\(^1,7\) 3

Semester Credit Hours 3

Third Year
Fall
MMET 370 Thermodynamics for Technologists\(^1\) 4
MXET 375 Applied Dynamic Systems\(^1\) 3
TEFB 322 Teaching and Schooling in Modern Society\(^1,6\) 3
TEFB 324 Teaching Skills II\(^1,6\) 3
Technical elective\(^1,6\) 4

Semester Credit Hours 17

Spring
ENTC 399 High Impact Experience\(^9\) 0
ESET 359 Electronic Instrumentation\(^1\) 4
ESET 419 Engineering Technology Capstone I\(^1\) 3
or MMET 429 or Managing People and Projects in a
Technological Society
MMET 363 Mechanical Design Applications I 3
TEFB 406 Science in the Middle and Secondary
School\(^1,6\) 3
Technical elective\(^1,6,8\) 2

Semester Credit Hours 15

Summer
University Core Curriculum (http://catalog.tamu.edu/
undergraduate/general-information/university-core-
curriculum/)\(^3\) 6

Semester Credit Hours 6

Fourth Year
Fall
EDCI 358 Instructional Methods in Engineering and
Technology Education\(^1,6\) 3
ESET 420 Engineering Technology Capstone II\(^1\) 2
or MMET 422 or Manufacturing Technology Projects
RDNG 465 Reading in the Middle and Secondary
Grades\(^1,6\) 3
TEFB 407 Mathematics in the Middle and Senior
School\(^1,6\) 3
Select one of the following: 3
COMM 203 Public Speaking
COMM 205 Communication for Technical Professions
ENGL 210 Technical and Business Writing
University Core Curriculum (http://catalog.tamu.edu/
undergraduate/general-information/university-core-
curriculum/)\(^3\) 3

Semester Credit Hours 17

Spring
MEFB 497 Supervised Clinical Teaching\(^1,6\) 6

Semester Credit Hours 6

Total Semester Credit Hours 96

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1. Meets the 29 hour STEM Education focus area requirements.
2. See a departmental advisor for a list of approved electives.
3. The 6 hours of technical electives will be satisfied by taking ESET 329 and ESET 333. All other options must be approved in advance by the MXET program coordinator.
4. 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.

Total Program Hours 127