ELECTRONIC SYSTEMS ENGINEERING TECHNOLOGY - BS

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  
CHEM 107  General Chemistry for Engineering Students 3
CHEM 117  General Chemistry for Engineering Students Laboratory 1
ENGL 103  or ENGL 104  Introduction to Rhetoric and Composition 3
ENGR 102  Engineering Lab I - Computation 2
MATH 151  Engineering Mathematics I 4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) 3

Semester Credit Hours 16

Spring  
ENGR 216/PHYS 216  Experimental Physics and Engineering Lab II - Mechanics 4
MATH 152  Engineering Mathematics II 4
PHYS 206  Newtonian Mechanics for Engineering and Science 3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) 3

Select one of the following: 3-4
CHEM 120  Fundamentals of Chemistry II 1

Second Year

Fall  
ENGR 217  Experimental Physics and Engineering Lab III - Electricity and Magnetism 1
ESET 210  Circuit Analysis 4
ESET 219  Digital Electronics 4
ESET 269 Embedded Systems Development in C 3
PHYS 207  Electricity and Magnetism for Engineering and Science 3

Semester Credit Hours 16

Spring  
ESET 311  Power Systems and Circuit Applications 3
ESET 315  Local-and-Metropolitan-Area Networks 4
ESET 329  Six Sigma and Applied Statistics 3
ESET 349  Microcontroller Architecture 4
Mathematics (http://catalog.tamu.edu/undergraduate/course-descriptions/math/) 3

Semester Credit Hours 17

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.
### Third Year

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESET 319</td>
<td>Engineering Leadership</td>
<td>3</td>
</tr>
<tr>
<td>ESET 333</td>
<td>Product Development</td>
<td>3</td>
</tr>
<tr>
<td>ESET 350</td>
<td>Analog Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ESET 355</td>
<td>Electromagnetics and High Frequency Systems</td>
<td>4</td>
</tr>
<tr>
<td>ESET 369</td>
<td>Embedded Systems Software</td>
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</table>

#### Semester Credit Hours

18

#### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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<tbody>
<tr>
<td>ENTC 399</td>
<td>High Impact Experience</td>
<td>0</td>
</tr>
<tr>
<td>ESET 352</td>
<td>Electronics Testing I</td>
<td>4</td>
</tr>
<tr>
<td>ESET 359</td>
<td>Electronic Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>ESET 415</td>
<td>Advanced Network Systems and Security</td>
<td>3</td>
</tr>
<tr>
<td>ESET 455</td>
<td>Wireless Transmission Systems</td>
<td>4</td>
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</table>

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

#### Semester Credit Hours

18

### Fourth Year

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESET 419</td>
<td>Engineering Technology Capstone I</td>
<td>3</td>
</tr>
<tr>
<td>ESET 462</td>
<td>Control Systems</td>
<td>4</td>
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</tbody>
</table>

Technical elective 1,6

Select one of the following:

- ENGL 210 Technical and Professional Writing
- COMM 203 Public Speaking
- COMM 205 Communication for Technical Professions

#### Semester Credit Hours

13

#### Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESET 420</td>
<td>Engineering Technology Capstone II</td>
<td>2</td>
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</tbody>
</table>

Technical elective 1,6

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

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

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

#### Semester Credit Hours

14

Total Semester Credit Hours 96

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

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

**Total Program Hours 127**