ENVIROMENTAL ENGINEERING - BS

The BS in Environmental Engineering degree coursework is specifically designed to educate students to solve environmental challenges facing public and environmental health, such as water treatment, waste management and climate change. The degree offers a broad range of coursework in the natural sciences and engineering, providing a multidisciplinary approach that merges with engineering principles to solve emerging and existing environmental issues. The program is appropriate for those who wish to protect human health and welfare while minimizing the adverse effects of human activity on the environment.

This program is approved to be offered at the Texas A&M University at Galveston campus.

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, petroleum engineering (Note: not all programs listed are offered in Galveston campus). The freshman year is identical for degrees in aerospace engineering, aerospace 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, petroleum engineering (Note: not all programs listed are offered in Galveston campus).

Students pursuing degrees in biological and agricultural 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, petroleum engineering (Note: not all programs listed are offered in Galveston campus). The freshman year is identical for degrees in aerospace engineering, aerospace 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, petroleum engineering (Note: not all programs listed are offered in Galveston campus).

Students pursuing degrees in biological and agricultural 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, petroleum engineering (Note: not all programs listed are offered in Galveston campus). The freshman year is identical for degrees in aerospace engineering, aerospace 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, petroleum engineering (Note: not all programs listed are offered in Galveston campus).

First Year

Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>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 or ENGL 104</td>
<td>Introduction to Rhetoric and Composition or Composition and Rhetoric</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>
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</table>

Spring

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 216/PHYS 216</td>
<td>Experimental Physics and Engineering Lab 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>
</tbody>
</table>

Semester Credit Hours 16

Second Year

Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 113 or ECCB 205</td>
<td>Essentials in Biology or Fundamentals of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>CVEN 221</td>
<td>Engineering Mechanics: Statics</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 217/PHYS 217</td>
<td>Experimental Physics and Engineering Lab III - Electricity and Magnetism</td>
<td>2</td>
</tr>
<tr>
<td>EVEN 201</td>
<td>Introduction to the Environmental Engineering Profession</td>
<td>1</td>
</tr>
<tr>
<td>MATH 251</td>
<td>Engineering Mathematics III</td>
<td>3</td>
</tr>
<tr>
<td>STAT 211</td>
<td>Principles of Statistics I</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 18

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/) and cultural discourse courses (http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/).
4. BMEN, CHEN and MSEN require 8 hours of fundamentals of chemistry which are satisfied with CHEM 119 or CHEM 107/117 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 107/117.
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
- **BAEN 320** Engineering Thermodynamics 3
- **CVEN 322** Civil Engineering Systems 3
- **EVEN 320** Principles of Environmental Engineering Chemistry 3
- **EVEN 339/ CVEN 339** Water Resources Engineering 3
- **University Core Curriculum** (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/)
  3

#### High Impact Experience
- **EVEN 399** Mid-Curriculum Professional Development

#### Semester Credit Hours
17

### Spring

#### Communication for Technical Professions or Technical and Professional Writing
- **COMM 205** 3
- **ENGL 210** 3

#### Engineered Environmental Systems
- **EVEN 402/ CVEN 402** 3

#### Environmental Unit Operations Laboratory
- **EVEN 404** 1

#### Environmental Protection and Public Health
- **EVEN 406** 3

#### Natural Environmental Systems
- **EVEN 413/ CVEN 413** 3

#### Engineering science
- **Select one of the following:**
  - **CHEN 204** Elementary Chemical Engineering
  - **CVEN 305** Mechanics of Materials
  - **ECEN 215** Principles of Electrical Engineering
  - **MEEN 222/ MSEN 222** Materials Science

#### Semester Credit Hours
15

### Fourth Year

#### Fall
- **BAEN 477** Air Pollution Engineering 3
- **CVEN 423** Geometrics for Civil Engineering 3
- **EVEN 400** Design Problems in Environmental Engineering I 2

#### Environmental engineering
- **Select two of the following:**
  - **BAEN 465** Design of Biological Waste Treatment Systems
  - **BAEN 469** Water Quality Engineering
  - **EVEN 458/ CVEN 458** Hydraulic Engineering of Water Distribution Systems
  - **EVEN 462/ CVEN 462** Engineering Hydrogeology
  - **EVEN 463/ CVEN 463** Engineering Hydrology
  - **EVEN 466** Sustainability and Life Cycle Analysis

#### University Core Curriculum
  3

#### Semester Credit Hours
17

#### Spring
- **EVEN 401** Design Problems in Environmental Engineering II 2
- **PHIL 482/ ENGR 482** Ethics and Engineering 3

#### Environmental engineering
- **Select one of the following:**
  - **BAEN 465** Design of Biological Waste Treatment Systems
  - **BAEN 469** Water Quality Engineering
  - **EVEN 458/ CVEN 458** Hydraulic Engineering of Water Distribution Systems
  - **EVEN 462/ CVEN 462** Engineering Hydrogeology
  - **EVEN 463/ CVEN 463** Engineering Hydrology
  - **EVEN 466** Sustainability and Life Cycle Analysis

#### University Core Curriculum
  3

#### Technical elective
- **Select one of the following:**
  - **CHEN 204** Elementary Chemical Engineering
  - **CVEN 305** Mechanics of Materials
  - **ECEN 215** Principles of Electrical Engineering
  - **MEEN 222/ MSEN 222** Materials Science

#### Semester Credit Hours
14

#### Total Semester Credit Hours
97

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6. 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 EVEN advising office.

7. All students must take at least two courses in their major that are designated as writing intensive (W) or communications intensive (C). EVEN 201 and EVEN 400 taken at Texas A&M satisfy this requirement.
Other EVEN courses may be approved as W/C courses at a later date. A grade of C or better is required in these courses.

8 Select from ATMO 363; BAEN 464, BAEN 468; BESC 357, BESC 367, BESC 403; CVEN 306, CVEN 307, CVEN 315, CVEN 454, CVEN 455, CVEN 465; ECCB 420; GEOG 467, GEOS 410; OCEN 362; OCNG 350; SCSC 405; SENG 310.

A grade of C or better is required in all science, mathematics and engineering courses taken to satisfy degree requirements.

Total Program Hours 128