INDUSTRIAL ENGINEERING
- 5-YEAR BACHELOR OF SCIENCE AND MASTER OF SCIENCE IN FINANCE

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 Qatar). The freshman year is identical for degrees in aerospace engineering, computer science, electrical engineering, electronic systems 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 Qatar).

First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>CHEM 107 General Chemistry for Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Students 1,4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 117 General Chemistry for Engineering</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Students Laboratory 1,4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGL 103 or ENGL 104 Introduction to Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or Composition and Rhetoric</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGR 102 Engineering Lab I - Computation</td>
<td>2</td>
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<tr>
<td></td>
<td>MATH 151 Engineering Mathematics I 1,2,4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>University Core Curriculum</td>
<td>3</td>
</tr>
</tbody>
</table>

| Semester Credit Hours | 16 |

| Spring | ENGR 216/217 Experimental Physics and Engineering Lab III - Electricity and Magnetism | 2 |
|        | PHYS 216 II - Mechanics 1                    | 2 |
|        | MATH 152 Engineering Mathematics II 1         | 4 |
|        | PHYS 206 Newtonian Mechanics for Engineering and Science 1 | 3 |
|        | University Core Curriculum                    | 3 |

| 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 107/117 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.

Second Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>ENGR 217/218 Experimental Physics and Engineering Lab III - Electricity and Magnetism</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>PHYS 217 II - Mechanics 1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>MATH 251 Engineering Mathematics III</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MMET 181 Manufacturing and Assembly Processes</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>PHYS 207 Electricity and Magnetism for Engineering and Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>STAT 211 Principles of Statistics I</td>
<td>3</td>
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<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td>CSCE 110 Programming I</td>
<td></td>
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<tr>
<td></td>
<td>CSCE 111 Introduction to Computer Science Concepts and Programming</td>
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<tr>
<td></td>
<td>CSCE 121 Introduction to Program Design and Concepts</td>
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<tr>
<td></td>
<td>CSCE 206 Structured Programming in C</td>
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</tbody>
</table>

| Semester Credit Hours | 18 |

| Spring | ACCT 640 Accounting Concepts and Procedures 5 | 3 |
|        | ECON 202 Principles of Economics              | 3 |

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

Semester Credit Hours: 15-16

Total Semester Credit Hours: 31-32
<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ISEN 210</td>
<td>Fundamentals of Industrial Engineering Design</td>
<td>4</td>
</tr>
<tr>
<td>ISEN 230</td>
<td>Informatics for Industrial Engineers</td>
<td>3</td>
</tr>
<tr>
<td>MATH 304</td>
<td>Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 221</td>
<td>Statics and Particle Dynamics</td>
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<tr>
<td></td>
<td><strong>Semester Credit Hours</strong></td>
<td><strong>19</strong></td>
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<tr>
<td><strong>Summer</strong></td>
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<tr>
<td>FINC 601</td>
<td>Financial Analysis Practicum</td>
<td>3</td>
</tr>
<tr>
<td>FINC 602</td>
<td>Corporate Finance</td>
<td>3</td>
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<td><strong>Semester Credit Hours</strong></td>
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<td><strong>Third Year</strong></td>
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<tr>
<td>Fall</td>
<td></td>
<td></td>
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<tr>
<td>ACCT 327</td>
<td>Financial Reporting I</td>
<td>7</td>
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<tr>
<td>FINC 601</td>
<td>Financial Analysis Practicum</td>
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<tr>
<td>ISEN 310</td>
<td>Uncertainty Modeling for Industrial Engineering</td>
<td>7</td>
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<tr>
<td>ISEN 320</td>
<td>Operations Research I</td>
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<tr>
<td>ISEN 330</td>
<td>Human Systems Interaction</td>
<td>3</td>
</tr>
<tr>
<td>MATH 308</td>
<td>Differential Equations</td>
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<td><strong>Semester Credit Hours</strong></td>
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<td>Spring</td>
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<tr>
<td>ISEN 340</td>
<td>Operations Research II</td>
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<td>ISEN 350</td>
<td>Quality Engineering</td>
<td>3</td>
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<tr>
<td>ISEN 355</td>
<td>System Simulation</td>
<td>3</td>
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<tr>
<td>ISEN 370</td>
<td>Production Systems Engineering</td>
<td>3</td>
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<td>Select one of the following:</td>
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<tr>
<td>ENGL 210</td>
<td>Technical and Professional Writing</td>
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<tr>
<td>ENGL 203</td>
<td>Writing about Literature</td>
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<tr>
<td>COMM 203</td>
<td>Public Speaking</td>
<td></td>
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<tr>
<td>COMM 205</td>
<td>Communication for Technical Professions</td>
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<td></td>
<td><strong>Semester Credit Hours</strong></td>
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<td><strong>Fourth Year</strong></td>
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<td>Fall</td>
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</tr>
<tr>
<td>FINC 601</td>
<td>Financial Analysis Practicum</td>
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<tr>
<td></td>
<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>
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<td></td>
<td>Technical electives</td>
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<td></td>
<td><strong>Semester Credit Hours</strong></td>
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<tr>
<td>Spring</td>
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</tr>
<tr>
<td>ACCT 328</td>
<td>Financial Reporting II</td>
<td>7</td>
</tr>
<tr>
<td>ISEN 460</td>
<td>Capstone Senior Design</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 222 / MSEN 222</td>
<td>Materials Science</td>
<td>3</td>
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<tr>
<td></td>
<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>
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<tr>
<td></td>
<td>High Impact Experience</td>
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<td>ISEN 399</td>
<td>Professional Development</td>
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<td><strong>Semester Credit Hours</strong></td>
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<td><strong>Fifth Year</strong></td>
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<tr>
<td>Fall</td>
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<td></td>
</tr>
<tr>
<td>FINC 601</td>
<td>Financial Analysis Practicum</td>
<td>1</td>
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<tr>
<td></td>
<td>FINC 603 Investments</td>
<td>3</td>
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<tr>
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<td>Select one of the following:</td>
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</tr>
<tr>
<td>ECEN 215</td>
<td>Principles of Electrical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 315</td>
<td>Principles of Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>BAEN 320</td>
<td>Engineering Thermodynamics</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 680</td>
<td>Business and Corporate Strategy</td>
<td>3</td>
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<tr>
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<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>
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</tr>
<tr>
<td></td>
<td><strong>Total Semester Credit Hours</strong></td>
<td><strong>124</strong></td>
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</tbody>
</table>

6. MSF prerequisite course that counts towards ISEN degree.
7. Course that will double count.
8. A total of 9 hours of technical electives is required. The choice of courses to be taken must be made in consultation with the student’s advisor and/or the Industrial Engineering Advising Office.
9. 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 INEN advising office.
10. The MS Finance degree requires students to take 6 hours of electives in support of their career goals.

The Bachelor of Science degree in Industrial Engineering requires a grade of C or better for required industrial engineering (ISEN) courses.

The program includes a total of 164 hours which up to 9 hours may be applied toward both the Bachelor of Science in Industrial Engineering and the Master of Science in Finance.

**Total Program Hours 164**