MECHANICAL ENGINEERING - 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
<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>Fall</td>
<td>CHEM 107</td>
<td>General Chemistry for Engineering Students</td>
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<td>CHEM 117</td>
<td>General Chemistry for Engineering Students Laboratory</td>
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<tr>
<td></td>
<td>ENGL 103</td>
<td>Introduction to Rhetoric and Composition</td>
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<td>ENGR 102</td>
<td>Engineering Lab I - Computation</td>
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<td></td>
<td>MATH 151</td>
<td>Engineering Mathematics I</td>
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<td>ENGR 216/</td>
<td>Experimental Physics and Engineering Lab</td>
<td>2</td>
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<tr>
<td></td>
<td>PHYS 216</td>
<td>II - Mechanics</td>
<td>3</td>
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<td></td>
<td>MATH 152</td>
<td>Engineering Mathematics II</td>
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<tr>
<td></td>
<td>PHYS 206</td>
<td>Newtonian Mechanics for Engineering and Science</td>
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<td>CHEM 120</td>
<td>Fundamentals of Chemistry II</td>
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Second Year
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<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>Fall</td>
<td>ENGR 217/</td>
<td>Experimental Physics and Engineering Lab</td>
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<tr>
<td></td>
<td>PHYS 217</td>
<td>III - Electricity and Magnetism</td>
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<td></td>
<td>MATH 251</td>
<td>Engineering Mathematics III</td>
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<td>MEEN 210</td>
<td>Geometric Modeling for Mechanical Design</td>
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<td>MEEN 225</td>
<td>Engineering Mechanics</td>
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<td></td>
<td>PHYS 207</td>
<td>Electricity and Magnetism for Engineering and Science</td>
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<td>STAT 211</td>
<td>Principles of Statistics</td>
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<td>Spring</td>
<td>ECEN 215</td>
<td>Principles of Electrical Engineering</td>
<td>3</td>
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<td>ISEN 302</td>
<td>Economic Analysis of Engineering Projects</td>
<td>2</td>
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<td></td>
<td>MATH 308</td>
<td>Differential Equations</td>
<td>3</td>
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<td>MEEN 368</td>
<td>Solid Mechanics in Mechanical Design</td>
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<td>MEEN 315</td>
<td>Principles of Thermodynamics</td>
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<td>Credits</td>
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<td>MEEN 399</td>
<td>High Impact Experience for Mechanical Engineers</td>
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**Third Year**

**Fall**

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<tr>
<th>Course</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MEEN 260</td>
<td>Mechanical Measurements (^1)</td>
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<tr>
<td>MEEN 344</td>
<td>Fluid Mechanics (^1)</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 357</td>
<td>Engineering Analysis for Mechanical Engineers (^1)</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 381</td>
<td>Seminar</td>
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<tr>
<td>MEEN 363</td>
<td>Dynamics and Vibrations (^1)</td>
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University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) \(^3\) 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MEEN 345</td>
<td>Fluid Mechanics Laboratory (^1)</td>
<td>1</td>
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<tr>
<td>MEEN 360</td>
<td>Materials and Manufacturing Selection in Design (^1)</td>
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<tr>
<td>MEEN 361</td>
<td>Materials and Manufacturing in Design Laboratory (^1)</td>
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<td>MEEN 364</td>
<td>Dynamic Systems and Controls (^1)</td>
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<td>MEEN 441</td>
<td>Design of Mechanical Components and Systems (^1)</td>
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<td>MEEN 461</td>
<td>Heat Transfer (^1)</td>
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University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) \(^3\) 3

**Spring**

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MEEN 401</td>
<td>Introduction to Mechanical Engineering Design (^1)</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 404</td>
<td>Engineering Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 464</td>
<td>Heat Transfer Laboratory (^1)</td>
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</table>

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

Technical elective \(^7\) 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEEN 402</td>
<td>Intermediate Design</td>
<td>3</td>
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</table>

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

General Elective \(^8\) 3

Technical elective \(^7\) 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
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**Fourth Year**

**Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MEEN 401</td>
<td>Introduction to Mechanical Engineering Design (^1)</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 404</td>
<td>Engineering Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>MEEN 464</td>
<td>Heat Transfer Laboratory (^1)</td>
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</table>

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

Technical elective \(^7\) 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEEN 402</td>
<td>Intermediate Design</td>
<td>3</td>
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University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) \(^3\) 3

General Elective \(^8\) 3

Technical elective \(^7\) 6

<table>
<thead>
<tr>
<th>Course</th>
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<table>
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<tbody>
<tr>
<td></td>
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</table>

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 MEEN advising office.

Technical electives: See the Mechanical Engineering Academic Advisor’s Office for lists of approved courses. Students must take at least three MEEN technical electives of which at least one course is from the Thermofluids Systems area and at least one course is from Mechanical & Manufacturing Systems area.

Select from any 300-499 course.

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

**Total Program Hours 128**