BACHELOR OF SCIENCE (B.S.) MAJOR IN MANUFACTURING ENGINEERING (MECHANICAL SYSTEMS CONCENTRATION)

Minimum required: 126 semester credit hours

General Requirements
1. The general education core curriculum courses are listed in the degree plan below along with the statewide component code number. See the General Education Core Curriculum (http://mycatalog.txstate.edu/undergraduate/general-education-core-curriculum/) section of this catalog for the Texas State requirements and options in the core curriculum, including Honors courses.
2. Students must complete a minimum of 36 advanced hours (3000 or 4000 level courses).
3. Nine semester credit hours must be writing intensive (WI).
4. If two years of the same language are taken in high school, then no additional language hours will be required for the degree. In the absence of such high school language, two semesters of the same modern language must be taken at the college level.
5. The Manufacturing Engineering degree programs include all the courses required for an Applied Mathematics minor.

Course Requirements

<table>
<thead>
<tr>
<th>First Hours Semester</th>
<th>Second Hours Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td></td>
</tr>
<tr>
<td>CHEM 1335 or 1341</td>
<td>CHEM 1335 or 1141</td>
</tr>
<tr>
<td></td>
<td>(students should take either CHEM 1341 &amp; 1141 or CHEM 1335 &amp; 1135)</td>
</tr>
<tr>
<td>CHEM 1135 or 1141</td>
<td>CHEM 1135 or 1141</td>
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<td>(students should take either CHEM 1341 &amp; 1141 or CHEM 1335 &amp; 1135)</td>
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<table>
<thead>
<tr>
<th>First Hours Semester</th>
<th>Second Hours Semester</th>
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<tbody>
<tr>
<td>Freshman</td>
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</tr>
<tr>
<td>MATH 2471</td>
<td>4 PHYS 1430</td>
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<tr>
<td>(Mathematics Component Code 020)</td>
<td>(Life and Physical Sciences Component Code 030)</td>
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<tr>
<td>ENGR 1304</td>
<td>3 ENG 1320</td>
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<tr>
<td>(Communications Component Code 010)</td>
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<tr>
<td>US 1100</td>
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<tr>
<td>ENG 1310</td>
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<tr>
<th>First Hours Semester</th>
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<th>Summer Hours</th>
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<tr>
<td>Sophomore</td>
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<tr>
<td>MFGE 2332</td>
<td>3 CS 1342</td>
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<tr>
<td>MATH 3323</td>
<td>3 IE 3330</td>
<td>3 PHIL 1305</td>
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<tr>
<td>(Social and Behavioral Sciences Component Code 080)</td>
<td>or 1320 (Language, Philosophy, and Culture Component Code 040)</td>
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<tr>
<td>IE 3320</td>
<td>3 ENGR 2301</td>
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<td>PHYS 2425</td>
<td>4 ECO 2301</td>
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<tr>
<td>(Life and Physical Sciences Component Code 040)</td>
<td>(Social and Behavioral Sciences Component Code 080)</td>
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<td>MFGE 2132</td>
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<tr>
<th>First Hours Semester</th>
<th>Second Hours Semester</th>
<th>Junior</th>
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<tbody>
<tr>
<td>MFGE 3316</td>
<td>3 MFGE 4365</td>
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</tr>
<tr>
<td>ENGR 3311</td>
<td>3 MFGE 4396</td>
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<td>ENGR 3315</td>
<td>3 PHYS 3315</td>
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<tr>
<td>MATH 2472</td>
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<tr>
<td>(Component Area 090/092)</td>
<td>(Component Area 090/092)</td>
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Bachelor of Science (B.S.) Major in Manufacturing Engineering (Mechanical Systems Concentration)

<table>
<thead>
<tr>
<th>First Hours Semester</th>
<th>Second Hours Semester</th>
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<tbody>
<tr>
<td>MFGE 4357</td>
<td>3 MFGE 4355</td>
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<tr>
<td>MFGE 4390</td>
<td>3 MFGE 4376</td>
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<tr>
<td>MFGE 4395</td>
<td>3 MFGE 4391</td>
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<tr>
<td>IE 4355</td>
<td>3 MFGE Electives¹</td>
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<tr>
<td>MFGE Electives¹</td>
<td>3 POSI 2320</td>
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<td>(Government/Political Science Component Code 070)</td>
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<tr>
<td>MFGE 4176</td>
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**Total Hours: 126**

¹ A minimum of six (6) hours of advanced Manufacturing Engineering electives chosen from the list below are required.

### Advanced Manufacturing Engineering Electives

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>EE 4392</td>
<td>Microelectronics Manufacturing I</td>
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<tr>
<td>EE 4394</td>
<td>Microelectronics Manufacturing II</td>
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<tr>
<td>ENGR 3190</td>
<td>Cooperative Education</td>
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<td>ENGR 4395</td>
<td>Independent Studies in Engineering</td>
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<td>MFGE 4318</td>
<td>Additive Manufacturing</td>
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<tr>
<td>MFGE 4367</td>
<td>Polymer Properties and Processing</td>
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</tr>
<tr>
<td>MFGE 4377</td>
<td>Introduction to Polymer Nanocomposites</td>
<td>3</td>
</tr>
<tr>
<td>MFGE 4378</td>
<td>Introduction to Industrial Robotics</td>
<td>3</td>
</tr>
<tr>
<td>TECH 4330</td>
<td>Foundry &amp; Heat Treatment</td>
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