

## 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. Students entering Texas State with fewer than 16 credit hours completed after high school graduation will be required to take US 1100. All others will be exempt from taking this course.
4. Nine semester credit hours must be writing intensive (WI).
5. 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.
6. The Manufacturing Engineering degree programs include all the courses required for an Applied Mathematics minor.

ENG 1310 (Communication Component Code 010 [TCCN ENGL 1301])	3	Communication Component Code 010	3
Life and Physical Sciences Component Code 030	4		
Choose 4 hours from the following:			
CHEM 1335			
& CHEM 1135 (TCCN CHEM 1309 & CHEM 1109)			
CHEM 13			
& CHEM (TCCN CHEM 1311 & CHEM 1111)			

### Course Requirements

#### Freshman

First Hours Semester	Second Hours Semester	
MATH 2471 (Mathematics Component Code 020 [TCCN MATH 2413])	4 ENGR 2300	3
US 1100	1 PHYS 2325 & PHYS 212 (Life and Physical Sciences Component Code 030 [TCCN PHYS 2325 & PHYS 2125])	4
ENGR 1304 (TCCN ENGR 1304)	3 MATH 2472 (Component Area Option Code 090/092 [TCCN MATH 2414])	4

First Hours Semester	Second Hours Semester	Sophomore Summer Hours	
IE 3320	3 ENGR 2301 (TCCN ENGR 2301)	3 MATH 3377	3
MATH 3323	3 CS 1342	3 MGT 3301 <sup>1</sup>	3
MFGE 2332	3 ECO 2301 (Social and Behavioral Sciences Component Code 080 [TCCN ECON 1301])	3	

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PHYS 2326 & PHYS 212 (Life and Physical Sciences Component Code 030 [TCCN PHYS 2326 & PHYS 2126])	4 Creative Arts Component Code 050 [HUMA 1315]	3
MFGE 2132	1 American History Component Code 060	3
American History Component Code 060	3	
<b>17</b>		<b>15</b>

**6 Junior**

First Hours Semester	Second Hours Semester	
ENGR 3311	3 ENGR 3315	3
ENGR 3373	3 IE 3330	3
PHIL 1305 or 1320 (Language, Philosophy, and Culture Component Code 040 [TCCN PHIL 1301 or 2306])	3 MFGE 4365	3
MFGE 3316	3 MFGE 4378	3
MFGE 3116	1 POSI 2310 (Government/ Political Science Component Code 070 [TCCN GOVT 2306])	3
Math/ Science Elective <sup>2</sup>	3-4	
<b>16</b>		<b>15</b>

**Senior**

First Hours Semester	Second Hours Semester	
MFGE 4390	3 MFGE 4391	3
MFGE 4395	3 MFGE 4376	3
IE 4355	3 MFGE 4396	3

POSI 2320 (Government Political Science Component Code 070 [TCCN GOVT 2305])	3 MFGE 4176	1
MFGE Electives <sup>2</sup>	3 MFGE Electives <sup>2</sup>	3
<b>15</b>		<b>13</b>

**Total Hours: 126**

<sup>1</sup> Credit earned successfully through testing of previously earned course credit for MGT 3303 may be substituted for MGT 3301.

<sup>2</sup> A minimum of six (6) hours of advanced Manufacturing Engineering electives chosen from the list below are required.

### Advanced Manufacturing Engineering Electives

Code	Title	Hours
IE 3360	Methods Engineering and Ergonomics	3
EE 4331	Introduction to Machine Learning for Engineering Applications	3
EE 4392	Microelectronics Manufacturing I	3
EE 4394	Microelectronics Manufacturing II	3
ENGR 4395	Independent Studies in Engineering	3
MFGE 4318	Additive Manufacturing	3
MFGE 4355	Design of Machine Elements	3
MFGE 4357	Dynamics of Machinery	3
MFGE 4367	Polymer Properties and Processing	3
MFGE 4377	Introduction to Polymer Nanocomposites	3
TECH 4330	Foundry & Heat Treatment	3
MFGE 4315	Energy and Thermofluids Engineering	3

No more than 3 hours of credit may be applied to the student's major electives from any combination of the following courses:

ENGR 3190	Cooperative Education
ENGR 3290	Advanced Cooperative Education
ENGR 4299	Engineering Undergraduate Research

### Math/Science Electives

Code	Title	Hours
CHEM 1342 & CHEM 1142	General Chemistry II and General Chemistry Laboratory II	4
MATH 2393	Calculus III	3
MATH 3330	Introduction to Advanced Mathematics	3
PHYS 2335 & PHYS 2135	Waves and Heat and Waves and Heat Laboratory	4
PHYS 3315	Thermodynamics	3