

BACHELOR OF SCIENCE (B.S.) MAJOR IN MANUFACTURING ENGINEERING (GENERAL MANUFACTURING 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

First Hours		Second Hours		Freshman
Semester		Semester		
CHEM 1335 (students should take either [CHEM 1341 & 1141, TCCN CHEM 1311 & 1111] or [CHEM 1335 & 1135, TCCN CHEM 1309 & 1109])	3	PHYS 1430 (Life and Physical Sciences Component Code 030 [TCCN PHYS 2425])	4	

CHEM 1135 (students should take either [CHEM 1341 & 1141, TCCN CHEM 1311 & 1111] or [CHEM 1335 & 1135, TCCN CHEM 1309 & 1109])	1	ENGR 2300	3		
MATH 2471 (Mathematics Component Code 020 [TCCN MATH 2413])	4	ENG 1320 (Communication Component Code 010 [TCCN ENGL 1302])	3		
US 1100	1	MATH 2472 (Component Area Option Code 090/092 [TCCN MATH 2414])	4		
ENG 1310 (Communication Component Code 010 [TCCN ENGL 1301])	3				
ENGR 1304 (TCCN ENGR 1304)	3				
15		14			
First Hours		Second Hours		Sophomore	
Semester		Semester		Summer Hours	
IE 3320	3	ENGR 2301 (TCCN ENGR 2301)	3	MGT 3303	3
MATH 3323	3	CS 1342	3	MATH 3377	3

MFGE 2332	3 ART 2313, DAN 2313, MU 2313, or TH 2313 (Creative Arts Component Code 050 [TCCN HUMA 1315])	3
PHYS 2425 (Life and Physical Sciences Component Code 030 and Component Area Option Code 090/093 [TCCN PHYS 2426])	4 ECO 2301 (Social and Behavioral Sciences Component Code 080 [TCCN ECON 1301])	3
American History Component Code 060	3 American History Component Code 060	3
MFGE 2132	1	
	17	15

Junior

	First Hours	Second Hours	
	Semester	Semester	
ENGR 3311	3 ENGR 3315	3	
ENGR 3373	3 IE 3330	3	
Math/ Science Elective ¹	3-4 IE 3360	3	
PHIL 1305 or 1320 (Language, Philosophy, and Culture Component Code 040 [TCCN PHIL 1301 or 2306])	3 MFGE 4365	3	
MFGE 3316	3 POSI 2310 (Government/ Political Science Component Code 070 [TCCN GOVT 2306])	3	

MFGE 3116	1		
	16	15	
		Senior	
	First Hours	Second Hours	
	Semester	Semester	
MFGE 4390	3 MFGE 4391	3	
MFGE 4395	3 MFGE 4376	3	
MFGE Electives ²	3 MFGE 4396	3	
POSI 2320 (Government Political Science Component Code 070 [TCCN GOVT 2305])	3 MFGE Electives ²	3	
IE 4355	3 MFGE 4176	1	
	15	13	

Total Hours: 126

- ¹ A minimum of three (3) hours of approved Math/Science electives are required. Choose 3-4 hours from CHEM 1342 & CHEM 1142, MATH 2393, MATH 3330, PHYS 2435, or PHYS 3315.
- ² 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
EE 4331	Introduction to Machine Learning for Engineering Applications	3
EE 4392	Microelectronics Manufacturing I	3
EE 4394	Microelectronics Manufacturing II	3
ENGR 3190	Cooperative Education	1
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 4378	Introduction to Industrial Robotics	3
MFGE 4377	Introduction to Polymer Nanocomposites	3
TECH 4330	Foundry & Heat Treatment	3