BS – Manufacturing Engineering   (SC-BS/MFGE)   2025 Catalog year: College of Science and Engineering

Freshman Fall semester	Freshman Spring semester	Sophomore Fall semester	Sophomore Spring semester	Junior Fall semester	Junior Spring semester	Senior Fall semester	Senior Spring semester

CS 1342 (F,S) — Programming for Scientists & Engineers

Choose 3-4 hours: MATH 2393, MATH 3330, PHYS 2335+2135, PHYS 3315, CHEM 1342/1142 **(Check Prerequisites)**

ENGR 3315 (F,S,Su) — Engineering Economic Analysis *(Prerequisite: MATH 1315 or 2417 or 2471)*

Choose 12 hours of manufacturing processes electives (see next page)

MATH 2471 (F,S,Su) — Calculus I — *TCCNS: MATH 2413*

MATH 2472 (F,S,Su) — Calculus II — *TCCNS: MATH 2414*

PHYS 2325 (F,S) — Mechanics — *TCCNS: PHYS 2325 (Previously PHYS 1430)*

PHYS 2326 (F,S) — Electricity & Magnetism — *TCCNS: PHYS 2326 (Previously PHYS 2425)*

ENGR 2301 (F,S,Su) — Statics

ENGR 3311 (F,S,Su) — Mechanics of Materials — *TCCNS: ENGR 2332*

MFGE 4390 (F) — Manufacturing Engineering Senior Design I *(Must be a Senior)*

MFGE 4391 (S) — Manufacturing Engineering Senior Design II *(Must be a Senior)*

PHYS 2125 (F,S) — Mechanics Lab — *TCCNS: PHYS 2125 (or 2425)*

PHYS 2126 (F,S) — Electricity & Magnetism Lab — *TCCNS: PHYS 2126 (or 2426)*

ENGR 3373 (F,S) — Circuits & Devices

IE 3330 (F,S) — Quality Engineering

MFGE 4396 (F,S) — Manufacturing Systems Design

CHEM 1341+1141 (F,S,Su) — General Chemistry I — *TCCNS: CHEM 1411/ 1311+1111*

OR

CHEM 1335+1135 (F,S,Su) — Engineering Chemistry — *TCCNS: CHEM 1409/ 1309+1109* **(See Page 2 for Prerequisite Information)**

MATH 3377 (F,S,Su) — Linear Algebra

MATH 3323 (F,S,Su) — Differential Equations — *TCCNS: MATH 2320*

MGT 3301 (F,S,Su) — Introduction to Management

ENGR 2300 (F,S,Su) — Materials Engineering

IE 3320 (F,S,Su) — Engineering Statistics

MFGE 4376 (S) — Control Systems & Instrumentation **(Check Prerequisites)**

MFGE 4378 (S) — Introduction to Industrial Robotics

MFGE 2332 (F,S) — Materials Selection

MFGE 3316 (F) — Computer Aided Design & Mfge **(Check Prerequisites)**

MFGE 4395 (F) — Computer Integrated Manufacturing **(Check Prerequisites)**

MFGE 2132 (F,S) — Manufacturing Lab I

MFGE 3116 (F) — Manufacturing Lab II

MFGE 4176 (S) — Manufacturing Lab III **(Check Prerequisites)**

ENGR 1304 (F,S,Su) — Engineering Design Graphics — *(Corequisite: MATH 2417 or 2472 or 2472 or 2393)*

This is not an official degree audit and it is subject to change. This chart is intended to be used by students who start out at Texas State. Please contact the College of Science and Engineering Undergraduate Advising Center for advising.

Note: In addition to major courses, students must also complete all core and minor requirements (if applicable) and any other requirements for graduation.

KEY:
Arrows indicate prerequisites.
Arrows with dotted lines indicate co-requisites.
Arrows with dash lines are recommended prerequisites.
Courses taught in specific semesters are indicated with the following codes:
F-Fall   Su-Summer Session I or II
S-Spring

Required WI courses: MFGE 4390, 4391, 4395, 4396

Core courses must be completed:

___	6 credits Core 010	TXST options: [ENG 1310] and ENG 1320, ENG 1321, ENG 3303, COMM 1310
___	3 credits Core 020	MFGE required course: MATH 2471
___	6 credits Core 030	MFGE required courses: PHYS 2325 + CHEM 1335 (or CHEM 1341)
___	3 credits Core 040	TXST options: PHIL 1305 or 1320
___	3 credits Core 050	TXST options: ART 2313, DAN 2313, MU 2313, TH 2313
___	6 credits Core 060	TXST options:[HIST 1310/2327/2381] and [HIST 1320/2328/2382]
___	6 credits Core 070	TXST options: POSI 2310 & POSI 2320
___	3 credits Core 080	MFGE required course: ECO 2301
___	6 credits Core 090, 091, 092, 093, and 094	MFGE required courses: MATH 2472 + PHYS 2326

US 1100 may be required for some students. Consult with an advisor regarding course choices.

Choose 12 credits MFGE Elective Options (check prerequisites):

Smart Manufacturing focus:
MFGE 4318 – Additive Manufacturing
MFGE 4377 – Intro to Polymer Nanocomposites
MFGE 4367 – Polymer Properties & Processing
MFGE 4365 – Tool Design

Auto & Aero focus:
MFGE 4318 – Additive Manufacturing
MFGE 4377 – Intro to Polymer Nanocomposites
MFGE 4355 – Design of Machine Elements
MFGE 4357 – Dynamics of Machinery
MFGE 4367 – Polymer Properties & Processing
MFGE 4315 – Energy & Thermofluids Engineering
MFGE 4365 – Tool Design

Semiconductor Manufacturing focus:
MFGE 4318 – Additive Manufacturing
MFGE 4315 – Energy & Thermofluids Engineering

Students may also choose a maximum of 3 credits from:

EE 4331 – Intro to Machine Learning for Engineering Applications
EE 4392 – Microelectronics Manufacturing I
EE 4394 – Microelectronics Manufacturing II
IE 4355 – Facilities Planning
IE 3360 – Human Factors Design
TECH 4330 – Foundry & Heat Treatment

ENGR 3190 – Cooperative Education
ENGR 3290 – Cooperative Education
ENGR 4299 – Engineering Undergraduate Research
ENGR 4395 – Independent Studies in Engineering

CHEM 1335 or 1341
Prerequisite Requirements:

Must complete 1 of the following mathematics prerequisites:
- MATH 1315 or MATH 1317 or MATH 1319 or MATH 1329 or MATH 2321 or MATH 2417 or MATH 2471 - any with a grade of "C" or better
- ACT Mathematics score of 24 or better
- New ACT Mathematics score of 25 or better
- SAT Mathematics score of 550 or better
- Accuplacer College Mathematics score of 86 or better
- Compass College Algebra score of 46 or better
- Next-Generation Advanced Algebra and Functions Test of 263 or better

AND

Must complete 1 of the following to demonstrate Chemistry Readiness:
- Completion of Chemistry Readiness Exam with a score of 80 or better
- CHEM 1320 grade of "C" or better