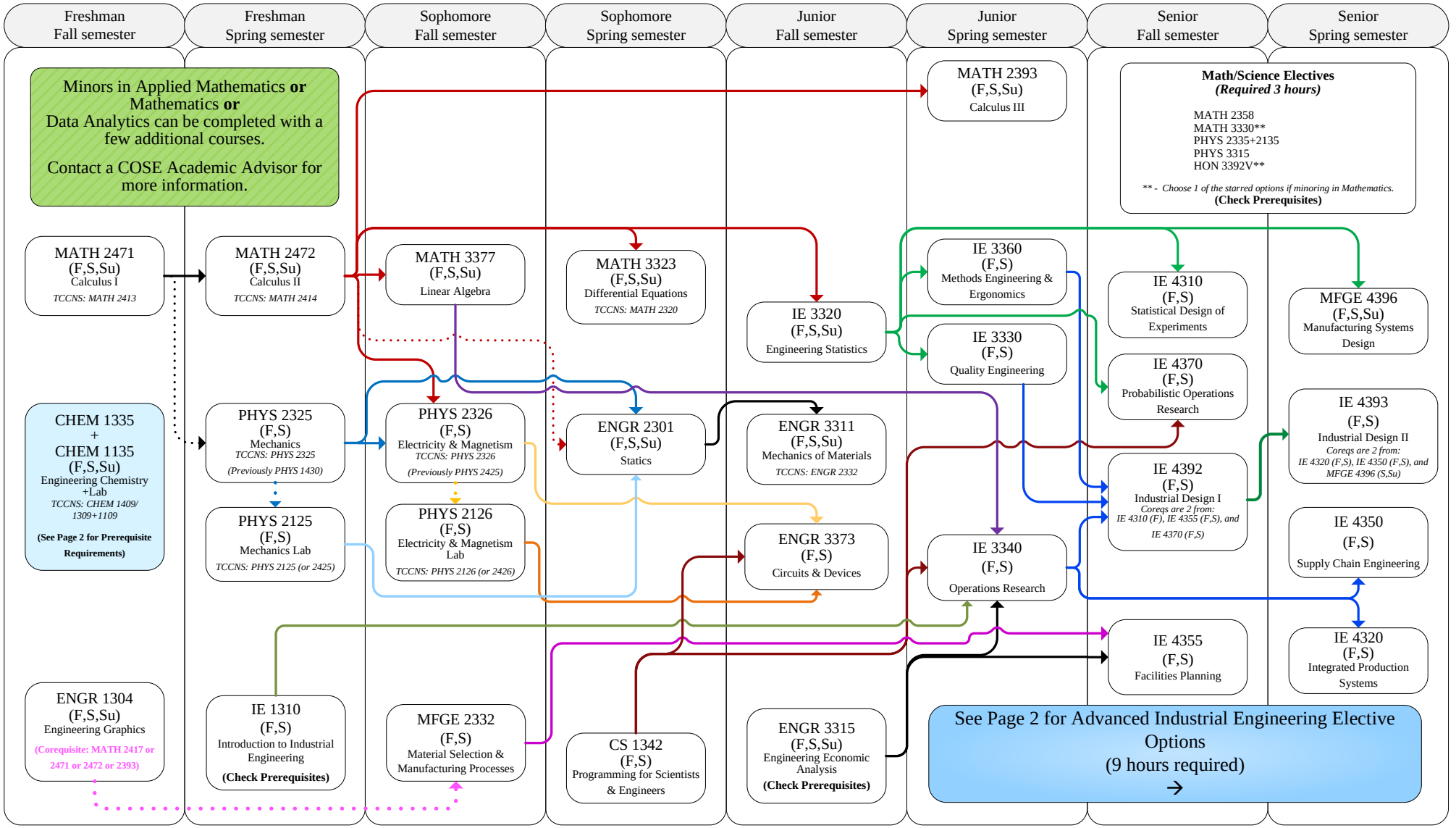
BS – Industrial Engineering (SC-BS/IE)

2025 Catalog year: College of Science and Engineering



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: IE 4392, 4393, MFGE 4396, ENG 3303
Additional WI courses: IE 4360

Core courses must be completed:

___ 6 credits Core 010	TXST options: [ENG 1310, ENG 1320, ENG 1321] and ENG 3303
___ 3 credits Core 020	IE required course: MATH 2471
___ 6 credits Core 030	IE required courses: PHYS 2325 & CHEM 1335
___ 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] & [HIST 1320/2328/2382]
___ 6 credits Core 070	TXST options: POSI 2310 & POSI 2320
___ 3 credits Core 080	IE required course: ECO 2301
___ 6 credits Core 090, 091, 092, 093, and 094	IE required courses: MATH 2472 & PHYS 2326

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

Advanced Industrial Engineering Electives

(Choose 9 hours from the following)

Data Engineering & Operations Research

- EE 3326 – Numerical & Scientific Data Analysis Using Python
- EE 4331* – Introduction to Machine Learning for Engineering Applications
- IE 3305 – Intro to Data Analysis
- IE 4340* – Non-Linear Optimization
- IE 4342* – Advanced Linear & Integer Programming
- IE 4399D – Heuristic Optimization

** - Choose 1 of the starred options if minoring in Data Analytics.*

(Check Prerequisites)

Cooperative Education & Undergraduate Research

(Maximum of 3 hours)

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

(Check Prerequisites)

Manufacturing Engineering

- MFGE 4367 – Polymer Properties & Processing
- MFGE 4318 – Additive Manufacturing
- EE 4392 – Micro Electronics Manufacturing

Professional Certification Electives

- IE 4399G – Special Topics in Project Management
- IE 4335 – Lean Six Sigma Methodologies

Systems Engineering

- IE 4381 – Introduction to Systems Engineering

Human Factors

- IE 4360 – Human Factors Design

Resilient and Sustainable Operations

- IE 4330 – Reliability Engineering

Other

- EE 4357 – Power Systems

(Check Prerequisites)

To earn a minor in Data Analytics, the following courses must be completed:

- ANLY 2300
- EE 4331 or IE 4340 or IE 4342 must be chosen as an Advanced Industrial Engineering Elective option and to fulfill the algorithms/data mining requirement.
- Required IE major courses will fulfill the remaining minor requirements:
  1. IE 3320 (statistics),
  2. CS 1342 (computer/programming),
  3. IE 3330 & IE 3340 (prescribed electives; IE 4310 & IE 4370 will also meet this requirement).

To earn a minor in Mathematics, students must choose one of the following course options:

- MATH 3330
- HON 3392V

An Applied Mathematics minor can be earned without taking any additional coursework.

Contact a COSE Academic Advisor for more information.

CHEM 1335
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