BS – Manufacturing Engineering: Mechanical Systems Concentration (SC-BM/MFGE/MSYS) 2024 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
  - S-Spring
  - Su-Summer Session I or II
- Required WI courses: MFGE 4390, 4391, 4395, 4396
- Core courses must be completed:
  - 6 credits Core 010
  - 6 credits Core 020
  - 6 credits Core 030
  - 6 credits Core 040
  - 3 credits Core 050
  - 6 credits Core 060
  - 6 credits Core 070
  - 3 credits Core 080
  - 6 credits Core 090
  - 9 credits Core 010
  - 9 credits Core 020
  - 9 credits Core 030
  - 9 credits Core 040
  - 9 credits Core 050
  - 9 credits Core 060
  - 9 credits Core 070
  - 9 credits Core 080
  - 9 credits Core 090
  - MFGE required course: MATH 2472 + PHYS 2326
  - MFGE required courses: MATH 2471 or PHYS 2325 + CHEM 1335 (or CHEM 1341)

**Core and Minor Requirements:**
- Choose 6 hours of mechanical systems electives:
  - EE 4392
  - EE 4394
  - ENGR 3319
  - ENGR 3320
  - ENGR 4395
- MFGE required course: ECO 2301
- MFGE required courses: MATH 2472 + PHYS 2326
- MFGE required course: MATH 2471
- MFGE required courses: PHYS 2325 + CHEM 1335 (or CHEM 1341)

**Potential Course Pathways:**
- **Freshman Fall Semester:**
  - MATH 2471 (F.S.Su) Calculus I
    - CHEM 1341+1141 (F.S,Su) General Chemistry I
    - CHEM 1335+1135 (F.S,Su) Engineering Chemistry I
    - ENGR 1304 (F.S.Su) Engineering Graphics
  - PHYS 2325 (F.S) Mechanics
  - ENGR 2303 (F.S.Su) Fundamentals of Manufacturing Processes
  - IE 3301 (F.S) Quality Engineering
  - MFGE 2332 (F) Materials Selection
  - MFGE 2312 (F.S) Manufacturing Lab I

- **Freshman Spring Semester:**
  - MATH 2472 (F.S.Su) Calculus II
  - PHYS 2125 (F.S.Su) Engineering Graphics
  - ENGR 2300 (F.S.Su) Materials Engineering
  - IE 3320 (F.S.Su) Engineering Statistics

- **Sophomore Fall Semester:**
  - MATH 3323 (F.S.Su) Differential Equations
  - PHYS 2126 (F.S.Su) Electricity & Magnetism Lab
  - MATH 3377 (F.S.Su) Linear Algebra
  - IE 3330 (F.S) Quality Engineering
  - MFGE 2332 (F) Materials Selection
  - MFGE 2312 (F.S) Manufacturing Lab I

- **Sophomore Spring Semester:**
  - PHYS 2326 (F.S) Electricity & Magnetism
  - MATH 3377 (F.S.Su) Linear Algebra
  - MFGE 3316 (F.S) Manufacturing Systems Design
  - MFGE 3317 (F.S) Manufacturing Lab II

- **Junior Fall Semester:**
  - ENGR 3305 (F.S.Su) Engineering Analysis
  - MFGE 3317 (F.S) Manufacturing Lab II

- **Junior Spring Semester:**
  - MFGE 4395 (F.S) Computer Integrated Manufacturing

- **Senior Fall Semester:**
  - MFGE 4355 (S) Design of Machine Elements
  - Manufacturing Engineering Senior Design I (Must be a Senior)

- **Senior Spring Semester:**
  - MFGE 4376 (S) Control Systems & Instrumentation
  - Manufacturing Engineering Senior Design II (Must be a Senior)

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**Arrows with dash lines are recommended prerequisites.**

**Arrows indicate prerequisites.**

**Critical Table:**
- **Core and Minor Requirements:**
  - 6 credits Core 010
  - 6 credits Core 020
  - 6 credits Core 030
  - 6 credits Core 040
  - 3 credits Core 050
  - 6 credits Core 060
  - 6 credits Core 070
  - 3 credits Core 080
  - 6 credits Core 090
  - MFGE required courses: MATH 2472 + PHYS 2326

**TCCNS:**
- MATH 2413
- MATH 2414
- MATH 2320
- CHEM 1411/1412
- CHEM 1311/1312
- PHYS 2125/2425
- PHYS 2325/2425
- ENGR 2332
- ENGR 3290
- EE 4392
- EE 4394
- ENGR 3319
- ENGR 3320
- ENGR 4395

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

**Core courses must be completed:**
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- 6 credits Core 020
- 6 credits Core 030
- 6 credits Core 040
- 3 credits Core 050
- 6 credits Core 060
- 6 credits Core 070
- 3 credits Core 080
- 6 credits Core 090
- 9 credits Core 010
- 9 credits Core 020
- 9 credits Core 030
- 9 credits Core 040
- 9 credits Core 050
- 9 credits Core 060
- 9 credits Core 070
- 9 credits Core 080
- 9 credits Core 090
- 9 credits Core 100
- MFGE required course: MATH 2472 + PHYS 2326

**Additional Prerequisites:**
- ENGR 2332
- ENGR 3290
- EE 4392
- EE 4394
- ENGR 3319
- ENGR 3320
- ENGR 4395

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

**Undergraduate Advising Center:**
- (Check Prerequisites)
- (Must be a Senior)
- (Corequisite: MATH 2471)
- **TFCCNS:**
  - MATH 2413
  - MATH 2414
  - MATH 2320
  - CHEM 1411/1412
  - CHEM 1311/1312
  - PHYS 2125/2425
  - PHYS 2325/2425
  - ENGR 2332
  - ENGR 3290
  - EE 4392
  - EE 4394
  - ENGR 3319
  - ENGR 3320
  - ENGR 4395

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- 6 credits Core 070
- 3 credits Core 080
- 6 credits Core 090
- MFGE required courses: MATH 2472 + PHYS 2326

**Additional Prerequisites:**
- ENGR 2332
- ENGR 3290
- EE 4392
- EE 4394
- ENGR 3319
- ENGR 3320
- ENGR 4395

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

**Undergraduate Advising Center:**
- (Check Prerequisites)
- (Must be a Senior)
- (Corequisite: MATH 2471)