

Mechanical Engineering B.S.M.E.

120 credits, 2023/2024 Catalog

First Year

Fall Semester

3	ENC 1101 Composition I
4	MAC 2281 or MAC 2311 Calculus I
3	CHS 2440 or CHM 2045 Chemistry I
1	CHS 2440L or CHM 2045L Chemistry Lab
R	EGN 3000 Foundations of Engineering
<u>3</u>	EGN 3000L Foundations of Engineering Lab (TGEC)
14	<i>Total Credits</i>

Spring Semester

3	ENC 1102 Composition II
4	MAC 2282 or MAC 2312 Calculus II
3	PHY 2048 General Physics I
1	PHY 2048L General Physics I Lab
<u>3</u>	St Gen Ed Core Humanities Elective
14	<i>Total Credits</i>

Second Year

Fall Semester

4	MAC 2283 or MAC 2313 Calculus III
3	PHY 2049 General Physics II
1	PHY 2049L General Physics II Lab
3	* EGN 3311 Statics
3	EGN 3615 Engr Econ Social/Global Impltn (TGED)
!	Apply for Progression to Upper Division
14	<i>Total Credits</i>

Spring Semester

3	* EGN 3343 Thermodynamics
3	* EML 3500 Mechanics of Solids
3	* EGN 3321 Dynamics
3	EGN 3433 Mod Anlys Eng Sys or MAP 2302 Differential Equations
<u>3</u>	** St Gen Ed Social Science Elective
15	<i>Total Credits</i>

Summer

3	EML 3035 Prog. Concepts
3	EGN 3365 Materials Engineering I
<u>3</u>	EML 3022 CAD
9	<i>Total Credits</i>

Third Year

Fall Semester

3	EML 3041 Computational Methods
3	EML 3701 Fluid Systems
3	EML 4325 Mechanical Manufacturing Processes
3	EML 3262 Kinematics & Dynamics of Machinery
<u>3</u>	EGN 3443 Probability & Statistics for Engineers (TGEI)
15	<i>Total Credits</i>

Spring Semester

3	EGN 3373 Electrical Systems I
3	EML 3303 Mechanical Engineering Lab I
3	EML 4501 Machine Design
3	EML 4106C Thermal Systems
<u>3</u>	EML 4123 Heat Transfer
15	<i>Total Credits</i>

Summer

Recommended Internship/Co-op List
Company/employer name and position

Fourth Year

Fall Semester

3	EML 4550 Capstone I – Ethics (TGEE)
3	EML 4302 Mechanical Engineering Lab II
3	EML 4220 Vibrations
3	EML 4312 Mechanical Controls
!	Apply for Graduation
12	<i>Total Credits</i>

Spring Semester

3	EML 4551 Capstone Design (TGEH)
3	Approved Technical/Design/Science Elective
3	Approved Technical/Design/Science Elective
3	Approved Technical/Design/Science Elective
<u>0</u>	EGN 4930 Advising for Graduating Seniors
12	<i>Total Credits</i>

Note: Courses in bold must be completed with an overall grade point average of 3.00, see overleaf.

R – Required course.

* – High priority courses. Statics & Dynamics have min C+ grade. Thermo & Mech Solids are min C grade.

** Students must meet the Civic Literacy requirement with credit for AMH 2020, POS 2041 and passing the Civic Literacy test.

TGEC = Gen Ed Creative Thinking, TGEI = Gen Ed Information & Data Literacy, TGED = Gen Ed Human & Cultural Diversity,

TGEE = Gen Ed Ethical Reasoning & Civic Engagement, TGEH = Gen Ed High Impact Practice Capstone

Mechanical Engineering Requirements for Progression to Upper Division

- Completion of the following courses with a minimum grade of C (not a “C-“) and a cumulative **3.00 GPA** based on best attempt (max two attempts) for the following courses:

- _____ **Calculus I or Engineering Calculus I (MAC2311 or MAC2281)**
- _____ **Calculus II or Engineering Calculus II (MAC2312 or MAC2282)**
- _____ **Calculus III or Engineering Calculus III (MAC2313 or MAC 2283)**
- _____ **Physics I with lab (PHY2048 and PHY2048L)**
- _____ **Physics II with lab (PHY2049 or 2061 and PHY2049L)**
- _____ **General Chemistry I or Chemistry for Engineers (CHM2045 & 2045L or CHS 2440 & 2440L)**

- Need a USF GPA and an Overall GPA of **2.50** or better

Continuation and Graduation Requirements

Reference Catalog: https://catalog.usf.edu/preview_program.php?catoid=19&poid=8768

- Completion of EGN 3311 Statics and EGN 3321 Dynamics with a minimum grade of “C+” in each course (grade of C is insufficient).
- Completion of EML 3500 Mechanics of Solids and EGN 3343 Thermodynamics I with a minimum grade of C in each course (C- is insufficient).
- The minimum acceptable grade in all BSME required math and science courses is a C or higher (C- is insufficient). Unless otherwise stated, the minimum acceptable grade in engineering and specialization courses is a C-.
- Students must have and maintain a minimum 2.0 Semester GPA, 2.0 Math and Science GPA, 2.0 Engineering GPA, 2.0 Specialization GPA, 2.0 USF GPA, and 2.0 Overall GPA.
- All math, science and engineering courses must be successfully completed in no more than **two** registered attempts. Grades of W, IF, U, and R are considered attempts.

Course Equivalencies

Courses at USF	Courses at a Florida State Institution
MAC 2281 Engineering Calculus I or MAC 2311 Calculus I	MAC X311 or MAC X281
MAC 2282 Engineering Calculus II or MAC 2312 Calculus II	MAC X312 or MAC X282
MAC 2283 Engineering Calculus III or MAC 2313 Calculus III	MAC X313 or MAC X283
MAP 2302 Differential Equations or EGN 3433 Modeling Analysis of Eng Systems	MAP X302 or MAP X305
CHM 2045/CHM 2045L General Chemistry I with Lab Or CHS 2440/2440L General Chemistry for Engineers with lab	CHM X045/X045L or CHM X045C or CHM X041/X045L or CHS X440/X440L
PHY 2048/2048L General Physics I with PHY 2048L	PHY X048/X048L or PHY X048C or PHY X043/X048L
PHY 2049/2049L General Physics II or PHY 2061 Enriched Physics II with PHY 2049L	PHY X049/X049L or PHY X049C or PHY X044/X049L