Mechanical Engineering B.S.M.E.

120 credits, 2022/2023 Catalog

First Year

Fall Semester		Spring Semester	
3	ENC 1101 Composition I	3	ENC 1102 Composition II
4	***MAC 2281 or MAC 2311 Calculus I***	4	***MAC 2282 or MAC 2312 Calculus II***
3	***CHS 2440 or CHM 2045 Chemistry I***	3	***PHY 2048 General Physics I***
1	***CHS 2440L or CHM 2045L Chemistry Lab***	1	***PHY 2048L General Physics I Lab***
R	EGN 3000 Foundations of Engineering	3	St Gen Ed Core Humanities Elective
3	EGN 3000L Foundations of Engineering Lab (TGEC)		
14	*Total Credits*	14	*Total Credits*

Second Year

Fall Semester		Spring Semester		Summer	
4	***MAC 2283 or MAC 2313 Calculus III***	3	*** EGN 3343 Thermodynamics**	3	EML 3035 Prog. Concepts
3	***PHY 2049 General Physics II***	3	*** EML 3500 Mechanics of Solids**	3	EGN 3365 Materials
1	***PHY 2049L General Physics II Lab***	3	*** EGN 3321 Dynamics**		Engineering I
3	*** EGN 3311 Statics**	3	EGN 3433 Mod Anlys Eng Sys	3	EML 3022 CAD
3	EGN 3615 Engr Econ Social/Global Impltn (TGED)		or MAP 2302 Differential Equations		
!	**Apply for Progression to Upper Division**	3	** St Gen Ed Social Science Elective		
14	*Total Credits*	*15*	*Total Credits*	*9*	*Total Credits*

Third Year

Fall Semester		Spring Semester		Summer
3	EML 3041 Computational Methods	3	EGN 3373 Electrical Systems I	**Recommended**
3	EML 3701 Fluid Systems	3	EML 3303 Mechanical Engineering Lab I	**Internship/Co-op**
3	EML 4325 Mechanical Manufacturing Processes	3	EML 4501 Machine Design	List
3	EML 3262 Kinematics & Dynamics of Machinery	3	EML 4106C Thermal Systems	Company/employer
3	EGN 3443 Probability & Statistics for Engineers (TGEI)	3	EML 4123 Heat Transfer	name and position
15	*Total Credits*	*15*	*Total Credits*	

Fourth Year

Fall Semester		Spring Semester	
3	EML 4550 Capstone I – Ethics (TGEE)	3	EML 4551 Capstone Design (TGEH)
3	EML 4302 Mechanical Engineering Lab II	3	Approved Technical/Design/Science Elective
3	EML 4220 Vibrations	3	Approved Technical/Design/Science Elective
3	EML 4312 Mechanical Controls	3	Approved Technical/Design/Science Elective
!	Apply for Graduation	0	EGN 4930 Advising for Graduating Seniors
12	*Total Credits*	12	*Total Credits*

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=17&poid=7243

- 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