

# Chemical Engineering B.S.C.H.

131 credits, 2024/2025 Catalog

## First Year

Fall Semester	Spring Semester	Summer
3 ENC 1101 Composition I	4 <i>MAC 2282 or MAC 2312 Calculus II</i>	<u>3</u> Upper-Level Dept. Elective
4 <i>MAC 2281 or MAC 2311 Calculus I</i>	3 <i>CHM 2046 General Chemistry II</i>	
3 <i>CHM 2045 General Chemistry I</i>	1 <i>CHM 2046L General Chemistry II Lab</i>	
1 <i>CHM 2045L General Chemistry I Lab</i>	3 <i>PHY 2048 General Physics I</i>	
R EGN 3000 Foundations of Engineering	1 <i>PHY 2048L General Physics I Lab</i>	
3 EGN 3000L Foundations of Engineering Lab (TGEC)	<u>3</u> ECH 3854 Engineering Computations	
<u>2</u> ECH 3002 Introduction to ChBME		
16 <i>Total Credits</i>	15 <i>Total Credits</i>	3 <i>Total Credits</i>

## Second Year

Fall Semester	Spring Semester	Summer
4 <i>MAC 2283 or MAC 2313 Calculus III</i>	3 EGN 3433 Modeling & Analysis Eng Syst or MAP 2302 Differential Equations	<u>3</u> Upper-Level Dept. Elective
3 <i>PHY 2049 General Physics II</i>	3 ECH 3101 ChE Thermodynamics I	
1 <i>PHY 2049L General Physics II Lab</i>	3 CHM 2210 Organic Chemistry I	
3 BSC 2010 Cellular Processes	3 CHM 2210 Organic Chemistry I Lab	
<b>3 ECH 3023 Material and Energy Balances</b>	2 CHM 2210 Organic Chemistry I Lab	
3 ENC 1102 Composition II	3 ECH 4846 Numerical Methods	
<b>!</b> <a href="#">Apply for Progression to the Upper Division</a>	<u>3</u> Gen. Ed. Human & Cultural Diversity	
17 <i>Total Credits</i>	17 <i>Total Credits</i>	3 <i>Total Credits</i>

## Third Year

Fall Semester	Spring Semester	Summer
3 ECH 3266 Transport Phenomena I	3 ECH 4504 Kinetics and Reaction Eng	<b>Recommended Internship/Co-op</b>
3 ECH 4123 ChE Thermodynamics II	3 ECH 4418 Separation Processes	<i>List Name &amp; Position</i>
3 Upper-Level Department or Science Elective	3 ECH 4267 Transport Phenomena II	<u>3</u> Upper-Level Dept. Elective
3 CHM 2211 Organic Chem. II or BCH 3053 BioChem.	3 Upper-Level Department Elective	
<u>3</u> Gen. Ed. Information & Data Literacy	<u>3</u> EMA 4003 Intro to Materials Science	
15 <i>Total Credits</i>	15 <i>Total Credits</i>	3 <i>Total Credits</i>

## Fourth Year

Fall Semester	Spring Semester
2 ECH 3240L Chemical Engineering Laboratory I	2 ECH 4241L Chemical Engineering Laboratory II
3 ECH 4605 Product and Process Systems Engineering	3 ECH 4615C Product and Process Design (TGEH)
3 * General Elective	3 ECH 4680C Product Development (TGEE)
3 ECH 4323 Process Dynamics and Control	3 General Education Humanities Elective
2 ECH 4715 Chemical Process Safety and Ethics	<u>3</u> * General Education Social Sciences Elective
<b>!</b> <a href="#">Apply for Graduation</a>	
13 <i>Total Credits</i>	14 <i>Total Credits</i>

**Note:** Course in bold must be completed with a minimum grade of C within a certain time period, see overleaf.

R – Required course.

\* Students must meet the Civic Literacy requirement with credit for AMH 2010 (fall 2024 or later), AMH 2020, or POS 2041 **and** passing the Florida Civics Literacy Exam.

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

## Chemical Engineering Requirements for Progression to Upper Division

In addition to meeting continuation requirements, **ECH 3023 Material and Energy Balances must be completed with a minimum grade of C** (C- is insufficient) by no later than the end of the fifth semester (not counting summers) for first-year students or by the end of the third semester (not counting summers) for upper-level transfer students. The semester count begins upon admission to USF. Students are encouraged to complete this course as soon as possible upon entry at the university.

## Continuation and Graduation Requirements

Reference Catalog: [https://catalog.usf.edu/preview\\_program.php?catoid=21&poid=10327](https://catalog.usf.edu/preview_program.php?catoid=21&poid=10327)

- 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.
- Prerequisite courses must be completed with a grade of “C” or better (C- is insufficient) before the student is allowed to take the course. The passing grade for terminal courses, which are not prerequisite courses, is a D-.
- Each student must not accumulate more than a total of three (3) grade of D, F, or W, in any combination, for the collection of the required major specialization courses.
- **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