

B.S. IN CHEMICAL ENGINEERING

CATALOG YEAR 2019-2020

Below is the *advised sequence* of courses for this degree program and prerequisites as of 12/12/18.

The official degree requirements and prerequisites found in the University General Catalog and the prerequisites are subject to change.

COURSE NUMBER AND TITLE	UNITS	PREREQUISITES
1ST SEMESTER		
MATH 122A/B or MATH 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I or CHEM 161/163	4	Appropriate Math Placement
ENGL 101 or 107 or 109H First-Year Composition	3	
ENGR 102A/B Introduction to Engineering or ENGR 102	3	ENGR102A: MATH 113 or 120R & CHEM 151; ENGR102B: Concurrent enrollment or completion of MATH 122B or 125
Tier I General Education	3	
2ND SEMESTER		
MATH 129 Calculus II	3	MATH 122B or 125 with C or better
AME 105 Introduction to MATLAB I - (Seven Week 1)	1	Concurrent enrollment or completion of MATH 122B or 125
AME 205 Introduction to MATLAB II - (Seven Week 2) or CE 260 Computer Programming	1	AME 205: AME 105; CE 260: MATH223
PHYS 141 Introductory Mechanics or PHYS 161H	4	MATH 122B or 125 or appropriate Math Placement Level
ENGL 102 or 108 First-Year Composition	3	ENGL 101 or ENGL 107
CHEM 152 General Chemistry II OR CHEM 162/164 or MSE 110	4	For CHEM 152 and MSE 110: CHEM 151 or 161/163
3RD SEMESTER		
CHEE 201 Elements of Chemical and Environmental Engineering I (Fall Only)	3	MATH 122B or 125; Completion or concurrent enrollment MATH 129, CHEM 152 or 162/164
CHEE 201L Elements of Chemical and Environmental Engineering I Computational Lab (Fall Only)	1	AME 105, Concurrent Enrollment or completion of AME 205 or CE 260
MATH 223 Vector Calculus	4	MATH 129 with C or better
CHEM 241A Lectures in Organic Chemistry or CHEM 242A or 246A	3	CHEM 152 or 162/164
CHEM 243A Organic Chemistry Laboratory or CHEM 247A	1	CHEM 152 or 162/164; Prerequisites or concurrent in CHEM 241A or 242A or 246A
Tier I General Education	3	
4TH SEMESTER		
CHEE 202 Elements of Chemical Engineering II (Spring Only)	4	CHEE 201, 201L; Completion or concurrent enrollment in MATH 254
CHEE 203 Chemical Engineering Heat Transfer and Fluid Flow	3	CHEE 201, PHYS 141
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 or 223 with C or better
PHYS 241 Introductory Electricity and Magnetism OR PHYS 261H	4	For PHYS 241 or 261H: PHYS 141 or 161H; MATH 129 or appropriate Math Placement Level
CHEM 241B Lectures in Organic Chemistry OR CHEM 242B OR CHEM 246B	3	For CHEM 241B/246B: CHEM 241A or 242A or 246A; For CHEM 242B: CHEM 242A, Active in Honors College
COURSE NUMBER AND TITLE	UNITS	PREREQUISITES

CURRENT PREREQUISITES FOR UPPER DIVISION COURSES CAN BE FOUND IN THE UA GENERAL CATALOG**ADVANCED STANDING IS REQUIRED FOR 3XX AND 4XX COURSES (SEE ADVISOR FOR REQUIREMENTS)****5TH SEMESTER**

CHEE 303 Chemical Engineering Mass Transfer 3

CHEE 402 Chemical Engineering Modeling 3

CHEE 301A Chemical Engineering Lab I 1

CHEE 489 Trends in Nanomedicine Engineering - Fundamentals
Therapeutics/Drugs Delivery Systems or CHEE 477R Microbiology for
Engineers or BIOC 462A Biochemistry or CHEE 481A Engineering of
Biological Processes 3

CHEM 480A Physical Chemistry 3

Tier I General Education 3

6TH SEMESTER

CHEE 305 Chemical Engineering Transport Phenomena 3

CHEE 326 Chemical and Physical Equilibrium 3

CHEE 301B Chemical Engineering Lab II 1

Engineering Elective – See major advisor for course approval 3

Technical Elective – See Major advisor for course approval 3

Tier I General Education 3

7TH SEMESTER

CHEE 420 Chemical Reaction Engineering 3

CHEE 442 Chemical Engineering Design Principles 3

CHEE 401A Chemical and Environmental Engineering Laboratory I 1

Engineering Elective – See major advisor for course approval 3

Advanced Science Requirement: CHEM 480B Physical Chemistry or
CHEM 481 Biophysical Chemistry or
BIOC 462B Biochemistry 3

Tier II General Education 3

8TH SEMESTER

CHEE 413 Process Control and Simulation 3

CHEE 401B Process Dynamics and Control Laboratory 1

CHEE 443 Chemical Engineering Plant Design 3

Engineering Elective – See major advisor for course approval 3

Technical Elective – See major advisor for course approval 3

Tier II General Education 3

*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.