

Minimum required credit hours required for graduation: 121

Recommended credit hours for graduation: 124 - Recommended credit hours are marked below with a caret (^).

A minimum grade of "C-" is required for all CBE courses. A minimum grade of "C" is required for all other courses (non-CBE courses).

FRESHMAN YEAR

<u>FALL SEMESTER</u>			<u>SPRING SEMESTER</u>		
CBE 101	Introduction to Chemical and Biological Engineering ⁽¹⁾	1	CBE 102	Addressing Societal Challenges Using the Tools of Chemical and Biological Engineering ⁽¹⁾	1
CHEM 1215 (or 1217)	General Chemistry I for STEM Majors ⁽¹⁾ (or Principles of Chemistry I)	3	CHEM 1225 (or 1222)	General Chemistry II for STEM Majors ⁽¹⁾ (or Principles of Chemistry II)	3
CHEM 1215L	General Chemistry I for STEM Majors Lab ⁽¹⁾	1	CHEM 1225L	General Chemistry II for STEM Majors Lab ⁽¹⁾	1
ENGL 1120	Composition II	3	MATH 1522	Calculus II ⁽¹⁾	4
MATH 1512	Calculus I ⁽¹⁾	4	PHYS 1310	Calculus-Based Physics I ⁽¹⁾	3
GEN ED	Humanities ⁽²⁾	3	PHYS 1311	Problems in Calculus-Based Physics I	1^
Total Required Semester Hours:		15	GEN ED	Communication ⁽²⁾	3
			Total Required Semester Hours:		15

SOPHOMORE YEAR

<u>FALL SEMESTER</u>			<u>SPRING SEMESTER</u>		
CBE 251	Chemical Process Calculations ⁽³⁾	3	CBE 253	Chemical & Biological Engineering Computing ⁽³⁾	3
CHEM 301	Organic Chemistry	3	CBE 302	Chemical Engineering Thermodynamics ⁽³⁾	3
CHEM 303L	Organic Chemistry Laboratory	1	MATH 316	Applied Ordinary Differential Equations	3
MATH 2530	Calculus III	4	CHEM 312	Physical Chemistry	3
PHYS 1320	Calculus-Based Physics II	3	CHEM 302	Organic Chemistry	3
PHYS 1321	Problems in Calculus-Based Physics II	1^	Total Required Semester Hours:		15
Total Required Semester Hours:		14			

JUNIOR YEAR ⁽⁴⁾

<u>FALL SEMESTER</u>			<u>SPRING SEMESTER</u>		
CBE 311	Introduction to Transport Phenomena ⁽³⁾	3	CBE 312	Unit Operations ⁽³⁾	3
CBE 317	Numerical Methods for Chemical and Biological Engineering ⁽³⁾	3	CBE 319L	Chemical Engineering Laboratory II ⁽³⁾	1
CBE 318L	Chemical Engineering Laboratory I: Introduction to Experimentation ⁽³⁾	3	CBE 321	Mass Transfer ⁽³⁾	3
BIOL 2101	Principles of Biology: Molecules to Cells ⁽⁷⁾	3	CBE 371	Introduction to Materials Engineering ⁽³⁾	3
BIOL 2103L	Principles of Biology: Introductory Lab ⁽⁷⁾	1	CBE 213	Laboratory Electronics for NE & CBE ⁽⁵⁾	3
GEN ED	Social & Behavioral Sciences ⁽²⁾	3	CE 350	Engineering Economy ⁽⁵⁾	3
Total Required Semester Hours:		16	Total Required Semester Hours:		16

SENIOR YEAR ⁽⁶⁾

<u>FALL SEMESTER</u>			<u>SPRING SEMESTER</u>		
CBE 418L	Chemical Engineering Laboratory III ⁽³⁾	1	CBE 419L	Chemical Engineering Laboratory IV ⁽³⁾	1
CBE 454	Process Dynamics and Control ⁽³⁾	3	CBE 451	Senior Seminar ⁽³⁾	1
CBE 461	Chemical Reactor Engineering ⁽³⁾	3	CBE 494L	Advanced Chemical Engineering Design ⁽³⁾	3
CBE 486	Introduction to Statistics and Design of Experiments ⁽³⁾	3	ELECTIVE	Technical Elective ⁽⁶⁾	3
CBE 493L	Chemical Engineering Design ⁽³⁾	3	GEN ED	Arts & Design ⁽²⁾	3
ELECTIVE	Technical Elective ⁽⁶⁾	3	GEN ED	Second Language ⁽²⁾	3
Total Required Semester Hours:		16	CBE 491	Undergraduate Research	1^
			Total Required Semester Hours:		14

(1) Admission to the BSChE degree program requires completion of all math, science, and engineering courses listed in the freshman year with a grade of "C" or better and a minimum 2.5 GPA average in those courses, completion of ENGL 1110 or the equivalent with a "C" or better, and a minimum 2.3 cumulative UNM GPA.

(2) A list of acceptable General Education (GEN ED) Humanities, Social & Behavioral Sciences, Arts & Design, and Second Language courses can be found here: <http://gened.unm.edu/>. These courses may be taken whenever convenient. It is recommended that that students choose at least one course with a globe next to it so that it not only satisfies the General Education requirement but also the mandatory 3 credit hour U.S. Global Diversity & Inclusion Undergraduate Requirement.

(3) CBE Core Courses must be taken in the order and semester in which they are listed on this sheet in order to avoid a delay in graduation.

(4) Students must file an application for the B.S.Ch.E. degree prior to the completion of 95 credit hours of applicable courses.

(5) CBE 213 and CE 350 may be taken in the fall or spring semester.

(6) Technical electives are chosen with the consultation of the student's faculty advisor to ensure that they support the student's concentration as well as the student's individual academic, career, and/or research goals. A list of pre-approved technical electives based on concentration can be found on our website [here](http://cbe.unm.edu).

(7) Formerly BIOL 2110c (4 hours). Transfer credit for BIOL 2110c will be approved to satisfy BIOL 2101 and BIOL 2103L.