CHEMICAL ENGINEERING - BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

The BS Chemical Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Requirements (Total Credits 124)

In addition to satisfying the requirements of New Mexico State University and the College of Engineering, CHME majors must pass departmental courses with a grade of C- or better.

CHME majors must have completed CHME 201 Energy Balances & Basic Thermodynamics prior to taking any 400-level CHME elective courses.

Degree requirements can also be found summarized in flow diagrams found on the CHME website (https://chme.nmsu.edu/academics/undergrad/chme-flow-diagrams/).

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 124 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I [1]	4
English Composition - Level 2		
ENGL 2210G	Professional and Technical Communication Honors	3
Oral Communication		
COMM 1115G	Introduction to Communication	3
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I [2]	4
Area III/IV: Laboratory Sciences and Social/Behavioral Sciences		*11*
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	
Area IV: Social/Behavioral Sciences Course (3 credits) [1]		
Area V: Humanities [1]		*3*
Area VI: Creative and Fine Arts [1]		*3*
General Education Elective		
MATH 1521G	Calculus and Analytic Geometry II	4
Viewing a Wider World [3]		**3**
Departmental/College Requirements		
CHME 101	Introduction to Chemical Engineering Calculations	2
CHME 102	Material Balances	2
CHME 201	Energy Balances & Basic Thermodynamics	3
CHME 303	Chemical Engineering Thermodynamics	4
CHME 305	Transport Operations I: Fluid Flow	3
CHME 306	Transport Operations II: Heat and Mass Transfer	4
CHME 307	Transport Operations III: Staged Operations	3
CHME 323 L	Transport Operations and Instrumentation Laboratory	2
CHME 352 L	Simulation of Unit Operations	2
CHME 361	Engineering Materials	3
CHME 392	Numerical Methods in Engineering	3
CHME 412	Process Dynamics and Control	3
CHME 423 L	Unit Operations Laboratory	2
CHME 441	Chemical Kinetics and Reactor Engineering	3
CHME 448	Industrial Safety	3
CHME 452	Chemical Process Design & Economic Evaluation	3
CHME 455	Chemical Plant Design	3
CHME 455 L	Chemical Plant Simulation	1
CHME Electives [4]		6
Non-Departmental Requirements		
Mathematics		
MATH 2530G	Calculus III	3
MATH 3160	Introduction to Ordinary Differential Equations	3
Natural Science		
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
or CHEM 1216	General Chemistry I Lecture and Laboratory for CHEM Majors	
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	4
or CHEM 1226	General Chemistry II Lecture and Laboratory for CHEM Majors	
CHEM 313	Organic Chemistry I	3
CHEM 314	Organic Chemistry II	3
CHEM 315	Organic Chemistry Laboratory	2
CHEM 433	Physical Chemistry I	3
Engineering		
I E 311	Engineering Data Analysis	3
I E 365	Quality Control	3
Second Language: (not required)		
Electives, to bring the total credits to 124		**0**
Total Credits		**124**

1. See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses.
2. MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G Calculus and Analytic Geometry I first.
3. See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses
   Also see the 9-credit hour rule at the bottom of the page. CHMEs meet the 9-credit hour rule through the sequence CHEM 313/314/433, and thus only need to complete 3 credits of VWW.
4. chme.nmsu.edu/academics/syllabi/#CHME_Elective_Courses (https://chme.nmsu.edu/academics/Syllabi.html#CHME_Elective_Courses)

A Suggested Plan of Study for Students

This roadmap assumes student placement in MATH 1511G Calculus and Analytic Geometry I and ENGL 1110G Composition I. The contents and order of this roadmap may vary depending on initial student placement in mathematics and english. It is only a suggested plan of study for students and is not intended as a contract. Course availability may vary from fall to spring semester and may be subject to modification or change.

First Year		
Fall		**Credits**
CHME 101	Introduction to Chemical Engineering Calculations	2
CHEM 1215G or CHEM 1216	General Chemistry I Lecture and Laboratory for STEM Majors or General Chemistry I Lecture and Laboratory for CHEM Majors	4
MATH 1511G	Calculus and Analytic Geometry I [1]	4
ENGL 1110G	Composition I	4
Area VI: Creative and Fine Arts Course [2]		3
	Credits	**17**
Spring		
CHME 102	Material Balances	2
CHEM 1225G or CHEM 1226	General Chemistry II Lecture and Laboratory for STEM Majors or General Chemistry II Lecture and Laboratory for CHEM Majors	4
MATH 1521G	Calculus and Analytic Geometry II	4
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	4
COMM 1115G	Introduction to Communication	3
	Credits	**17**
Second Year		
Fall		
CHME 201	Energy Balances & Basic Thermodynamics	3
CHEM 313	Organic Chemistry I	3
MATH 2530G	Calculus III	3
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	4
ENGL 2210G	Professional and Technical Communication Honors	3
	Credits	**16**
Spring		
CHME 303	Chemical Engineering Thermodynamics	4
CHME 305	Transport Operations I: Fluid Flow	3
I E 311	Engineering Data Analysis	3
CHEM 314	Organic Chemistry II	3
MATH 3160	Introduction to Ordinary Differential Equations	3
	Credits	**16**
Third Year		
Fall		
CHME 306	Transport Operations II: Heat and Mass Transfer	4
CHME 323 L	Transport Operations and Instrumentation Laboratory [5]	2
CHME 361	Engineering Materials	3
CHME 392	Numerical Methods in Engineering	3
CHEM 433	Physical Chemistry I	3
CHEM 315	Organic Chemistry Laboratory	2
	Credits	**17**
Spring		
CHME 307	Transport Operations III: Staged Operations	3
CHME 352 L	Simulation of Unit Operations	2
CHME 441	Chemical Kinetics and Reactor Engineering	3
Area IV: Social/Behavioral Sciences Course [2]		3
CHME Elective [4]		3
	Credits	**14**
Fourth Year		
Fall		
CHME 412	Process Dynamics and Control	3
CHME 423 L	Unit Operations Laboratory [5]	2
CHME 448	Industrial Safety	3
CHME 452	Chemical Process Design & Economic Evaluation	3
I E 365	Quality Control	3
	Credits	**14**
Spring		
CHME 455	Chemical Plant Design	3
CHME 455 L	Chemical Plant Simulation	1
CHME Elective [4]		3
Area V: Humanitites Course [2]		3
Viewing a Wider World Course [3]		3
	Credits	**13**
	Total Credits	**124**

1. MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G Calculus and Analytic Geometry I first.
2. See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses. For Area IV,V, and VI courses, students may take them at any time their schedule allows.
3. See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses
   Also see the 9-credit hour rule at the bottom of the page. CHMEs meet the 9-credit hour rule through the sequence CHEM 313/314/433, and thus only need to complete 3 credits of VWW.
4. chme.nmsu.edu/academics/syllabi/#CHME_Elective_Courses (https://chme.nmsu.edu/academics/Syllabi.html#CHME_Elective_Courses)
5. CHME 323L and CHME 423L are generally offered fall and spring semesters. Students can take them either semester.