

# 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
<b>General Education</b>		
<i>Area I: Communications</i>		
<i>English Composition - Level 1</i>		
ENGL 1110G	Composition I <sup>1</sup>	4
<i>English Composition - Level 2</i>		
ENGL 2210G	Professional and Technical Communication Honors	3
<i>Oral Communication</i>		
COMM 1115G	Introduction to Communication	3
<i>Area II: Mathematics</i>		
MATH 1511G	Calculus and Analytic Geometry I <sup>2</sup>	4
<i>Area III/IV: Laboratory Sciences and Social/Behavioral Sciences</i>		
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	
<i>Area IV: Social/Behavioral Sciences Course (3 credits) <sup>1</sup></i>		
<i>Area V: Humanities <sup>1</sup></i>		
3		
<i>Area VI: Creative and Fine Arts <sup>1</sup></i>		
3		
<i>General Education Elective</i>		
MATH 1521G	Calculus and Analytic Geometry II	4
<b>Viewing a Wider World <sup>3</sup></b>		
3		
<b>Departmental/College Requirements</b>		
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 <sup>4</sup>		6
<b>Non-Departmental Requirements</b>		
<i>Mathematics</i>		
MATH 2530G	Calculus III	3
MATH 3160	Introduction to Ordinary Differential Equations	3
<i>Natural Science</i>		
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
<i>Engineering</i>		
IE 311	Engineering Data Analysis	3
IE 365	Quality Control	3
<b>Second Language: (not required)</b>		
<b>Electives, to bring the total credits to 124</b>		<b>0</b>
<b>Total Credits</b>		<b>124</b>

<sup>1</sup> See the General Education (<https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/>) section of the catalog for a full list of courses.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> [chme.nmsu.edu/academics/syllabi/#CHME\\_Elective\\_Courses](https://chme.nmsu.edu/academics/syllabi/#CHME_Elective_Courses) ([https://chme.nmsu.edu/academics/Syllabi.html#CHME\\_Elective\\_Courses](https://chme.nmsu.edu/academics/Syllabi.html#CHME_Elective_Courses))