

REQUIREMENTS FOR THE BACHELOR OF SCIENCE/MASTER OF SCIENCE
GALLOGLY COLLEGE OF ENGINEERING
THE UNIVERSITY OF OKLAHOMA

Academic Year
For Students Entering the Oklahoma State System for Higher Education Summer 2024 through Spring 2025

General Requirements	
Minimum Total Credit Hours	143
Minimum Retention/Graduation Grade Point Averages:	
Overall - Combined and OU	3.25
Major - Combined and OU	3.25
Curriculum - Combined and OU	3.25

Program
Chemical Engineering (Standard)/ Chemical Engineering
A160/F160
Bachelor of Science/Master of Science

OU encourages students to complete at least 29 hours of applicable coursework each year to have the opportunity to graduate in 5 years.

GENERAL EDUCATION AND COLLEGE REQUIREMENTS

Courses designated as Core I, II, III, IV, or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list, including at least one upper-division Gen. Ed. course outside of the student's major. **Courses graded P/NP will not apply.**

A grade of C or better is required in each course in the curriculum, including all prerequisite courses.

UNIVERSITY-WIDE GENERAL EDUCATION (MINIMUM 40 HOURS) AND COLLEGE REQUIREMENTS

Code	Title	Credit Hours
Core Area I: Symbolic and Oral Communication		
<i>English Composition</i>		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
<i>Language (0-10 hours in the same language)</i>		
This requirement can be met by two years of the same language in high school:		0-10
Beginning Course (0-5 hours)		
Beginning Course, continued (0-5 hours)		
<i>Mathematics</i>		
MATH 1914	Differential and Integral Calculus I (Core I) ^{1,2}	4
Core Area II: Natural Science (including one laboratory)		
PHYS 2514	General Physics for Engineering and Science Majors (Core II) ²	4
CHEM 1315	General Chemistry (Core II-Lab) ^{2,3}	5
Core Area III: Social Science		
P SC 1113	American Federal Government	3
Choose one course ⁴		3
Core Area IV: Arts & Humanities		
<i>Artistic Forms</i>		
Choose one course ⁴		3
<i>Western Culture</i>		
HIST 1483	United States to 1865	3
or HIST 1493	United States, 1865 to the Present	
ARCH 2243	History of the Built Environment I (or approved substitute Core IV-Western Culture) ⁴	3
<i>World Culture</i>		
ANTH 4623	Approaches to Cross-Cultural Human Problems (or approved substitute Core IV-World Culture) ⁴	3
Core Area V: First-Year Experience		
ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) ⁵	3
Total Credit Hours		40-50

- MATH 1914, MATH 2924, and MATH 2934 can be substituted with MATH 1823, MATH 2423, MATH 2433, and MATH 2443.
- Major support requirements that also satisfy University General Education requirements.
- CHEM 1315 can be substituted with CHEM 1335 or CHEM 1425.
- To be chosen from the University-Wide General Education Approved Course List. Three of these hours must be upper-division (3000-4000). See list in the Class Schedule.
- Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

FREE ELECTIVES

Electives to bring total applicable hours to the minimum total required for the degree including a minimum of 40 upper-division hours.

Bachelor of Science in Chemical Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Chemical, Biochemical, Biomolecular and Similarly Named Program Criteria.

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a **grade of C or better** is required in each course in the curriculum, including all prerequisite courses.

MAJOR REQUIREMENTS

Code	Title	Credit Hours
Required Courses		
CH E 2033	Chemical Engineering Fundamentals	3
CH E 2003	Chemical Engineering Computing/Statistics	3
CH E 3113	Momentum, Heat and Mass Transfer I	3
CH E 3123	Momentum, Heat and Mass Transfer II	3
CH E 3473	Chemical Engineering Thermodynamics	3
CH E 3723	Numerical Methods for Engineering Computation	3
CH E 3333	Separation Processes	3
CH E 3432	Unit Operations Laboratory	2
CH E 4473	Kinetics	3
CH E 4153	Process Dynamics and Control	3
CH E 4253	Process Design & Safety	3
CH E 4262	Chemical Engineering Design Laboratory	2
CH E 3313	Structure and Properties of Materials	3
CH E 4273	Advanced Process Design	3
CH E 5971	Seminar in Chemical Engineering Research	1
Total Credit Hours		41

MAJOR SUPPORT REQUIREMENTS

Code	Title	Credit Hours
Math and Science		
CHEM 1435	General Chemistry II: Signature Course	5
CHEM 3064	Organic Chemistry I	4
CHEM 3423	Physical Chemistry I	3
CHEM 3164	Organic Chemistry II	4
MATH 2924	Differential and Integral Calculus II	4
MATH 2934	Differential and Integral Calculus III	4
MATH 3113	Introduction to Ordinary Differential Equations	3
PHYS 2524	General Physics for Engineering and Science Majors	4
Technical Electives		
Technical Elective I ¹		3
Technical Elective II ¹		3
Technical Elective III ¹		3
Advance Chemistry Elective		
Chosen from approved list of courses maintained by the department ¹		3
Additional College Requirements		
ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2
Total Credit Hours		45

- Chosen from approved list of courses maintained by the department. One of the Technical Electives or the Advanced Chemistry elective must be CH E. Prior faculty approval is needed.

GRADUATE REQUIREMENTS

Up to 13 hours of graduate-level CH E and/or science, math, engineering or technical courses (as approved by the graduate liaison) are shared/double-counted and fulfill requirements in both the B.S. and M.S. portions of the Accelerated Degree Program.

THESIS OPTION

Code	Title	Credit Hours
Required Courses		
CH E 5183	Graduate Transport Phenomena	3
CH E 5843	Advanced Chemical Engineering Thermodynamics	3

2 Requirements for the Bachelor of Science/Master of Science

CH E 6723	Advanced Kinetics and Reaction Engineering	3
Choose 1 hour per semester of the following:		3-4
CH E 5971	Seminar in Chemical Engineering Research	
Core Courses		
<i>Chemical Engineering</i>		
Choose two graduate-level advanced CH E courses as approved by the graduate liaison		5-6
<i>Science, Math or Engineering</i>		
Choose two graduate-level advanced science, math, engineering or technical courses as approved by the graduate liaison		6-7
Thesis		
CH E 5980	Research for Master's Thesis	6
Total Credit Hours		30-31

More information in the catalog: (<http://ou-public.courseleaf.com/gallogly-engineering/chemical-biological-materials-engineering/chemical-engineering-standard-bachelor-science-chemical-engineering-master-science/>).

SUGGESTED SEMESTER PLAN OF STUDY

Bachelor of Science in Chemical Engineering accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Chemical, Biochemical, Biomolecular and Similarly Named Program Criteria.

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum, including all prerequisite courses. Chemical engineering courses are sequential and usually offered only in the semester shown; note prerequisites.

Students must be admitted to the accelerated program before the beginning of the senior year. Students are eligible for graduate status upon graduation with the Bachelor of Science in Chemical Engineering.

Up to 13 hours of graduate-level CH E and/or science, math, engineering or technical courses (as approved by the graduate liaison) are shared/double-counted and fulfill requirements in both the B.S. and M.S. portions of the Accelerated Degree Program.

Two college-level courses in a single world language are required; this may be satisfied by successful completion of 2 years in a single world language in high school. Students who must take a language at the University will have an additional 6-10 hours of coursework.

Courses designated as Core I, II, III, IV or V are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list.

Year	FIRST SEMESTER		Hours	SECOND SEMESTER		Hours
FRESHMAN	ENGL 1113	Principles of English Composition (Core I)	3	ENGL 1213 or EXPO 1213	Principles of English Composition (Core I) or Expository Writing	3
	CHEM 1315	General Chemistry (Core II-Lab) ¹	5	CHEM 1435	General Chemistry II: Signature Course (Core II-Lab) ¹	5
	MATH 1914	Differential and Integral Calculus I (Core I) ²	4	MATH 2924	Differential and Integral Calculus II ²	4
	ENGR 1413	Pathways to Engineering Thinking (Core V-FYE) ³	3	PHYS 2514	General Physics for Engineering and Science Majors (Core II)	4
	CREDIT HOURS		15	CREDIT HOURS		16
SOPHOMORE	MATH 2934	Differential and Integral Calculus III ²	4	MATH 3113	Introduction to Ordinary Differential Equations	3
	PHYS 2524	General Physics for Engineering and Science Majors	4	CH E 2003	Chemical Engineering Computing/Statistics	3
	CH E 2033	Chemical Engineering Fundamentals	3	CH E 3113	Momentum, Heat and Mass Transfer I	3
	CHEM 3064	Organic Chemistry I	4	CHEM 3164	Organic Chemistry II	4
				CHEM 3423	Physical Chemistry I	3
CREDIT HOURS		15	CREDIT HOURS		16	
JUNIOR	CH E 3123	Momentum, Heat and Mass Transfer II	3	CH E 3333	Separation Processes	3
	CH E 3473	Chemical Engineering Thermodynamics	3	CH E 3432	Unit Operations Laboratory	2
	CH E 3723	Numerical Methods for Engineering Computation	3	CH E 4473	Kinetics	3
	ENGR 2002	Professional Responsibilities and Skills of Engineers and Scientists	2	HIST 1483 or HIST 1493	United States to 1865 (Core IV) or United States, 1865 to the Present	3
		Approved Elective, Social Science (Core III-SS) ³	3		Approved Elective, Western Culture (Core IV-WC) ³	3
CREDIT HOURS		14	CREDIT HOURS		17	
SENIOR	P SC 1113	American Federal Government (Core III)	3	CH E 3313	Structure and Properties of Materials	3
	CH E 4153	Process Dynamics and Control	3	CH E 4273	Advanced Process Design	3
	CH E 4253	Process Design & Safety	3	CH E 5971	Seminar in Chemical Engineering Research	1
	CH E 4262	Chemical Engineering Design Laboratory	2		Advanced Chemistry Elective chosen from approved list of courses maintained by department 5	3
		Technical Elective I ⁴	3		Technical Elective III ⁴	3
	Technical Elective II ⁴	3		Approved Elective, World Culture (Core IV-WDC) ³	3	
CREDIT HOURS		17	CREDIT HOURS		16	
FIFTH YEAR	CH E 5183	Graduate Transport Phenomena	3	CH E 5843	Advanced Chemical Engineering Thermodynamics	3
	CH E 5971	Seminar in Chemical Engineering Research	1	CH E 5971	Seminar in Chemical Engineering Research	1
	CH E 6723	Advanced Kinetics and Reaction Engineering	3	CH E 5980	Research for Master's Thesis	6
CREDIT HOURS		7	CREDIT HOURS		10	

¹ CHEM 1315 can be substituted with CHEM 1335 (Fall only) or CHEM 1425 (Fall only). CHEM 1435 can be substituted with CHEM 1415.

² MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

³ Transfer students will need to meet the requirements of the first-year experience course as well as the engineering transfer course. Please see your advisor for your specific enrollment.

⁴ One of the Technical Electives or the Advanced Chemistry elective must be CH E. Prior faculty approval is needed.