Chemical Engineering

University of Kansas

Johnson County Community College Transfer Program to the University of Kansas	School of Engineering
School of Engineering	785-864-3881 or 785-864-4965
Chemical Engineering, Bachelor of Science (BS)	kuengr@ku.edu
Academic Year 2025-2026	https://cpe.ku.edu/

Program Description

Students interested in KU's Engineering programs need to work closely with advisors at both JCCC and KU. This helps students stay on track and not prolong the time it takes to earn an engineering bachelor's degree from KU. Students are advised to complete the Kansas Systemwide General Education requirements, and the prerequisite courses listed on the transfer guide. Students are also encouraged to use the Reverse Transfer **(**https://www.jccc.edu/student-resources/transfer/**)option (if eligible) after transferring to KU.** Reverse Transfer **(**https://www.jccc.edu/student-resources/transfer/**)allows students to earn their associate degree from JCCC while working towards their bachelor's degree at KU.**

Chemical engineering has grown out of a combination of chemistry and engineering associated with industrial processes. Today, it possesses a body of knowledge used in the synthesis, design testing, scale-up, operation, control, and optimization of processes that change the physical state or composition of materials. Chemical engineers have played central roles in the industrial development of materials that have had major social influence, such as the production of fuels and lubricants, fertilizer, synthetic fibers, and plastics. They will be centrally involved in reducing the polluting effects of certain byproducts and cleaning up unwanted residues from previous processes. Within Chemical Engineering, students may also choose to complete an emphasis: Biomedical, Environmental, Materials Science, Premedical, or Petroleum.

Admission Requirements

- Admission to The University of Kansas is required, along with the following, for admission to the KU School of Engineering as a transfer student:
    1. 2.5+ cumulative college GPA
    2. “C” or better in MATH 125 Calculus I, or its direct equivalent (MATH 241 Calculus I* at JCCC)
    3. “C” or better in all math, science and engineering coursework
- The School of Engineering recommends that students apply for transfer admission to KU by May 1 for summer and fall; December 1 for spring.
- Admission is selective. Meeting minimum requirements does not guarantee admission.
- Timely completion of prerequisite courses is imperative due to tight sequencing of major courses. Consult KU catalog and seek KU advising early.
- The B.S. in Chemical Engineering is an ABET accredited program.
- A minimum of 128 credit hours is required for the B.S. in Chemical Engineering. Students that are exempt from ENGL 101 based on ACT or SAT test score do not have to make up the 3 credit hours with another course. This exemption results in the total hours required for the B.S. degree in Chemical Engineering to be 125 credit hours.
- A maximum of 75 hours may be transferred to KU from community colleges. Students should be aware that 45 junior/senior credit hours are required for completion of the bachelor’s degree; the last 30 hours of course work must be at KU; and community college courses do not transfer as junior/senior hours.
- Transfer students will have their applications to the School of Engineering evaluated on a case-by- case basis and must have a minimum GPA of 2.5 to be considered.
- Transfer credits must have a grade of “C” or higher to be applied toward the degree.
- Pass/Fail policy: not allowed for any courses in Chemical Engineering.
- Credit/No Credit policy: Credit/No Credit is not an option for any credits counting toward a chemical engineering degree.
- Chemical Engineering student must attain a cumulative GPA of at least 2.0 in C&PE courses taken at KU for graduation with a B.S. degree in Chemical Engineering.
- Students transferring to KU, that complete the General Education requirements required for the Associate of Arts (AA) (https://catalog.jccc.edu/degreerequirements/associate-arts/), Associate of Fine Arts (AFA) (https://catalog.jccc.edu/degreerequirements/associate-fine-arts/) or Associate of Science (AS) (https://catalog.jccc.edu/degreerequirements/associate-science/) degree from JCCC will be considered to have satisfied KU’s Core 34 general education curriculum.
- Students who transfer to KU, without completing the General Education requirements required for the Associate of Arts (AA) (https://catalog.jccc.edu/degreerequirements/associate-arts/), Associate of Fine Arts (AFA) (https://catalog.jccc.edu/degreerequirements/associate-fine-arts/) or Associate of Science (AS) (https://catalog.jccc.edu/degreerequirements/associate-science/) degree will have courses evaluated on a course-by-course basis toward meeting KU requirements. To learn more about courses that satisfy KU Core 34 Requirements (https://catalog.ku.edu/core34/) and KU CredTran (https://credittransfer.ku.edu/).
- Visit the KU Core 34 General Education guide (https://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fnextcatalog.jccc.edu%2Ftransfer-guides%2Fku%2Fku-general-education&data=05%7C02%7Cskhalif2%40jccc.edu%7C506a4b607ca34eaa00fb08de158ef1c2%7C15244239dcf245e7aefd127b69fc5438%7C1%7C0%7C638971900858599422%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=b2O9VaVq9VFjN8MJkWQ4YCl60oq5GZXnn69Vpa2sSL0%3D&reserved=0) for JCCC equivalents.

Program Requirements

Chemical Engineering General Option Requirements

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
KU Core 43					
Visit the KU Core 34 English (https://catalog.jccc.edu/transfer-guides/ku/ku-transfer-core34/) for JCCC equivalents.		6			

Visit the KU Core 34 Communications (https://catalog.jccc.edu/transfer-guides/ku/ku-transfer-core34/) for JCCC equivalents.		3			
Visit the KU Core 34 Core 34 Social and Behavioral Sciences (https://catalog.jccc.edu/transfer-guides/ku/ku-transfer-core34/) for JCCC equivalents. (Select two courses in two different disciplines)		6			
Visit the KU Core 34 Arts and Humanities (https://catalog.jccc.edu/transfer-guides/ku/ku-transfer-core34/) for JCCC equivalents. (Select two courses in two different disciplines)		6			
Visit the KU Core 34 US Culture (https://catalog.jccc.edu/transfer-guides/ku/ku-transfer-core34/) for JCCC equivalents.		3			
Visit the KU Core 34 Global Culture (https://catalog.jccc.edu/transfer-guides/ku/ku-transfer-core34/) for JCCC equivalents.		3			
Basic Sciences					
CHEM 124 & CHEM 125	General Chemistry I Lecture* and General Chemistry I Lab*	5	CHEM 130 General Chemistry I/Lab +		
CHEM 131 & CHEM 132	General Chemistry II Lecture* and General Chemistry II Lab*	5	CHEM 135 General Chemistry II/Lab+		
PHYS 220	Engineering Physics I*	5	PHSX 211 General Physics I+ AND PHSX 216 General Physics I Lab+		
PHYS 221	Engineering Physics II*	5	PHSX 212/236 General Physics II+/Lab+		
Advanced Chemistry					
CHEM 220	Organic Chemistry I*	5	CHEM 330 Organic Chemistry I		
Mathematics					
Select one of the following:					
MATH 241	Calculus I* # OR	5	MATH 125 Calculus I+		
MATH 231	Business and Applied Calculus I* AND +	3	MATH 115	Calculus I	3
MATH 232	Business and Applied Calculus II* +	3	MATH 116	Calculus II	3
MATH 242	Calculus II* +	5	MATH 126 Calculus II+		
MATH 243	Calculus III* +	5	MATH 127 Calculus III+		
MATH 246	Elementary Linear Algebra* +	3	MATH 290	Elementary Linear Algebra	2
MATH 254	Differential Equations* +	4	MATH 220	Analytic Geometry Calc I	4
Engineering Electives					
ENGR 251	Statics*	3	CE 201 Statics		
Select one of the following:					

ENGR 254	Dynamics*	3	CE 250 Dynamics		
ENGR 254	Dynamics*	3	ME 320 Dynamics		
Select one of the following:					
CS 200	Concepts of Programming Algorithms Using C++*	4	EECS 268	Programming II	4
CS 202	Concepts of Programming Algorithms using Python*	4	EECS 168 & EECS 268	Programming I and Programming II	4
CS 205	Concepts of Programming Algorithms using Java*	4	EECS 268	Programming II	4
Select one of the following:					
CS 250	Basic Data Structures using C++*	4	EECS 268 Programming II		
CS 252	Basic Data Structures Using Python*	4	EECS 268 Programming II		
CS 255	Basic Data Structures Using Java*	4	EECS 268 Programming II		
DRAF 129	Interpreting Architectural Drawings	2	ARCE 217 Computer-Assisted Building Design		
Select one of the following:					
DRAF 143	Introduction to BIM Building Information Modeling*	2	ARCE 217 Computer-Assisted Building Design		
ENGR 131	Engineering Graphics I:AutoCAD*	4	ARCE 217 Computer-Assisted Building Design		
Advanced Science Electives					
BIOL 135	Principles of Cell and Molecular Biology	4	BIOL 150 Prin. of Molecular Cellular Biology AND BIOL 154 Intro Biology Lab for Stem Majors		
BIOL 150	Biology of Organisms*	5	BIOL 152 Principles of Organismal Biology		
GEOS 130	General Geology	5	GEOL 101 The Way the Earth Works AND GEOL 103 Geology Fundamentals Lab		
CHEM 221	Organic Chemistry II*	5	CHEM 335 Organic Chemistry II AND CHEM 336 Organic Chemistry II Lab		

Chemical Engineering Concentrations

Within Chemical Engineering, students may also choose to complete a concentration: Biomedical, Data Science, Environmental, Material Science, Petroleum, or Premedical. Students completing a concentration are required to satisfy all the requirements for the Bachelor of Science degree in Chemical Engineering general option. In addition, each concentration has specific requirements for some of the engineering and advanced science electives. Note: Environmental Concentration courses will be taken at KU.

Biomedical Concentration

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
BIOL 135	Principles of Cell and Molecular Biology (counts towards Advanced Science elective)	4	Prin. of Molecular Cellular Biology AND BIOL 154 Intro Biology Lab for Stem Majors		

Data Science Concentration

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
Select one of the following:					
CS 200	Concepts of Programming Algorithms Using C++*	4	EECS 168	Programming I	4
CS 202	Concepts of Programming Algorithms using Python*	4	EECS 168 & EECS 268	Programming I and Programming II	4
CS 205	Concepts of Programming Algorithms using Java*	4	EECS 168	Programming I	4
Select one of the following:					
CS 250	Basic Data Structures using C++*	4	EECS 268	Programming II	4
CS 252	Basic Data Structures Using Python*	4	EECS 268	Programming II	4
CS 255	Basic Data Structures Using Java*	4	EECS 268	Programming II	4

Material Science Concentration

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
BIOL 135	Principles of Cell and Molecular Biology (counts towards Advanced Science elective)	4	BIOL 150 Prin. of Molecular Cellular Biology AND BIOL 154 Intro Biology Lab for Stem Majors		

Petroleum Concentration

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
GEOS 130	General Geology (counts towards Advanced Science requirement)	5	GEOL 101 & GEOL 103	The Way The Earth Works and Geology Fundamentals Lab	5

Premedical Concentration

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
BIOL 135	Principles of Cell and Molecular Biology #(counts towards Advanced Science elective)	4	BIOL 150 Prin. of Molecular Cellular Biology AND BIOL 154 Intro Biology Lab for Stem Majors		
BIOL 150	Biology of Organisms* (counts towards Advanced Science elective)	5	BIOL 152	Prin of Organismal Biology	3
CHEM 221	Organic Chemistry II* (counts towards Engineering Elective)	5	CHEM 335	Organic Chemistry II	3

The following courses may be required for admission into specific medical schools or be recommended for the MCAT.

These classes are recommended but not required:

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
BIOL 135	Principles of Cell and Molecular Biology #	4	BIOL 150 Prin. of Molecular Cellular Biology AND BIOL 154 Intro Biology Lab for Stem Majors		
CHEM 220	Organic Chemistry I*	5	CHEM 331	Organic Chemistry I Laboratory	2
PSYC 130	Introduction to Psychology	3	PSYC 104	General Psychology	3
SOC 122	Introduction to Sociology	3	SOC 104	Elements of Sociology	3

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* JCCC course has a prerequisite or corequisite.
\+ Must earn a grade of “C” or better

Last Approved Tue Oct 28 21:18:27 2025