



JOHNSON COUNTY COMMUNITY COLLEGE
Transfer Program to Kansas State University
Biomedical Engineering, BS
Computer Engineering, BS
Electrical Engineering, BS
2024-25 Catalog

Contact: College of Engineering Student Services
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engg.ksu.edu/academics/undergraduate/

Biomedical engineering applies engineering principles to design challenges faced by the medical and life science communities. Graduates from the biomedical engineering program can anticipate designing medical devices and computer software for health care applications. Two areas of emphasis are available: sensors and devices, and computation.

The **computer engineering** curriculum establishes a theoretical basis for computer components in circuits, electronics, electromagnetics, digital systems, and microprocessors and for software in programming languages, algorithms, data structures and operating systems. A strong laboratory experience stressing digital and microprocessor system design and implementation is included.

The **electrical engineering** curriculum establishes a theoretical basis in circuits, electronics, electromagnetics, energy conversion and controls. It includes a strong laboratory experience stressing system design and implementation. Three areas of emphasis are available: bioengineering, electronics and communications, and power systems.

- **Admissions** - Applicants must first be admitted to Kansas State University either as an incoming freshman or a transfer student. To apply for admission to Kansas State University, complete an application online at <https://www.k-state.edu/admissions/> and have official transcripts from all previous colleges sent directly to the Office of Admissions, Kansas State University, 119 Anderson Hall, Manhattan, KS, 66505-0102, or faxed to 785-532-6393 or emailed via electronic transcript service to k-state@k-state.edu. For students transferring to K-State with fewer than 24 credit hours, please also send final high school transcript and ACT or SAT scores.
Admission to the College of Engineering is selective. Declaration of the desired curriculum in the College of Engineering does not guarantee admission into the degree program selected. For current admission criteria please refer to the College of Engineering website at <https://engg.k-state.edu/academics/admissions/>
- Students not admitted to the College of Engineering can enter the university Open Option program or another available college/degree program. These students can still apply to enter the College of Engineering at a later date after they have completed one full-time semester at K-State as an internal transfer student.
- **Grade requirements** - In addition to the university standards and policies for grades, the College of Engineering has the following standards:
- **Curricula grades** - See the individual engineering department sections of the [K-State Undergraduate Catalog](#) for the grade requirements for their curriculum and degree. All courses applied to degree requirements require a letter grade except for 0-credit hour assembly courses.
- **DirectLink** - an initiative between Kansas community colleges and Kansas State University to provide future transfer students with support as they prepare to make the transition to K-State. Click [here](#) to sign up for DirectLink.
- **Transferability of Courses** - Many of the fundamental courses required for a degree in engineering may be obtained through pre-engineering programs at other four-year institutions or at community colleges. However, there are differences among the curricula; students electing this route should work closely with their pre-engineering advisors. **Students should be aware that only half of the total Bachelor of Science degree credits may be earned at a two-year school, at least 30 credit hours must be K-State credit hours, and 20 of the last 30 must be K-State credit hours.** Only courses with a grade of A, B or C will be applicable toward engineering degree requirements. *The Cr and D grades are not acceptable for transfer into College of Engineering programs.*
- Some K-State courses in the curriculum do not have an equivalent course at all other institutions. Please see the [K-State Undergraduate Catalog](#) for details and lists of courses. To learn more about academic credit for prior learning and advanced credit, please see K-State [Advanced Standing](#).
- To determine which courses at a particular college or university will substitute for courses at K-State, access [Transfer Equivalency](#) on the K-State website.
- Effective Fall 2024: Students transferring to K-State, with an AA, AFA or AS degree from JCCC will be considered to have satisfied K-State Core general education curriculum.
- Effective Fall 2024: Students who transfer to K-State, without completing AA, AFA or AS degree will have courses evaluated on a course-by-course basis toward meeting K-State requirements. To learn more about courses that satisfy K-State Core requirements visit: <https://www.k-state.edu/provost/kstate-core/index.html> and <https://www.k-state.edu/admissions/undergrad/manhattan/apply/transfer/course-search.html>
- K-State Core General Education guide can be found [here](#).

Biomedical Engineering (BME) (B.S.) 128 hours required for the KSU B.S. degree

(No more than half can be completed at JCCC - See Transferability of Courses on page 1)

Recommended JCCC Courses:

KSU Courses	Hrs	JCCC Courses	Hrs
K-State Core			
English (two courses)	6	See KSU Core General Education guide	6
Communications COMM 106 Public Speaking	3	COMS 121 Public Speaking	3
Math and Statistics MATH 220 Analytic Geometry and Calculus I	4	MATH 241 Calculus I*	5
Natural and Physical Sciences PHYS 213 Engineering Physics I	5	PHYS 220 Engineering Physics I*	5
Social and Behavioral Sciences (Select two courses in two subject areas)	6	See KSU Core General Education guide	6
Arts and Humanities (Select two courses in two subject areas)	6	See KSU Core General Education guide	6
Free Electives (Any 100 or 200 level courses may apply)	6	See KSU Core General Education guide	6
Program Requirements			
BIOL 198 Principles of Biology	4	BIOL 135 Principles of Cell and Molecular Biology	4
CHM 210 Chemistry I	4	CHEM 124/125 General Chemistry I*/Lab*	4/1
CHM 230 Chemistry II	4	CHEM 131/132 General Chemistry II Lecture*/Lab*	4/1
CIS 209 Computer Programming for Engineers	3	CS 200 Concepts of Programming Algorithms Using C++* OR CS 235 Object-Oriented Programming Using C++*	4 4
DEN 160 College of Engineering Orientation AND DEN 161 Engineering Problem Solving	1 1	ENGR 121 Engineering Orientation	2
ME 212 Engineering Graphics	2	ENGR 131 Engineering Graphics I: AutoCAD*	4
MATH 221 Analytic Geometry and Calculus II	4	MATH 242 Calculus II*	5
MATH 222 Analytic Geometry & Calculus III	4	MATH 243 Calculus III*	5
MATH 340 Elementary Differential Equations	4	MATH 254 Differential Equations*	4
PHYS 214 Engineering Physics II	5	PHYS 221 Engineering Physics II*	5

* JCCC course has a prerequisite or corequisite.

Computer Engineering (CMPEN) (B.S) 121 hours required for the K-State B.S. degree

(No more than half can be completed at JCCC - See Transferability of Courses on page 1)

Recommended JCCC Courses:

KSU Courses	Hrs	JCCC Courses	Hrs
K-State Core			
English (two courses)	6	See KSU Core General Education guide	6
Communications COMM 106 Public Speaking	3	COMS 121 Public Speaking	3
Math and Statistics MATH 220 Analytic Geometry and Calculus I	4	MATH 241 Calculus I*	5
Natural and Physical Sciences PHYS 213 Engineering Physics I	5	PHYS 220 Engineering Physics I*	5
Social and Behavioral Sciences (Select two courses in two subject areas)	6	See KSU Core General Education guide	6
Arts and Humanities (Select two courses in two subject areas)	6	See KSU Core General Education guide	6
Free Electives (Any 100 or 200 level courses may apply)	6	See KSU Core General Education guide	6
Program Requirements			
CIS 116 Introduction to Programming	1	CIS 142 Beginning Programming using Python	4
CIS 200 Programming Fundamentals	4	CS 201 Concepts of Programming Algorithms Using C#* OR CS 205 Concepts of Programming Algorithms using Java* OR CS 236 Object-Oriented Programming Using C#*	4 4 4
ECE 241 Introduction to Electrical and Computer Engineering	3	ELEC 227 Digital Electronics II*	4
DEN 160 College of Engineering Orientation AND DEN 161 Engineering Problem Solving	1 1	ENGR 121 Engineering Orientation	2
MATH 221 Analytic Geometry and Calculus II	4	MATH 242 Calculus II*	5
MATH 222 Analytic Geometry & Calculus III	4	MATH 243 Calculus III*	5
MATH 340 Elementary Differential Equations	4	MATH 254 Differential Equations*	4
PHYS 214 Engineering Physics II	5	PHYS 221 Engineering Physics II*	5

* JCCC course has a prerequisite or corequisite.

Electrical Engineering (EE) (B.S.) 123 hours required for the K-State B.S. degree

(No more than half can be completed at JCCC - See Transferability of Courses on page 1)

Recommended JCCC Courses:

KSU Courses	Hrs	JCCC Courses	Hrs
K-State Core			
English (two courses)	6	See KSU Core General Education guide	6
Communications COMM 106 Public Speaking	3	COMS 121 Public Speaking	3
Math and Statistics MATH 220 Analytic Geometry and Calculus I	4	MATH 241 Calculus I*	5
Natural and Physical Sciences PHYS 213 Engineering Physics I	5	PHYS 220 Engineering Physics I*	5
Social and Behavioral Sciences (Select two courses in two subject areas)	6	See KSU Core General Education guide	6
Arts and Humanities (Select two courses in two subject areas)	6	See KSU Core General Education guide	6
Free Electives (Any 100 or 200 level courses may apply)	6	See KSU Core General Education guide	6
Program Requirements			
CHM 210 Chemistry I	4	CHEM 124/125 General Chemistry I*/Lab*	4/1
CIS 209 Computer Programming for Engineers	3	CS 200 Concepts of Programming Algorithms Using C++* OR CS 235 Object-Oriented Programming Using C++*	4 4
ECE 241 Introduction to Electrical and Computer Engineering	3	ELEC 227 Digital Electronics II*	4
DEN 160 College of Engineering Orientation AND DEN 161 Engineering Problem Solving	1 1	ENGR 121 Engineering Orientation	2
MATH 221 Analytic Geometry and Calculus II	4	MATH 242 Calculus II*	5
MATH 222 Analytic Geometry & Calculus III	4	MATH 243 Calculus III*	5
MATH 340 Elementary Differential Equations	4	MATH 254 Differential Equations*	4
PHYS 214 Engineering Physics II	5	PHYS 221 Engineering Physics II*	5

* JCCC course has a prerequisite or corequisite.

It is the STUDENT'S RESPONSIBILITY to check for updates to all transfer information. This transfer guide is provided as a service and is updated as needed. Degree requirements at the four-year colleges are subject to change by those institutions. To ensure you have the most accurate up to date information about the program, it is imperative you meet with an advisor at the transfer institution.