Mechanical Engineering, BS, Nuclear Engineering, BS

Kansas State University

Johnson County Community College Transfer Program to the Kansas State University	College of Engineering Student Services
	785-532-5592
Mechanical Engineering (BS), Nuclear Engineering, BS	engineering@k-state.edu
Academic Year 2025-2026	engg.ksu.edu/academics/undergraduate/

Program Description

Mechanical engineering is a broad profession that traditionally comprises three primary sub-fields: energy, mechanisms and machinery, and controls. The work done by mechanical engineers includes the design, construction and use of systems for the conversion of energy available from natural sources (water, fossil fuels, nuclear fuels and solar radiation) to other forms of useful energy. These systems are used for transportation, heat, light, power; design and production of machines to lighten the burden of servile human work and to do work otherwise beyond human capability; processing of materials into useful products; and manufacturing. Mechanical engineers use creative planning, development and operation of systems using energy, machines and resources. A nuclear engineering option is available within the Bachelor of Science in Mechanical Engineering degree program.

Nuclear engineering - Students pursuing a Bachelor of Science in nuclear engineering will gain a foundational understanding of nuclear energy, reactor design and options, radiation shielding, nuclear/radiological regulations, and radiation sensing and instrumentation.

Admissions

- **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 (https://www.k-state.edu/admissions/) online at 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. Visit the College of Engineering (https://engg.k-state.edu/academics/admissions/) for current admission information.
- Students not admitted to the College of Engineering can enter the university Exploratory Studies 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. Visit DirectLink (https://apply2.ksu.edu/register/directlink/) to register.
- **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 no more than seventy-five hours may be transferred as credit from a community college, at least 30 credit hours must be K-State credit hours, and 15 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. Visit the K-State Undergraduate Catalog (https://catalog.k-state.edu/) for details and lists of courses. To learn more about academic credit for prior learning and advanced credit, please visit K-State Advanced Standing (https://www.k-state.edu/admissions/undergrad/manhattan/apply/policies-requirements/advanced-standing-credit/) credit options.
- To determine which courses at a particular college or university will substitute for courses at K-State, visit Transfer Equivalency (https://go.k-state.edu/equiv/) on the K-State website.
- Students transferring to KSU, 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 KSU's core general education curriculum.
- Students who transfer to KSU, 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 KSU requirements. To learn more about courses that satisfy KSU Core Requirements (https://catalog.k-state.edu/content.php?catoid=60&navoid=12133) and KSU Transfer Equivalency Tool (https://www.k-state.edu/admissions/undergrad/manhattan/apply/transfer/tools/course-search.html).
- Visit the KSU Core General Education Guide (https://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fnextcatalog.jccc.edu%2Ftransfer-guides%2Fk-state%2Fk-state-general-education&data=05%7C02%7Cskhalif2%40jccc.edu%7C3bbbe8fc84564328cf7008de1320415e%7C15244239dcf245e7aefd127b69fc5438%7C1%7C0%7C638969226426376370%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=p6L6HF0HBpB3aL3uFUWnztw8qzBp%2FiSMV2qlS%2FvLwxE%3D&reserved=0) for JCCC equivalents.

Program Requirements

Mechanical Engineering (ME) (B.S.) 125 hours required for the K-State B.S. degree

The curriculum for this major assumes students enter college prepared to take Calculus.

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
K-State Core					
English (two courses) Visit the KSU Core General Education guide for JCCC equivalents.					
Communications Visit the KSU Core General Education guide for JCCC equivalents.					
Math and Statistics					
MATH 241	Calculus I*	5	MATH 220	Analytic Geometry Calc I	4
Natural and Physical Sciences					
PHYS 220	Engineering Physics I*	5	PHYS 213	Engineering Physics I	5
Social and Behavioral Sciences (Select two courses in two subject areas) Visit the KSU Core General Education guide for JCCC equivalents.					
Arts and Humanities (Select two courses in two subject areas) Visit the KSU Core General Education guide for JCCC equivalents.					
Free Electives (Any 100 or 200 level courses may apply) Visit the KSU Core General Education guide for JCCC equivalents.					

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
Program Requirements					
CHEM 124 & CHEM 125	General Chemistry I Lecture* and General Chemistry I Lab*	4	CHM 210 & CHM 220	Chemistry I and Honors Chemistry I	5
ENGR 121	Engineering Orientation	2	DEN 160 College of Engineering Orientation AND DEN 161 Engineering Problem Solving		
ENGR 131	Engineering Graphics I:AutoCAD*	4	ME 212	Basic Engr Thermody	3
ENGR 251	Statics*	3	CE 333	Statics	3
ENGR 254	Dynamics*	3	ME 512	Dynamics	3
ENGR 284	Thermodynamics*	4	ME 513 Thermodynamics I		
MATH 242	Calculus II*	5	MATH 221	Analytic Geometry Calc II	4
MATH 243	Calculus III*	5	MATH 222 Analytic Geometry Calculus III		
MATH 254	Differential Equations*	4	MATH 340 Elementary Differential Equations		
PHYS 221	Engineering Physics II*	5	PHYS 214	Engineering Physics II	5

* JCCC course has a prerequisite or corequisite.

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

The curriculum for this major assumes students enter college prepared to take Calculus.

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
K-State Core					
English (two courses) Visit the KSU Core General Education guide for JCCC equivalents.					
Communications Visit the KSU Core General Education guide for JCCC equivalents.					
Math and Statistics					
MATH 241	Calculus I*	5	MATH 220	Analytic Geometry Calc I	4
Natural and Physical Sciences					
PHYS 220	Engineering Physics I*	5	PHYS 213	Engineering Physics I	5
Social and Behavioral Sciences (Select two courses in two subject areas) Visit the KSU Core General Education guide for JCCC equivalents.					
Arts and Humanities (Select two courses in two subject areas) Visit the KSU Core General Education guide for JCCC equivalents.					
Free Electives (Any 100 or 200 level courses may apply) Visit the KSU Core General Education guide for JCCC equivalents.					

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
Program Requirements					
CHEM 124 & CHEM 125	General Chemistry I Lecture* and General Chemistry I Lab*	4	CHM 210 & CHM 220	Chemistry I and Honors Chemistry I	5
ENGR 121	Engineering Orientation	2	DEN 160 College of Engineering Orientation AND DEN 161 Engineering Problem Solving		
ENGR 131	Engineering Graphics I:AutoCAD*	4	ME 212	Basic Engr Thermody	3
ENGR 251	Statics*	3	CE 333	Statics	3
ENGR 254	Dynamics*	3	ME 512	Dynamics	3
ENGR 284	Thermodynamics*	4	ME 513 Thermodynamics I		
MATH 242	Calculus II*	5	MATH 221	Analytic Geometry Calc II	4
MATH 243	Calculus III*	5	MATH 222	Analytic Geometry Calc III	4
MATH 254	Differential Equations*	4	MATH 340	Elementary Differential Equatn	4
PHYS 221	Engineering Physics II*	5	PHYS 214	Engineering Physics II	5

* JCCC course has a prerequisite or corequisite.

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