

Mechanical Engineering

University of Missouri - Columbia

Johnson County Community College Transfer Program to the University of Missouri - Columbia	Engineering Advising Office
College of Engineering	(573) 884-6961
Mechanical Engineering, BSME	muengradvising@missouri.edu
Academic Year 2025-2026	https://catalog.missouri.edu/collegeofengineering/mechanicalengineering/bsme-mechanicalengineering/

Program Description

The mechanical engineering curriculum provides students a foundation in mathematics, the basic sciences, and engineering. Students take core courses in the mechanical sciences (dynamics, engineering materials, manufacturing, dynamic systems and control, and machine element design) and the thermal-fluid sciences (thermodynamics, fluid mechanics, and heat transfer). In addition, students obtain laboratory experience through three lab courses focused on instrumentation and measurements, materials and manufacturing, and thermal-fluid systems. The Bachelor of Science in Mechanical Engineering (BSME) prepares students for employment in industry or government or for further study toward other degrees such as the JD, MD, MS, and PhD.

Major Program Requirements - The MAE curriculum allows students to transfer among departments during the first two years. Students concentrate on departmental requirements at the beginning of the junior year. The senior year includes five MAE electives that allow students to develop individual programs of study. This flexibility enables students to complete a traditional program.

Experience in design is distributed throughout the required courses in the curriculum and culminates in the senior capstone design course. The capstone design experience integrates earlier technical work with economic, safety, ethical, and environmental considerations. The projects are primarily obtained from industrial or private business clients. The presentations of project results are made to a review panel consisting of members of the faculty, the MAE Industrial Advisory Council, and representatives of the client firms.

In addition to the major core requirements, students must complete all University graduation requirements (<https://catalog.missouri.edu/academicdegreerequirements/universityrequirements/>) including University general education (<https://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/>), as well as all degree and college or school requirements. See course descriptions for prerequisites.

Visit the JCCC/MU General Education guide (<https://www.jccc.edu/student-resources/transfer/files/transfer-guides/mu-gen-ed-reqs.pdf>) for equivalent courses.

Transfer Students -

Students wishing to transfer to MU from an accredited college or university are subject to University regulations described in this catalog. The College of Engineering cooperates with many colleges through articulation agreements that help students transfer to MU with maximum ease and minimum loss of credits. A student may contact the College of Engineering Admissions Office to determine if their home institution participates in an agreement with the College of Engineering. Students who have completed all courses specified in the articulation agreement will be admitted into their desired degree program. All other transfer students are admitted on program discretion. Typically, transfer students with freshmen status must satisfy the same requirements as students entering college for the first time. Other students are admitted only after review of their transcript.

To be recommended for a BS degree from the College of Engineering, a student transferring from an accredited institution must complete at least 30 upper-level credits in the degree program at a UM System campus. At least 21 of the 30 credits must be upper-level engineering courses approved by the department awarding the degree. A student transferring with senior standing from another UM System campus must complete the last 15 credits in residence on the campus where the degree program is located. Twelve of these 15 credits must be in engineering and approved by the department awarding the degree.

Any student whose enrollment in any college-level academic program resulted in dismissal, departure or who is on probation will not be admitted to the College of Engineering.

International Admission -

International undergraduate students interested in studying in the College of Engineering can visit the MU Office of International Admissions (<https://admissions.missouri.edu/apply/international/>) for information on academic and English language admission requirements. Any questions regarding international student admissions (<https://catalog.jccc.edu/archives/2025-26/transferadmin/192/inter@missouri.edu>) can be directed to that office.

GPA Requirements for Graduation from the College of Engineering:

- GPA of record of at least 2.0
- GPA of at least 2.0 in all engineering courses offered by one of the four campuses of the UM System. "Engineering courses" include all courses that are offered through the College of Engineering or its equivalent on the four campuses, or that have "Engineering" in the curricular designator. Only the last grade in a repeated course will be used in the calculation.

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 information about the program, you must meet with an advisor at the transfer institution.

Mechanical Engineering Transfer Requirements:

Course Code Code	Course Title Title	Course Hours	Transfer Code Hours	Transfer Title	Transfer Hours
CHEM 124 & CHEM 125	General Chemistry I Lecture* and General Chemistry I Lab*	4	CHEM 1400 & CHEM 1401	College Chemistry I and College Chemistry I Lab	1
ENGR 121	Engineering Orientation	2	ENGINR 1000	Introduction to Engineering	1
ENGR 251	Statics*	3	ENGINR 1200	Statics Elem Strength of Mat	3
ENGR 254	Dynamics*	3	MAE 2600	Dynamics	3
ENGR 284	Thermodynamics*	4	MAE 2300		
MATH 241	Calculus I*	5	MATH 1500 & MATH 1500H	Analytic Geometry/ Calculus I and Analytic Geometry Calc I	5
MATH 242	Calculus II*	5	MATH 1700	Calculus II	5
MATH 243	Calculus III*	5	MATH 2300	Calculus III	3
MATH 246	Elementary Linear Algebra*	3	Tech Elective – ISE 2210		
MATH 254	Differential Equations*	4	MATH 4100	Differential Equations	3



PHYS 220	Engineering Physics I*	5	PHYSCS 2750	University Physics I	5
PHYS 221	Engineering Physics II*	5	PHYSCS 2760	University Physics	5

* JCCC course has a prerequisite or corequisite.

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