



Johnson County Community College
Transfer Program to University of Missouri
Mechanical Engineering, BSME
2024-25 Catalog

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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 or create their own with special emphasis on areas such as materials, manufacturing, thermal-fluid systems, dynamics and control, or aerospace. Students are also required to complete one 3-hour cultural awareness course which is selected from an approved cultural awareness course list, created and maintained by the College of Engineering or which meets the Arts and Science (A&S) diversity intensive (DI) requirement.

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 University general education and graduation requirements, the Department of Mechanical and Aerospace Engineering requires the courses below.

Refer to [JCCC/MU General Education guide](#) 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 find information on academic and English language admission requirements on the website of the [MU Office of International Admissions](#). Any questions regarding international student admissions can be directed to that office at inter@missouri.edu.

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.

MU Requirements	Hrs	JCCC Equivalents	Hrs
Other major core requirement courses:			
MATH 1500 Analytic Geometry and Calculus I	5	MATH 241 Calculus I*	5
MATH 1700 Calculus II	5	MATH 242 Calculus II*	5
MATH 2300 Calculus III	3	MATH 243 Calculus III*	5
MATH 4100 Differential Equations	3	MATH 254 Differential Equations*	4
PHYSCS 2750 University Physics I	5	PHYS 220 Engineering Physics I*	5
PHYSCS 2760 University Physics II	5	PHYS 221 Engineering Physics II*	5
CHEM 1400/1401 College Chemistry I/Lab	4	CHEM 124/125 General Chemistry I Lecture*Lab*	4/1
ENGINR 1000 Introduction to Engineering	1	ENGR 121 Engineering Orientation	2
ENGINR 1200 Statics and Elementary Strength of Materials	3	ENGR 251 Statics*	3
MAE 2600 Dynamics	3	ENGR 254 Dynamics*	3

* 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.