

College of Engineering

Administration

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The University of Missouri College of Engineering recruits high-caliber students and offers research experiences in laboratories, a wide variety of opportunities to develop leadership skills through more than 50 College-supported student organizations, and supports interdisciplinary collaboration through our many campus partnerships. The vision of the College of Engineering at the University of Missouri is to be a nationally-recognized college of engineering, educating engineering leaders and designing innovative solutions that make the world a better place.

With ten undergraduate degree programs, eight master's programs and seven doctoral programs, the College of Engineering offers opportunities in a wide variety of engineering fields.

Mission

The mission of the College of Engineering at the University of Missouri is to educate engineers, create leaders, advance technology, and develop entrepreneurs in a research and interdisciplinary environment, resulting in well-informed citizens, economic development, job creation, and an improved standard of living for Missouri and beyond. This is accomplished through a focus on four core values: Integrity, Accountability, Collaboration and Excellence.

Our mission is supported by the pursuit of the Missouri Compacts:

- Student Success
- Excellence in Research and Creative Works
- Excellence in Engagement and Outreach
- Inclusive Excellence
- Excellence in Planning, Operations, and Stewardship

Undergraduate

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The MU College of Engineering is committed to a longstanding tradition of educating future engineering leaders. Here, students are inspired and challenged. Students work, learn, research and create in an atmosphere where innovation, collaboration and finding ways to rise above challenges are more than aspirations — they are simply how we operate.

Admissions

Freshman Admission to Engineering

Entering freshmen are expected to have completed 17 units of approved high school course work (in grades 9-12), including 4 units in English, 4 in mathematics and 3 in science with laboratory. Mathematics should include 2 units of algebra, 1 unit of plane and solid geometry (combination course), and 1/2 unit of trigonometry. Additional senior

mathematics is recommended. The College of Engineering has two levels of admissions: Direct Program Admits and Pre-Engineering Admits.

Direct Program Admits

For direct admission to one of the College of Engineering degree programs (excluding Information Technology), the applicant must meet the qualifications listed below.

- ACT-Math of at least 26 AND
- ACT-Composite of at least 26 OR High school class rank in the top 25 percent

Students pursuing Information Technology must meet MU's General Admission Standard to be considered Direct Program Admits.

Pre-Engineering Program

Freshmen who do not meet the criteria for Direct Program Admit are admitted into the Pre-Engineering Program. Pre-Engineering students are encouraged to utilize additional support systems such as transition and onboarding programming for entering students, major and career exploration programming and advising, tutoring support, and early alert outreach.

Pre-Engineering students in good academic standing will be admitted to their desired degree programs when they meet the following requirements:

Electrical Engineering, Computer Engineering, or Computer Science: C- or better in MATH 1500, C or better in CMP_SC 1050

Chemical Engineering: C- or better in MATH 1500 and CHEM 1320.

Biological Engineering, Biomedical Engineering, Civil and Environmental Engineering, Industrial and Manufacturing Systems Engineering: C- or better in MATH 1500, MATH 1700, CHEM 1320, and PHYSICS 2750.

Mechanical and Aerospace Engineering: C or better in MATH 1500, MATH 1700, CHEM 1320, and PHYSICS 2750.

Transfer Students

Students wishing to transfer to MU from an accredited college or university are subject to University regulations described in this catalog. The MU 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 same requirements as pre-engineering students. Other students are admitted only after review of 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 (<https://admissions.missouri.edu/international-students/>) International Admissions.

Any questions regarding international student admissions can be directed to that office at inter@missouri.edu.

Graduation Requirements

The curriculum provides a solid foundation of mathematics and physical sciences followed by the application of these sciences in engineering specialties. The balance of the curriculum encompasses communication skills, English, social sciences and humanities courses.

Students should access the engineering web site (<http://engineering.missouri.edu>) for details regarding social and behavioral sciences and humanities and fine arts requirements.

In addition to the University's general education and graduation requirements, the departments in the College of Engineering may require further specific courses to better equip students to perform in their chosen fields of study.

While many students complete the BS degree program in four years, some may find it advisable to extend the curriculum in order to carry lighter semester loads, add preparatory courses or compensate for part-time work.

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.

Academic Regulations

Departmental Honors

The college maintains an undergraduate honors program to further challenge those who have established a minimum GPA of 3.0 at the beginning of the junior year. A comparable grade point average is required of transfer students. The program leads to an undergraduate honors thesis on a research or advanced design project, provides for additional curricula flexibility and contains features that ease the transition to graduate school.

Opportunities available to honors students include:

- More personal attention from an honors advisor
- Independent study or undergraduate research with a faculty member whose specialty interests the honors candidate

A student who successfully completes the engineering honors program, including the independent project, will be designated an "Honors Scholar

in Engineering." Interested students should contact their departmental office.

Qualified engineering students are also welcome and encouraged to join the programs of the Honors College and may enroll in various honors courses and honors sections of regular courses.

Courses in Basic Skills

No basic skills courses may be taken to fulfill graduation requirements.

Curriculum of Record

The curriculum of record is the curriculum a student must satisfy to meet graduation requirements. For students who maintain continuous, full-time enrollment, the curriculum of record is the one approved by the College of Engineering at the time the student achieves upper-division status in the discipline of choice. For others, the curriculum of record is decided by the department faculty.

Academic Probation and Dismissal

1. A student whose term and cumulative UM GPA are 2.0 or higher is in good academic standing. A "term" is defined as a semester or summer session.
2. A student will be placed on academic probation if while in good academic standing the student has a term GPA less than 2.0 but equal to or greater than 1.0.
 - While on academic probation, a student must enroll in and complete each semester at MU at least 12 credits of course work necessary for the degree. Courses taken through MU's Missouri Online (self-paced) count as part of these 12 credits. Part-time students must enroll in at least as many credits each semester as the college rules governing part time enrollment.
 - A student will be removed from probation at the end of the term when the term and cumulative GPA are 2.0 or higher, provided the student completed 12 or more hours applicable toward the degree. Students who work part time may also be removed from probation with fewer completed hours. (9 credit hours completed if over 20 work hours per week, 6 credit hours if over 30 hours per week. Must provide proof.)
 - A student will be continued on probation if while on probation the student has a term GPA greater than or equal to 2.0, but whose cumulative GPA is below 2.0.
3. A student will be dismissed from the College of Engineering if the student:
 - Receives a term GPA of less than 1.0.
 - Receives a term GPA of less than 2.0 while on probation.
4. Readmission:
 - Students who are dismissed from the College of Engineering and who wish to appeal their case for continuation must write an appeal letter and submit it to the academic appeals committee.
 - If the appeals committee allows a student to re-enroll on final probation, it may set conditions such as courses to be taken, minimum grades, total hours, etc to which the student must adhere.
 - A student who has been dismissed for academic reasons may be readmitted upon a successful appeal to the Academic Appeals Committee of the College of Engineering.
 - Similarly, students who wish to re-enroll in the College of Engineering after having been out of school as a result of a dismissal must write a letter of appeal to the College

of Engineering Academic Appeals Committee requesting readmission.

- Letters of appeal may be addressed to: Engineering Academic Appeals Committee, W1025 Lafferre Hall, University of Missouri, Columbia, MO 65211. A personal visit with the director of undergraduate studies of the student's department and advisor before appealing by letter is recommended and often helpful, both to the student and to the committee.
 - One of the primary objectives of the appeals committee is evaluate indicators of the likelihood of future success of the student. Accordingly, any appeal letter should include an explanation for past poor performance and reason for expecting better outcomes in the future.
5. A student who is dismissed while on final probation will normally be ineligible for readmission.

Satisfactory/Unsatisfactory Grading Option

Under Satisfactory/Unsatisfactory (S/U) grading, an S is assigned for a grade in the A, B or C range, and a U is assigned for a grade in the D range or for an F. Neither an S nor a U will be calculated into a student's grade point average.

A student enrolled in the College of Engineering may not take any math, science or engineering course that counts toward degree requirements under the S/U grading option, unless the course is only offered S/U. In addition, any course specifically required (by course number) in the curriculum may not be taken S/U.

This includes ENGLSH 1000 or ENGLSH 1000H. The 18 credits taken to fulfill the University general education distribution requirement may be taken S/U.

Restrictions

- First-semester freshmen are ineligible to take any course S/U unless it is only offered S/U.
- Only one course per semester may be taken S/U.
- Students on academic probation are not allowed to take any course S/U.
- To be eligible for the Dean's List each term, a student must complete 12 graded credits (S/U courses are not considered "graded").

Personal Laptop Computer Requirements and College Computing Resources

Each student is required to have a personal laptop computer with software and hardware needed to facilitate completion of coursework and class participation. Each Engineering degree program maintains a recommendation for student owned laptop computers to ensure compatibility with software applications needed to complete coursework. Computer recommendations for Electrical Engineering, Computer Engineering, and Computer Science students may be found at the following website, <https://engineering.missouri.edu/departments/eecs/eecs-students/>, and for all other students, <https://www.themizzoustore.com/c-893-college-of-engineering.aspx>. The College of Engineering also offers a variety of options with limited availability for accessing computers including spaces dedicated to general use computing as well as specialized computing resources in teaching laboratories.

Student Services

Academic Advising

Each student in the College of Engineering is assigned an academic advisor from the College of Engineering Advising Office who assists the student in reaching academic and professional goals, as well as with time management and academic success strategies. Students are encouraged to meet with their advisors as often as needed. Engineering students have advising holds placed on their accounts each semester and will work with their advisor to verify enrollment and degree progress before enrolling for the following semester.

Diversity and Outreach Initiatives

At Mizzou Engineering we honor our values by insuring a diverse and inclusive college. The College of Engineering facilitates the outreach, recruitment, retention, and overall success of all members of our community, especially those from backgrounds traditionally underrepresented in engineering. The College of Engineering houses programs including:

- The Inclusivity Center which provides a physical space where everyone is welcome as well as a venue for events and activities.
- The Multi-cultural Engineering Program which fosters a support network between students, faculty, and staff to ensure academic success by providing, professional development events, academic enrichment, mentoring, and information about opportunities such as careers in industry, undergraduate research, and graduate study.

Study Abroad

College of Engineering students have opportunities to pursue academic, leadership, and service opportunities around the world. Students can participate in short-term study abroad programs and earn college credit towards general education requirements, core engineering requirements, and engineering technical electives to complete graduation requirements. Students can also participate in semester long programs.

Professional Engineering Registration

The revised statutes of Missouri (Section 327.221) require that each applicant for registration as a professional engineer in Missouri must be a graduate of and hold a degree in engineering in a curriculum accredited by ABET, a nonprofit organization that accredits college and university programs in applied and natural science, computing, engineering and engineering technology. The MU undergraduate programs in biological engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, mechanical engineering, and computer science are so accredited.

Senior students are strongly encouraged to take the Fundamentals of Engineering Exam leading to the Fundamentals in Engineering (FE) status as a first step toward registration.

The MU undergraduate programs in biological, chemical, civil, computer, electrical, industrial, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET and computer science is accredited by the Computing Accreditation Commission of ABET (<https://www.abet.org>).

Naval Reserve Officers Training Corps (NROTC)

NROTC was established in 1926 to offer college students the necessary naval science courses to qualify for commissions in the Navy or Marine Corps Reserve. Today, NROTC is one of the primary accession sources of officers for the Navy and Marine Corps. MU represent one of 77 host colleges across the country with an NROTC program.

Navy students should major in a technical course of study while Marine students may major in any course of study leading to a baccalaureate degree. Academic credit for naval science courses is accepted toward a baccalaureate degree by most MU schools and colleges. Midshipmen take one naval science course for credit each semester, which provides education and training in various aspects of the Navy or Marine Corps. These courses are available to any student at MU, who can earn a Minor in Naval Science (<http://catalog.missouri.edu/collegeofengineering/additionalcertificatesminors/minor-naval-science/>). Associated with each course is a leadership laboratory for program students. NROTC activities include water survival, self-defense, physical fitness, orienteering, aviation, nuclear power indoctrination, pistol/rifle marksmanship and a variety of field trips.

Scholarship NROTC midshipmen incur no military obligation during their freshman year. This allows students to get a better understanding and appreciation of the life of a Navy or Marine Corps officer before committing. Navy NROTC graduates incur a minimum five years military obligation. Marine NROTC graduates incur a minimum four year military obligation. Upon graduation, midshipmen who successfully complete the program are commissioned as Ensigns in the Navy or Second Lieutenants in the Marine Corps.

For additional information, contact:

Department of Naval Science
105 Crowder Hall
(573) 882-6693 or 888-MU-NROTC
NROTCMU@missouri.edu
<https://engineering.missouri.edu/departments/naval-science/>

Graduate

The College of Engineering graduate programs at the University of Missouri promote technology, innovation and entrepreneurship with abundant interdisciplinary opportunities in research and education. MU Engineering sustains a variety of research centers, programs, groups and facilities along with other departmental groups that are designated as areas of exemplary expertise and success. The college contributes significantly to MU's overall annual research and development spending. The College also offers exceptional business opportunities to corporations, small businesses and start-ups.

MU Engineering graduate students have gone on to become faculty at world-class academic institutions in the U.S. and around the world, have created start-up companies as successful entrepreneurs and have secured jobs with leading Fortune 500 companies and National Laboratories.

Graduate engineering programs include

- Biological Engineering
- Biomedical Engineering
- Chemical Engineering
- Civil & Environmental Engineering

- Computer Science
- Electrical & Computer Engineering
- Industrial Manufacturing & Systems Engineering
- Mechanical & Aerospace Engineering
- MU Informatics Institute

Note: Prospective graduate students must be accepted to both the degree program of interest and to the MU Graduate School. In most cases, the entire application process may be completed online. Find admission and application details by selecting the degree program of interest on the graduate admissions page.