

## Computer Engineering

### University of Missouri - Columbia

Johnson County Community College Transfer Program to the University of Missouri - Columbia	Engineering Advising Office
Engineering	(573) 884-6961
Computer Science, BS	muengradvising@missouri.edu
Academic Year 2025-2026	<a href="https://catalog.missouri.edu/collegeofengineering/computerscience/bs-computer-science/">https://catalog.missouri.edu/collegeofengineering/computerscience/bs-computer-science/</a>

### Program Description

Computer Science emphasizes the study of algorithms, programming methodology, software systems, computational theories and algorithms, computer organization, networking, computer graphics, cyber-security, machine learning, artificial intelligence, high performance computing, and database. In the two-semester capstone design courses, students complete design projects that serve as a culminating academic experience. Internships with companies for real-world experience and undergraduate research opportunities with faculty are abundant and encouraged.

Students who complete the BS in Computer Science can work for government agencies, academic institutions, or private industry creating and applying new technologies to solve complex problems, or attend graduate schools.

**Major Program Requirements** - The Bachelor of Science with a major in Computer Science emphasizes the study of software systems, computational theories and algorithms, computer organization, networking, and programming methodology. Students who complete the BS in Computer Science can work for government agencies, academic institutions, or private industry creating and applying new technologies to solve complex problems.

The BS degree requires the completion of the three-semester calculus sequence plus discrete math and statistics.

The BS degree requires the completion of 120 credits. Computer Science students must pass all CS core courses that are prerequisites for other CS core courses that the student takes with a "C" or better grade. All other CS core courses must be passed with a "C-" grade or better. To graduate, a student must earn an overall GPA of 2.0 or better and a 2.0 GPA or better in all CS or IT courses.

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.

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.

## Admission Requirements

**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.

Students seeking undergraduate degrees must complete a minimum of 30 credit hours in MU-authored courses. Missouri Online-Self Paced courses authored by MU faculty are acceptable as are courses offered for credit through Missouri Online. (NOTE: This policy has replaced the requirement for courses to be taken "in residence.")

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/international-students/>) for information on academic and English language admission requirements. Any questions regarding international student admissions can be directed to that office at [inter@missouri.edu](mailto: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.

## Program Requirements

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	Title		Hours		

### Computer Science Core Courses - All core CS Courses that are a pre-requisite need to have a "C" or better to pass

(Otherwise the other core courses need a "C-" to pass)

ENGR 121	Engineering Orientation	2			
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**Technical Electives** – can be 2000 level and above CS or IT courses, 4000 level Math courses, any 4000+ level statistics course, 2000 level and above Engineering courses, IS\_LT 4099, MANGMT 3000, MAKRTNG, FINANC 3000, and other course that meet the prior approval of the student's CS advisor. All technical electives taken outside the CS Department must meet the prior approval of the student's CS advisor.

Visit the MU – Columbia Course Equivalency ([https://access.myzou.missouri.edu/psp/prdpa/EMPLOYEE/SA/c/UM\\_SELF\\_SERVICE.UM\\_TRNSFR\\_EQUIV.GBL?&AITS\\_HDR\\_CODE=2](https://access.myzou.missouri.edu/psp/prdpa/EMPLOYEE/SA/c/UM_SELF_SERVICE.UM_TRNSFR_EQUIV.GBL?&AITS_HDR_CODE=2)) database for equivalent courses.

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	Title		Hours		

### Math Courses (19 hours)

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			
CS 210	Discrete Structures I*	3			

CS 211 Discrete Structures II\* 3

**Science Courses (minimum 7 hours) One of the following 2-semester sequences (Physics, Chemistry, Biology or Geology) must be taken (at least one of the courses must include a lab). Labs listed separately are not considered a 2nd science course.**

PHYS 130	College Physics I*	5	PHYSICS 1210 & PHYSICS 1210	College Physics I and College Physics 1	4
PHYS 131	College Physics II*	5	PHYSICS 1220	College Physics II	4
PHYS 220	Engineering Physics I*	5	PHYSICS 2750	University Physics I	5
PHYS 221	Engineering Physics II*	5	PHYSICS 2760	University Physics	5
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
CHEM 131 & CHEM 132	General Chemistry II Lecture* and General Chemistry II Lab*	4			

**Select one of the following:**

BIOL 121	Introductory Biology for Non-Majors	4	BIO SC 1010 & BIOS 1010	Gen Prin/Concepts Biology and Gen Prin/Concepts Biology	3
BIOL 125	General Botany	5	BIO_SC 1200	General Botany w/ Laboratory	5
BIOL 150	Biology of Organisms*	5			
BIOL 230 & BIOL 231	Microbiology* and Microbiology Lab*	3			
GEOS 130	General Geology	5	GEOL 1100	Intro to the Earth w/Lab	4
ANTH 126	Physical Anthropology	3	ANTH 2051	Intro to Biol Anthrop	3

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
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**General Requirements**

Two courses must be designated "Writing Intensive."

**Select one of the following:**

ENGL 119	College Composition I with Review*	5	ENGLSH 1000 Writing and Rhetoric		
ENGL 121	Composition I*	3	ENGLSH 1000 Writing and Rhetoric		
ENGL 122	Composition II*	3	ENGLSH 1000 Writing and Rhetoric		

(must earn a "C" or higher and is a prerequisite for all WI courses) <sup>Visit WI guidelines and courses for more information.</sup>

Complete at least 9 hours in each of the following categories. One course in one of the categories must be numbered 2000 or higher.

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
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1. Humanities/Fine Arts – Must include <sup>and courses</sup> from at least two different departments

COMS 121	Public Speaking	3	COMMUN 1200	Public Speaking	3
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Visit the JCCC/MU General Education guide for JCCC equivalents.

2. Social/Behavioral Sciences – Must include courses from at least two different departments and fulfill the Missouri Constitutional Requirement.

Visit the JCCC/MU General Education guide for JCCC equivalents.

**Constitutional Elective – Select one of the following:**

HIST 140	U.S. History to 1877	3	HIST 1100	Survey/Amer History to 1865	3
HIST 141	U.S. History Since 1877	3	HIST 1200	Survey/Amer History since 1865	3
POLS 124	American National Government	3	POL_SC 1100	American Government	3
POLS 126	State and Local Government	3			

3. Complete enough elective hours to bring the total credit hours that count towards the degree to 120.

\* JCCC course has a prerequisite or corequisite.

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