Division of Biological and Biomedical Systems

University of Missouri - Kansas City

Johnson County Community College Transfer Program to the University of Missouri - Kansas City	School of Science & Engineering
School of Science and Engineering	816-235-2399
Division of Biological and Biomedical Systems	sse@umkc.edu
Academic Year 2025-2026	https://sse.umkc.edu

Program Description

Students interested in UMKC's Engineering programs need to work closely with advisors at both JCCC and UMKC. This helps students stay on track and not prolong the time it takes to earn an engineering bachelor's degree from UMKC. Students are advised to complete the JCCC Associate of Science requirements, and the prerequisite courses listed on the transfer guide. Students are also encouraged to use the ***Reverse Transfer*** *option (if eligible) after transferring to UMKC.* ***Reverse Transfer*** *allows students to earn their associate degree from JCCC while working towards their bachelor's degree at UMKC.*

The Associate of Science, AS (https://catalog.jccc.edu/archives/2025-26/degreerequirements/associate-science/) at JCCC is a general transfer degree and partners well with the first two years of most bachelor degree programs. Students pursuing the AS may select courses that satisfy both the AS degree requirements and lower division requirements for a bachelor's degree at four-year institutions. The elective hours within the AS allow students to complete additional general education and lower division courses required for specific majors. The AS degree requires completion of 60 credit hours. Meeting with a JCCC counselor (https://www.jccc.edu/student-resources/counseling/academic-counseling/) is strongly recommended for selection of appropriate courses.

The Division of Biological and Biomedical Systems at UMKC offers the following degrees:

- Bachelor of Arts
  - Biology (https://catalog.umkc.edu/colleges-schools/science-engineering/biology/bachelor-of-arts-biology/)
- Bachelor of Science
  - Biology (https://catalog.umkc.edu/colleges-schools/science-engineering/biology/bachelor-of-science-biology/)
  - - Emphasis Areas
      - Bioinformatics (https://catalog.umkc.edu/colleges-schools/science-engineering/biology/bachelor-of-science-bioinformatics/)
      - Biomedical Sciences (https://catalog.umkc.edu/colleges-schools/science-engineering/biology/bachelor-of-science-biomedical-sciences/)
      - Biotechnology (https://catalog.umkc.edu/colleges-schools/science-engineering/biology/bachelor-of-science-biotechnology/)
      - Clinical Laboratory Science (https://catalog.umkc.edu/colleges-schools/science-engineering/biology/bachelor-of-science-clinical-laboratory-science/)
  - Biomedical Engineering (https://catalog.umkc.edu/colleges-schools/science-engineering/biomedical/bachelor-of-science-biomedical-engineering/)

All UMKC undergraduate degrees require at least 120 credit hours, some programs may require more hours. Students must complete at least 30 credit hours at UMKC and at least 12 upper-division credit hours in their major department/program at UMKC to be eligible to receive an undergraduate degree from UMKC.

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General UMKC Transfer Admission Requirements

- 2.0 or higher cumulative GPA
- Credit/no credit may only be applied to elective coursework and will not apply towards UMKC's general education core or major requirements.
- Equivalent courses can be repeated but all grades will be averaged for GPA calculation purposes and students will only receive credit for one attempt.
- Visit the full transfer admission requirements (https://www.umkc.edu/transfer/apply.html) for more information.

School of Science and Engineering Transfer Admission Requirements

- 2.0 or higher GPA
- Visit the School of Science & Engineering (https://sse.umkc.edu/admissions/transfer-students.html) admission requirements by major.

General Education Requirements for Transfer students:

All UMKC undergraduate students complete general education requirements. Completing an Associate of Arts (A.A.) degree or the Associate of Science (A.S.) in General Sciences at JCCC will satisfy all general education requirements at UMKC, including the Constitution requirement. The A.S. is a better option for most students wanting to transfer into SSE. JCCC students transferring to UMKC without completing the A.A. or A.S. will have the option to elect to complete either the UMKC Essentials or the Missouri Transfer (MOTR) Core 42 curriculum to meet general education requirements.

^Visit general education requirements (https://nam12.safelinks.protection.outlook.com/?url=http%3A%2F%2Fnextcatalog.jccc.edu%2Ftransfer-guides%2Fumkc%2Fumkc-general-education%2F&data=05%7C02%7Cskhalif2%40jccc.edu%7C3bbbe8fc84564328cf7008de1320415e%7C15244239dcf245e7aefd127b69fc5438%7C1%7C0%7C638969226426393815%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=%2FvPga7IbeZ0jrCCeMsWei47YJU4Mi5k%2B50ooxjEZup4%3D&reserved=0) to learn more about these two options and UMKC general education requirements, including how transfer coursework applies.

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.

Program Requirements

Biology Required Classes: All Biology majors can complete the following courses at JCCC:

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
BIOL 135	Principles of Cell and Molecular Biology (or MOTRBIOL 100LB) (Major Requirement; General Education^)**	4	BIOLOGY 108 & BIOLOGY 108L	General Biology I and General Biology I Lab	4
BIOL 150	Biology of Organisms* (or MOTRBIOL 100LZ) (Major Requirement)**	5	BIOLOGY 109 & BIOLOGY 109L	General Biology II and General Biology II Lab	4
BIOL 205	General Genetics* (Major Requirement)**	4	BIOLOGY 206 Genetics		
CHEM 124 & CHEM 125	General Chemistry I Lecture* and General Chemistry I Lab* (Major Requirement; General Education^)**	4	CHEM 211 & CHEM 211L	General Chemistry I and Experimental Gen Chemistry I	5
CHEM 131 & CHEM 132	General Chemistry II Lecture* and General Chemistry II Lab* (Major Requirement)**	4	CHEM 212R & CHEM 212LR	General Chemistry II and Experimental Gen Chemistry II	5
MATH 173	Precalculus* (General Education)**	5	MATH 120	Precalculus	5

Biology (BA)

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
Select one of the following:					
MATH 241	Calculus I* (Major Requirement)**	5	MATH 210	Calculus I	4
MATH 201	Statistics* (Major Requirement)**	3	STAT 235	Elementary Statistics	3
MATH 285	Statistics for Business* (Major Requirement)**	4	STAT 235	Elementary Statistics	3
Select one of the following:					
PHYS 130	College Physics I* (Major Requirement; General Education^)**	5	PHYSICS 210	General Physic I	4
PHYS 220	Engineering Physics I* (Major Requirement; General Education^)**	5	PHYSICS 240	Physics Scientist/ Engineers I	5

Biology (BS)

Student must complete additional biology majors coursework for a total of 42 credit hours of biology courses with grades of "C-" or better, 26 of these hours must be 300-400 level. A minimum of 21 credit hours of biology courses must be taken from BIOLOGY or LIFE-SCI coursework at UMKC. The UM Biology GPA must be at least 2.0.

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
CHEM 220	Organic Chemistry I*	5	CHEM 321	Organic Chemistry I	3
CHEM 221	Organic Chemistry II*	5	CHEM 322R	Organic Chemistry II	3
MATH 241	Calculus I*	5	MATH 210	Calculus I	4
Select one of the following:					
MATH 242	Calculus II* (Major Requirement)**	5	MATH 220	Analytic Geometry Calc I	4
MATH 201	Statistics* (Major Requirement)**	3	STAT 235	Elementary Statistics	3
MATH 285	Statistics for Business* (Major Requirement)**	4	STAT 235	Elementary Statistics	3
Select one of the following:					
PHYS 130	College Physics I* (Major Requirement; General Education^)**	5	PHYSICS 210	General Physic I	4
PHYS 220	Engineering Physics I* (Major Requirement; General Education^)**	5	PHYSICS 240	Physics Scientist/ Engineers I	5
Select one of the following:					
PHYS 131	College Physics II* (Major Requirement)**	5	PHYSICS 220	General Physics II	4
PHYS 221	Engineering Physics II* (Major Requirement)**	5	PHYSICS 250	Physics Scientist/ Engineers II	5

Biology – Bioinformatics Emphasis (BS)

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
Select one of the following:					
CS 200	Concepts of Programming Algorithms Using C++* (Major Requirement)**	4	COMP-SCI 101 & COMP-SCI 101L	Problem Solving Prgming I and Problem Solving Prgming Lab	4
CS 202	Concepts of Programming Algorithms using Python* (Major Requirement)**	4	COMP-SCI 101 & COMP-SCI 101L	Problem Solving Prgming I and Problem Solving Prgming Lab	4
CS 205	Concepts of Programming Algorithms using Java* (Major Requirement)**	4	COMP-SCI 101 & COMP-SCI 101L	Problem Solving Prgming I and Problem Solving Prgming Lab	4
CS 210	Discrete Structures I* (Major Requirement)**	3	COMP-SCI 191	Discrete Structures I	3
CS 235	Object-Oriented Programming Using C++* (Major Requirement)**	4	COMP-SCI 201R & COMP-SCI 201L	Problem Solving/ Program II and Problem Solving/ Program II Lab	4
CS 250	Basic Data Structures using C++* (Computer Science Track)	4	COMP-SCI 303	Data Structures	3
MATH 241	Calculus I* (Major Requirement)**	5	MATH 210	Calculus I	4
MATH 242	Calculus II* (Major Requirement)**	5	MATH 220	Analytic Geometry Calc I	4

Biology – Biomedical Science Emphasis (BS)

Requires a supplemental application. Student must complete additional biology majors coursework for a total of 42 credit hours of biology courses with grades of "C-" or better. 26 of these hours must be 300-400 level. A minimum of 21 credit hours of biology courses must be taken from BIOLOGY or LIFE-SCI coursework at UMKC. The UM Biology GPA must be at least 2.0.

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
BIOL 140	Human Anatomy (Major Requirement)**	4	BIOLOGY 218 & BIOLOGY 218L	Introductory Anatomy and Introductory Anatomy Lab	5
CHEM 220	Organic Chemistry I* (Major Requirement)**	5	CHEM 321 & CHEM 321L	Organic Chemistry I and Organic Chemistry Lab I	4
CHEM 221	Organic Chemistry II* (Major Requirement)**	5	CHEM 322R & CHEM 322L	Organic Chemistry II and Organic Chemistry Lab II	4
Select one of the following:					
HC 130	Medical Terminology for Healthcare Professions (Major Requirement)	3	HLSC 125	Medical Terminology	1
HC 130	Medical Terminology for Healthcare Professions (Major Requirement)	3	NURSE 125	Medical Terminology	1

MATH 241	Calculus I* (Major Requirement)**	5	MATH 210	Calculus I	4
Select one of the following:					
MATH 242	Calculus II* (Major Requirement)**	5	MATH 220	Analytic Geometry Calc I	4
MATH 201	Statistics* (Major Requirement)**	3	STAT 235	Elementary Statistics	3
MATH 285	Statistics for Business* (Major Requirement)**	4	STAT 235	Elementary Statistics	3
Select one of the following:					
PHYS 130	College Physics I* (Major Requirement; General Education^)**	5	PHYSICS 210	General Physic I	4
PHYS 220	Engineering Physics I* (Major Requirement; General Education^)**	5	PHYSICS 240	Physics Scientist/ Engineers I	5
Select one of the following:					
PHYS 131	College Physics II* (Major Requirement)**	5	PHYSICS 220	General Physics II	4
PHYS 221	Engineering Physics II* (Major Requirement)**	5	PHYSICS 250	Physics Scientist/ Engineers II	5

Biology – Biotechnology Emphasis (BS)

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
ACCT 121 & ACCT 122	Accounting I and Accounting II* (Major Requirement)	3	ACCTNG 210	Intro Finanical Accounting	3
Select one of the following:					
CS 200	Concepts of Programming Algorithms Using C++* (Major Requirement)**	4	COMP-SCI 101 & COMP-SCI 101L	Problem Solving Prgming I and Problem Solving Prgming Lab	4
CS 202	Concepts of Programming Algorithms using Python* (Major Requirement)**	4	COMP-SCI 101 & COMP-SCI 101L	Problem Solving Prgming I and Problem Solving Prgming Lab	4
CS 205	Concepts of Programming Algorithms using Java* (Major Requirement)**	4	COMP-SCI 101 & COMP-SCI 101L	Problem Solving Prgming I and Problem Solving Prgming Lab	4
MATH 241	Calculus I* (Major Requirement)**	5	MATH 210	Calculus I	4
MATH 242	Calculus II* (Major Requirement)**	5	MATH 220	Analytic Geometry Calc I	4

Biology – Clinical Laboratory Science Emphasis (BS)

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
Select one of the following:					
MATH 241	Calculus I* (Major Requirement)**	5	MATH 210	Calculus I	4

MATH 201	Statistics* (Major Requirement)**	3	STAT 235	Elementary Statistics	3
MATH 285	Statistics for Business* (Major Requirement)**	4	STAT 235	Elementary Statistics	3
PHYS 130	College Physics I* (Major Requirement; General Education^)**	5	PHYSICS 210	General Physic I	4
PHYS 131	College Physics II* (Major Requirement)**	5	PHYSICS 220	General Physics II	4

Biomedical Engineering (BS)

A minimum of "C-" or better in all math, science, engineering, and computer science coursework is required.

Course Code	Course Title	Course Hours	Transfer Code	Transfer Title	Transfer Hours
Code	**Title**	**Hours**			
BIOL 135	Principles of Cell and Molecular Biology (or MOTRBIOL 100LB) (Major Requirement; General Education^)**	4	BIOLOGY 108 & BIOLOGY 108L	General Biology I and General Biology I Lab	4
BIOL 140	Human Anatomy (Elective)	4	BIOLOGY 218	Introductory Anatomy	3
BIOL 205	General Genetics* (Elective)**	4	BIOLOGY 206 Genetics		
CHEM 124 & CHEM 125	General Chemistry I Lecture* and General Chemistry I Lab* (Major Requirement)	4	CHEM 211 & CHEM 211L	General Chemistry I and Experimental Gen Chemistry I	5
CHEM 131 & CHEM 132	General Chemistry II Lecture* and General Chemistry II Lab* (Major Requirement)**	4	CHEM 212R & CHEM 212LR	General Chemistry II and Experimental Gen Chemistry II	5
CS 200	Concepts of Programming Algorithms Using C++* (Major Requirement)	4	EC-ENGR 216 Engineering Computation		
ENGR 251	Statics* (Major Requirement)	3	CIV-ENGR 275	Engineering Statics	3
ENGR 254	Dynamics* (Major Requirement)	3	MEC-ENGR 285	Engineering Dynamics	3
ENGR 284	Thermodynamics* (Major Requirement)	4	MEC-ENGR 299 Engineering Thermodynamics		
MATH 241	Calculus I* (Major Requirement)	5	MATH 210	Calculus I	4
MATH 242	Calculus II* (Major Requirement)	5	MATH 220	Analytic Geometry Calc I	4
MATH 243	Calculus III* (Major Requirement)	5	MATH 250 Calculus III		
MATH 254	Differential Equations* (Major Requirement)***	4	MATH 345	Ordinary Differential Equation	4
PHYS 220	Engineering Physics I* (Major Requirement)	5	PHYSICS 240	Physics Scientist/ Engineers I	5
PHYS 221	Engineering Physics II* (Major Requirement)	5	PHYSICS 250	Physics Scientist/ Engineers II	5

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*	JCCC course has a prerequisite or corequisite.
**	Denotes courses that must be completed with a grade of “C-” or above.
***	Meets the requirement for the engineering degree, but will not count towards a major or minor in Math.
^	While this course can be transferred from JCCC to UMKC, students who take it at UMKC will be eligible for upperlevel credit.

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