School of Biological Sciences

Bachelor of Science in Biology - Bioinformatics

2017-2018 Major Map: First Time College Student

Four Year Graduation Plan – Courses & Critical Benchmarks:
The following is a sample course of study. It is the student's responsibility to ensure that all program requirements are met. This guide is not a substitute for academic advisement. For more information see the University Catalog at umkc.edu/catalog.

Your path to graduation may vary based on factors such as college credit you earned while in high school, transfer work from other institutions of higher learning, and placement in Mathematics. You are responsible for checking prerequisites to any courses. Critical Courses and minimum recommended grades (as noted below) provide feedback regarding major fit and help indicate likelihood of successful completion of chosen academic program and degree.

Please Note: Students must have successfully passed (with a "C-" or better) Pre-calculus or a combination of a College Algebra and Trigonometry for college credit to be prepared for major math sequence. **Students who do not place into MATH 210 Calculus I or MATH 216 Calculus for Biological Sciences may have to complete preparatory math coursework, adding 3 – 8 hours to the total hours required for the degree.**

First Math Course:	MATH 210 Calculus I OR MATH 216 Calculus for Bio Sciences OR STAT 235 Elementary Statistics	**Foreign Language Requirement:**	None	**General Elective Hours:**	8

Critical Course	Course Subject, Number, & Title and Academic Plan Benchmarks **Bold = UMKC General Education Core requirement** *Prerequisite May Be Required ** Co-Requisite Enrollment Required	Min. Rec. Grade	Credit Hours	Notes
Fall Semester Year 1: 16 hours				
◆	BIOLOGY 108 General Biology I (**Focus B**) + BIOLOGY 108L Lab OR BIOLOGY 109 General Biology II (**Focus B**) + BIOLOGY 109L Lab	B	4	Enrollment in BIOLOGY 108 and/or 109 is based on ACT scores. Transfer students should consult with an advisor before enrolling. A grade of B (3.00) or higher in Biology, Chemistry, & Mathematics courses is a realistic benchmark for students to successfully complete a biology degree. A grade of C- or higher required to satisfy major requirements.
◆	**CHEM 211 General Chemistry I (**Focus Elective**) + CHEM 211L Lab	B	5	
	BIOLOGY 115 First Year Seminar (strongly recommended, not required)		1	
	****ANCHOR I Reasoning & Values** Click for options		3	
	****DISC 100 Reasoning & Values** (Speech & Writing) Click for options		3	
Complete at least 16 term credit hours Earn minimum 2.00 University of Missouri (UM) cumulative GPA Earn minimum 2.00 UM Biology GPA				
Spring Semester Year 1: 15 hours				
◆	BIOLOGY 108 General Biology I + BIOLOGY 108L Lab OR BIOLOGY 109 General Biology II + BIOLOGY 109L Lab	B	4	Register for UMKC Roo Career Network. Students who are planning to complete their degree in 4-years should aim to average at least 30 credit hours per academic year (Fall, Spring, Summer) to stay on track.
◆	**CHEM 212R General Chemistry II (**Focus Elective**) + Lab	B	5	
	****ANCHOR II Culture & Diversity** Click for options		3	
	****DISC 200 Culture & Diversity** (Speech & Writing) Click for options		3	
Complete at least 15 term credit hours Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA				
Summer Semester Year 1: 0 hours				
Complete ANCHOR I & DISC 100 Complete BIOLOGY 108: General Biology I + BIOLOGY 108L: General Biology I Laboratory Complete BIOLOGY 109: General Biology II + BIOLOGY 109L: General Biology II Laboratory Complete CHEM 211: General Chemistry I + CHEM 211L: Experimental General Chemistry I Maintain minimum 2.00 UM cumulative GPA and UM Biology GPA Complete 30 total hours toward degree			Students may use the summer to ensure completion of 30 hours per academic year or to lighten fall and spring course loads.

Fall Semester Year 2: 17 hours				
◆	BIOLOGY 202 Cell Biology OR BIOLOGY 206 Genetics	B	3	Take the RooWriter Assessment after completing DISC 200. Must complete prior to enrolling in a Writing Intensive (WI) course. [1] Enrollment restricted. Must take ALEKS Math Placement Exam or show prerequisite requirement has been met prior to enrolling.
◆	**CHEM 321 Organic Chemistry + CHEM 321L Lab	B	4	
	*MATH 120 Precalculus[1] OR *MATH 210 Calculus I[1] OR *MATH 216 Calculus for Biological Sciences[1]	B	4-5	
	Focus A Arts & Humanities Click for options		3	
	COMP-SCI 101 Problem Solving & Programming I		3	
Complete at least 17 term credit hours Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA				
Spring Semester Year 2: 16-17 hours				
◆	BIOLOGY 202 Cell Biology OR BIOLOGY 206 Genetics	B	3	Students planning to continue their education in professional or graduate programs should meet with their advisor to discuss application timelines and requirements. [2] HISTORY 101, 102, & POL-SCI 210 fulfill both the **Focus C** & Missouri Constitution requirement.
◆	**CHEM 322R Organic Chemistry + 322L Lab		4	
	MATH 210 Calculus I OR MATH 216 Calculus for Biological Sciences OR MATH 220 Calculus II	B	3-4	
	Focus C Human Actions, Values, & Ethics HISTORY 101, 102, or POL-SCI 210 recommended[2] Click for options		3	
	COMP-SCI 191 Discrete Structures I		3	
Complete at least 17 term credit hours Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA				
Summer Semester Year 2: 0 hours				
Complete ANCHOR II & DISC 200 Complete CHEM 321 Organic Chemistry I + CHEM 321L Lab Complete RooWriter Assessment Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA Complete 60 total hours toward degree				Students may use the summer to ensure completion of 30 hours per academic year or to lighten fall or spring course loads.
Fall Semester Year 3: 17-19 hours				
	LS-BIOC 341 Basic Biochemistry		3	Apply for graduation & complete your Final Degree Audit for Major and Minor (if applicable).
	BIOLOGY 405 Introduction to Evolution		3	
	COMP-SCI 201R Problem Solving & Programming II		3	
	PHYSICS 210 General Physics I OR PHYSICS 240 Physics for Scientists & Engineers I		4-5	
	MATH 220 Calculus II OR General Elective	B	3-4	
	BIO 385 Preparing for Careers in Biology (recommended, not required)		1	
Complete at least 17 term credit hours Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA				

Spring Semester Year 3: 16 hours				
	LS-BIOC 425 Bioinformatics		3	
	LS-BIOC 360WL Laboratory in Biochemistry & Molecular Biology		3	
	*PHYSICS 220 General Physics II OR *PHYSICS 250 Physics For Scientists & Engineers II	B	4-5	Students should complete appropriate admission exams for professional health or graduate program applications, e.g. MCAT, DAT, GRE.
	**ANCHOR III Community & Civic Engagement Click for options		3	
	**DISC 300 Community & Civic Engagement Click for options		3	
Complete at least 16 term credit hours Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA				
Summer Semester Year 3: 0 hours				
Complete ANCHOR III & DISC 300 Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA Complete 90 total hours toward degree				Students may use the summer to ensure completion of 30 hours per academic year or to lighten fall or spring course loads.
Fall Semester Year 4: 13-15 hours				
	BIOLOGY 3XX/4XX Elective	B	3	
	BIOLOGY 3XX/4XX Lab Elective Click for options	B	3	Take the ETS Proficiency Profile (EPP) & Biology Major Field Exams (MFE) Students planning to take BIOLOGY 498WI will complete the Major Field exam as part of that course.
	STAT 235 Elementary Statistics OR MATH 226 Biomath II: Statistics & Modeling	B	3	
	Biology Elective		1-3	
	General Elective		3	
Complete at least 13 term credit hours Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA				
Spring Semester Year 4: 10-12 hours				
	Biology Synthesis Requirement BIOLOGY 498WI[3] Critical Analysis of Biological Issues OR LIFE-SCI 497 Special Topics Click for options OR LIFE-SCI 499 Undergraduate Research Click for options	B	3	
	LS-BIOC 430 Molecular Biology & Genetic Engineering	B	3	
	BIOLOGY 3XX/4XX Elective	B	3	[3] BIOLOGY 498WI includes the Biology Major Field Exam as part of the course.
	General Elective (only if needed to reach 120 min. hours)		1-3	
Complete Major Field Exam for Biology Complete ETS Proficiency Profile Maintain minimum 2.00 UM cumulative GPA Maintain minimum 2.00 UM Biology GPA Complete a minimum of 120 total hours toward degree				

Graduation Requirements Summary

Total Hours	Total Hours at UMKC	Upper Lvl Hrs in Major at UMKC	Total Upper Level (300/400) hours	Major GPA	UMKC GPA
120	30 minimum	21 minimum	36 minimum	2.00 minimum	2.00 minimum

Other Information

A minimum of 30 hours must be earned at the University of Missouri-Kansas City, regardless of the number and level of hours earned at another institution. Undergraduate degree-seeking students are required to earn credit in at least 36 hours of coursework numbered 300 and above at UMKC. In the case of transfer credit, the coursework must be numbered as junior-senior level work by the transferring institution. Community-college transfer coursework cannot count towards the 36-hour requirement.

Non-course Requirements

RooWriter Assessment ____
Biology Major Field Exam ____
ETS Proficiency Profile ____

Policy

The University reserves the right to make changes in courses and course schedules without notice. Students are expected to maintain a quality of achievement significantly above minimum UMKC standards for degree work. Individual student progress will be monitored throughout the program. Satisfactory progress is required of all students for retention in the program. Students are expected to maintain academic standards, perform satisfactorily in courses, refrain from academic dishonesty, comply with the established University requirements, and refrain from unethical or unprofessional behavior or behaviors that obstruct the training process or threaten the welfare of the student or others. Other circumstances involving student behavior will be addressed by the faculty on an individual basis.

Advising Contact Information

School of Biological Sciences Academic Support
816-235-2580
sbs-undergrad@umkc.edu
sbs.umkc.edu/undergraduate_support.cfm

Career Opportunities

UMKC Career Services – career.umkc.edu | 816-235-1636 | 2nd Floor, Atterbury Student Success Center.
O*Net OnLine – OnetOnline.org Learn about careers related to your major, income potential, and more.