

Four-Year Graduation Plan - Courses and 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. **All incoming freshmen must develop an academic plan (which maps out all courses needed to graduate within your intended major/degree). Your academic advisor is available to meet with you and create your specific plan.**

*Your path to graduation may vary slightly 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.*

First Math	MATH 120, 210, 206, or STAT 235	Foreign Language Requirement	No	Free Elective Hours	2-5
------------	---------------------------------	------------------------------	----	---------------------	-----

Critical Course or Benchmark	Course Subject, Number, and Title and Academic Plan Benchmarks Bold = UMKC General Education Core Requirement *Prerequisite May Be Required **Co-Requisite Enrollment Required	Min Recom Grade	Credit Hours (CH)	Notes
------------------------------	---	-----------------	-------------------	-------

Fall Semester Year 1: 16 hours

	<b>**Anchor I: Reasoning and Values</b> <a href="http://www.umkc.edu/core/courses/">http://www.umkc.edu/core/courses/</a>		3	A grade of B or higher in biology, chemistry, and math courses is a realistic benchmark for students to successfully complete a biology degree.  ALEKS Math Placement Exam or college credit with a grade of C- or higher in prerequisite required prior to enrollment in MATH. <a href="http://www.umkc.edu/mathplacement/">www.umkc.edu/mathplacement/</a>  Students must earn a grade of C- or higher for courses to satisfy majors requirements.
	<b>**DISC 100: Reasoning and Values (Speech and Writing)</b>		3	
◆	BIOLOGY 108: General Biology I ( <b>Focus B</b> ) <b>OR</b> BIOLOGY 109: General Biology II ( <b>Focus B</b> )	B	3	
	BIOLOGY 108L: General Biology I Laboratory <b>OR</b> BIOLOGY 109L: General Biology II Laboratory	B	1	
◆	MATH 120: Precalculus <b>OR</b> CHEM 211: General Chemistry I ( <b>Focus Elective</b> ) <b>AND</b> CHEM 211L: Experimental General Chemistry I	B	5	
	BIOLOGY 115: First Year Seminar (strongly recommended)		1	
◆	Complete 12 term hours minimum toward degree. 2.250 or higher cumulative UM GPA recommended. 2.250 or higher cumulative UM Biology GPA recommended.			

Spring Semester Year 1: 15 hours

	<b>**Anchor II: Culture and Diversity</b> <a href="http://www.umkc.edu/core/courses/">http://www.umkc.edu/core/courses/</a>		3	Register for UMKC Roo Career Network. <a href="http://career.umkc.edu/">http://career.umkc.edu/</a>  Students who are planning to complete their degree in 4-years should aim to complete a minimum of 30 credit hours per academic year (Fall, Spring, Summer).
	<b>**DISC 200: Culture and Diversity (Speech and Writing)</b>	B	3	
◆	BIOLOGY 108: General Biology I <b>OR</b> BIOLOGY 109: General Biology II	B	3	
	BIOLOGY 108L: General Biology I Laboratory <b>OR</b> BIOLOGY 109L: General Biology II Laboratory	B	1	
◆	CHEM 211: General Chemistry I <b>AND</b> CHEM 211L: Experimental General Chemistry I <b>OR</b> CHEM 212R: General Chemistry II <b>AND</b> CHEM 212LR: Experimental General Chemistry II	B	5	

<p>◆ Complete Anchor I and DISC 100. Complete 12 term hours minimum toward degree. 2.250 or higher cumulative UM GPA recommended. 2.250 or higher cumulative UM Biology GPA recommended.</p>
--

**Summer Semester Year 1: 0-5 hours if all previous courses completed**

<p>May use summer semester to ensure completion of 30 hours per academic year or to lighten fall and spring course loads.</p>		
---	--	--

<p>◆ Complete BIOLOGY 108: General Biology I. Complete BIOLOGY 108L: General Biology I Laboratory. Complete BIOLOGY 109: General Biology II. Complete BIOLOGY 109L: General Biology II Laboratory. Complete CHEM 212R: General Chemistry II. Complete CHEM 212LR: Experimental General Chemistry I. 2.250 or higher cumulative UM GPA recommended. 2.250 or higher cumulative UM Biology GPA recommended. Complete 30 total hours toward degree.</p>
--

**Fall Semester Year 2: 17 hours**

<p>◆ BIOLOGY 202: Cell Biology <b>OR</b> BIOLOGY 206 Genetics</p>	B	3	<p>Students considering medicine as a career should plan to take coursework in statistics, psychology, and sociology to prepare them for the Medical College Admission Test (MCAT).</p>
<p>CHEM 321: Organic Chemistry I <b>AND</b> CHEM 321L: Organic Chemistry Laboratory I</p>	B	4	
<p>MATH 226: Biomath II: Statistics and Modeling <b>OR</b> MATH 210: Calculus I <b>OR</b> MATH 216: Biomath I</p>	B	4	
<p>COMP-SCI 101: Problem Solving and Programming I</p>	B	3	
<p><b>Focus A: Arts and Humanities</b> <a href="http://www.umkc.edu/core/courses/">http://www.umkc.edu/core/courses/</a></p>		3	

<p>◆ Complete 12 term hours minimum toward degree. 2.250 or higher cumulative UM GPA recommended. 2.250 or higher cumulative UM Biology GPA recommended. Complete Anchor II and DISC 200.</p>
---

**Spring Semester Year 2: 17 hours**

<p>◆ BIOLOGY 202: Cell Biology <b>OR</b> BIOLOGY 206 Genetics</p>	B	3	<p>HISTORY 101, 102 or POL-SCI 210 recommended for <b>Focus C and Constitution Requirement</b>.</p> <p>Students planning to continue their education in professional or graduate programs should meet with their adviser to discuss application timeline and requirements.</p>
<p>CHEM 322R: Organic Chemistry II <b>AND</b> CHEM 322L: Organic Chemistry Laboratory II</p>	B	4	
<p>MATH 220: Calculus II</p>	B	4	
<p><b>Focus C: Human Actions, Ethics, and Values</b> Missouri Constitution Requirement</p>		3	
<p>COMP-SCI 191: Discrete Structures I</p>	B	3	

<p>◆ Complete RooWriter Writing Assessment. Complete 12 term hours minimum toward degree. 2.250 or higher cumulative UM GPA recommended.</p>
--

Students must complete RooWriter Writing Assessment prior to enrolling in a Writing Intensive Course.

2.250 or higher cumulative UM Biology GPA recommended.

Summer Semester Year 2: 0 hours if all previous coursework completed

May use summer semester to ensure completion of 30 hours per academic year or to lighten fall and spring course loads.



Complete Anchor II and DISC 200.  
 Complete CHEM 321: Organic Chemistry I.  
 Complete CHEM 321L: Organic Chemistry Laboratory I.  
 Complete 60 total hours toward degree.

Fall Semester Year 3: 13-14 hours

LS-BIOC 341: Basic Biochemistry	B	3	File an Application for Graduation.
BIOLOGY 405: Introduction to Evolution	B	3	
COMP-SCI 201R: Problem Solving and Programming II	B	3	
PHYSICS 210: General Physics I <b>OR</b> PHYSICS 240: Physics For Scientists and Engineers I	B	4-5	



2.250 or higher cumulative UM GPA recommended.  
 2.250 or higher cumulative UM Biology GPA recommended.

Spring Semester Year 3: 16-17 hours

<b>**Anchor III: Civic and Community Engagement</b> <a href="http://www.umkc.edu/core/courses/">http://www.umkc.edu/core/courses/</a>		3	
<b>**DISC 300: Community &amp; Civic Engagement</b> (Speech and Writing)		3	
LS-BIOC 425: Bioinformatics	B	3	
LS-BIOC 360WL: Laboratory In Biochemistry & Molecular Biology	B	3	
PHYSICS 220: General Physics II <b>OR</b> PHYSICS 250: Physics For Scientists and Engineers II	B	4-5	



2.250 or higher cumulative UM GPA recommended.  
 2.250 or higher cumulative UM Biology GPA recommended.

Summer Semester Year 3: 0 hours if all previous courses completed



Complete 90 total hours toward degree.

Fall Semester Year 4: 12-15 hours

BIOLOGY Elective Upper Level	B	3	
BIOLOGY Lab Elective Upper Level	B	2-3	
STAT 235 or MATH 226	B	3	
<i>Free Elective (if needed)</i>	B	3-6	




Complete Anchor III and DISC 300.  
 2.250 or higher cumulative UM GPA recommended.  
 2.250 or higher cumulative UM Biology GPA recommended.

Spring Semester Year 4: 12-15 hours

# UMKC Major Map: Bachelor of Science in Biology (Bioinformatics Emphasis)

First-Time College Students

Catalog Year: 2016 - 2017

	Biology Synthesis Requirement: BIOLOGY 498WI: Critical Analysis Of Biological Issues <b>OR</b> LIFE-SCI 497: Special Topics <b>OR</b> LIFE-SCI 499: Undergraduate Research	B	3
	LS-BIOC 430: Molecular Biology and Genetic Engineering	B	3
	BIOLOGY Elective Upper Level	B	3
	<i>Free Elective (if needed)</i>		3-6
	Complete Major Field Exam for Biology. Complete ETS Proficiency Profile. 2.250 or higher cumulative UM GPA recommended. 2.250 or higher cumulative UM Biology GPA recommended.		

## Graduation Requirements Summary

<b>Total Degree Credit Hours</b>	<b>Upper Level (3xx/4xx) Hour Requirement</b>	<b>Minimum Hour / Residency Req.</b>	
120	36	30	
<b>Major GPA</b>	<b>UM GPA</b>	<b>Other GPA Requirements</b>	<b>Other</b>
2.00	2.00		

## Policy

The School reserves the right to make changes in courses, degree requirements 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 and teacher education timetables and 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.

## Academic and Career Advising

School of Biological Sciences Academic Support  
 816-235-2580    SBS-undergrad@umkc.edu    [http://sbs.umkc.edu/undergraduate\\_support.cfm](http://sbs.umkc.edu/undergraduate_support.cfm)

UMKC Career Services Resources: <http://www.career.umkc.edu/>    O\*Net OnLine: <http://www.onetonline.org/>