

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. For more information you may go to our website at [www.sce.umkc.edu](http://www.sce.umkc.edu) or the catalog at <http://www.umkc.edu/catalog>.



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 210: Calculus I & STAT 235: Statistics	Foreign Language Requirement	No	Free Elective Hours	6-8 hours
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Please note - Prior to Year 1 (may include summer) Students must have successfully passed (with a "C" or better) Pre-calculus or a combination of a College Algebra and Trigonometry or have taken four (4) units of high school mathematics including trigonometry prior to enrolling in Math 210.

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
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Fall Semester Year 1: 16-17 hours

	<b>**Anchor I: Reasoning and Values<sup>1</sup></b> - ANCH 150 preferred		3	<sup>2</sup> Enrollment restricted. Students must pass the online ALEKS Math Placement Exam or provide transcripts showing prerequisites satisfied prior to enrolling Web site for more information: <a href="http://dev.umkc.edu/mathplacement/default.cfm">http://dev.umkc.edu/mathplacement/default.cfm</a>
	<b>**DISC 100: Reasoning and Values<sup>1</sup> (Speech and Writing)</b>		3	
	General Elective*		3	
	MATH 210: Calculus I <sup>2</sup> (Complete MATH 120: Precalculus only if not placed in MATH 210)	C	4	
	STAT 235: Elementary Statistics <sup>2</sup>	C	3	
	Complete 16 term credit hours Earn minimum 2.000 term UM GPA Earn minimum 2.000 Major GPA			




Spring Semester Year 1: 16 hours


	<b>**Anchor II: Culture and Diversity<sup>1</sup></b>		3	RooWriter Assessment Test must be taken following the successful completion of DISC 200 <a href="https://www.umkc.edu/RooWriter/logon.aspx">https://www.umkc.edu/RooWriter/logon.aspx</a>
	<b>**DISC 200: Culture and Diversity<sup>1</sup></b>		3	
	COMP-SCI 101: Problem Solving & Program I	C	3	
	COMP-SCI 191: Discrete Structures I	C	3	
	MATH 220: Calculus II <sup>2</sup> (Complete MATH 210: Calculus I only if not placed in MATH 220)	C	4	
	Complete 16 term credit hours Earn minimum 2.000 cumulative UM GPA Earn minimum 2.000 Major GPA			

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




 <p>Complete MATH 210                  Complete 32 cumulative credit hours                  Earn minimum 2.000 cumulative UM GPA                  Earn minimum 2.000 Major GPA                  Complete Anchor I and DISC 100</p>
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**Fall Semester Year 2: 15 hours**

	COMP-SCI 201R: Problem Solving & Program II	C	3	Constitution requirement may be satisfied by taking either HISTORY 101 or HISTORY 102 or POL-SCI 210.  PHYSICS 240 required for degree.
	COMP-SCI 201L: Problem Solving & Program II Lab	C	1	
	COMP-SCI 291: Discrete Structures II	C	3	
	<b>Focus C: Human Actions, Values, and Ethics<sup>1</sup></b> Constitution Requirement		3	
	<b>Focus Elective:</b> PHYSICS 240: Physics for Scientists & Engineering I <sup>1</sup>	C	5	


 <p>Complete 15 term credit hours                  Earn minimum 2.000 cumulative UM GPA                  Earn minimum 2.000 Major GPA                  Complete Anchor II and DISC 200                  Complete MATH 220                  Complete COMP-SCI 201R, COMP-SCI 201L, and COMP-SCI 291 before COMP-</p>
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**Spring Semester Year 2: 14 hours**

	COMP-SCI 281R: Computer Architecture & Organization	C	3
	COMP-SCI 303: Data Structures	C	3
	MATH 300: Linear Algebra	C	3
	PHYSICS 250: Physics for Scientists and Engineers II	C	5

 <p>Earn minimum 2.000 cumulative UM GPA                  Earn minimum 2.000 Major GPA</p>
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**Summer Semester Year 3: 0 hours if all previous courses completed**

 <p>Complete minimum 14 term credit hours                  Complete 61 cumulative credit hours                  Complete STAT 235                  Complete COMP-SCI 281R and COMP-SCI 303                  Complete RooWriter before enrolling in DISC 300.</p>
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**Fall Semester Year 3: 15 hours**


	COMP-SCI 282: Assembly Language Programming	C	3	ANCH 308 required for degree.
	COMP-SCI 394R: Applied Probability	C	3	
	COMP-SCI 431: Introduction to Operating Systems	C	3	
	<b>**Anchor III: Civic and Community Engagement<sup>1</sup></b>	C	3	

ANCH 308: Ethical Issues in Computing & Engineering			
<b>**DISC 300: Civic and Community Engagement</b> <sup>1</sup>			3

 Complete 15 term credit hours  
Earn minimum 2.000 cumulative UM GPA and Major GPA


**Spring Semester Year 3: 12-14 hours**

COMP-SCI/E&C-ENGR/INFO-TECH 300<490: CSEE/IT Elective <sup>2</sup>	C	3	
COMP-SCI 404: Introduction to Algorithms & Complexity	C	3	
COMP-SCI 420 or COMP-SCI 421A: Networking elective or COMP-SCI 371 or COMP-SCI 470: Database elective <sup>3</sup>	C	3	
<b>Focus B: Scientific Reasoning and Quantitative Analysis</b> <sup>1</sup> BIOLOGY 108/108L, BIOLOGY 109/109L or CHEM 211/211L recommended			3-5
General Elective*			3

 Complete 15 term credit hours  
Complete 91 cumulative credit hours  
Earn minimum 2.000 cumulative UM GPA and Major GPA

**Fall Semester Year 4: 12 hours**


COMP-SCI/E&C-ENGR/INFO-TECH 300<490, CSEE/IT Elective <sup>2</sup>	C	3	
COMP-SCI 420 or COMP-SCI 421A: Networking elective or COMP-SCI 371 or COMP-SCI 470: Database elective <sup>5</sup>	C	3	
COMP-SCI 441: Programming Language Design & Implementation	C	3	
COMP-SCI 449: Fundamentals of Software Engineering	C	3	

 Complete 12 term credit hours  
Earn minimum 2.000 cumulative UM GPA and Major GPA  
Must take COMP-SCI 449 and COMP-SCI 451R consecutively.

Apply for graduation.  
  
All UMKC students, except those with a previous bachelor's degree, must take the ETS-PP or MAPP Assessment Test and CS/IT majors must take the Major Field Exam in the semester before applying for graduation. For details go to: [www.umkc.edu/testingcenter](http://www.umkc.edu/testingcenter).

**Spring Semester Year 4**

COMP-SCI/E&C-ENGR/INFO-TECH 300<490: CSEE/IT Elective <sup>2</sup>	C	3	
COMP-SCI/E&C-ENGR/INFO-TECH 400<490: CSEE/IT Elective <sup>2</sup>	C	3	
COMP-SCI 451R: Software Engineering	C	3	
<b>Focus A: Arts and Humanities</b> <sup>1</sup> <a href="#">Click for options</a>			3
General Elective <sup>4</sup>			0-2

 Complete 12 term credit hours  
Complete 120 cumulative credit hours  
Earn minimum 2.000 cumulative UM GPA and Major GPA

UMKC Exit Survey  
  
CSEE Degree Completion Survey

**Graduation Requirements Summary**

Total Hours (120 minimum)	Total Hours at UMKC (30 hours min)	Major GPA	UMKC GPA
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120	30	2.00	2.00
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**Other Information**

**Non-course requirements**

**Met**

- RooWriter Assessment Test
- ETS-PP or Measure of Academic Proficiency and Progress (MAPP)
- Major Field Exam
- UMKC Senior Exit Survey
- CSEE Degree Completion Survey

<sup>1</sup> All students must take and/or establish credit for the following General Education Course Requirements: DISC 100, DISC 200, DISC 300, Anchor I, Anchor II, Anchor III, Focus A, Focus B, Focus C and Focus Elective for a total of 30 credit hours of General Education. See General Education Requirements list for appropriate courses. [www.umkc.edu/core/courses/](http://www.umkc.edu/core/courses/)

<sup>2</sup> Four CSEE/IT electives are required. Three can be 300 level or above, but the remaining elective must be 400 level or above. Students may choose between courses from COMP-SCI, E&C-ENGR and INFO-TECH. Students may replace one CSEE/IT elective with three credit hours of Internship.

<sup>3</sup> All BS CS majors must take one Networking elective and one Database Elective.

<sup>4</sup> Student should take one to five additional credit hours of General Elective courses if cumulative credit hours at the end of Spring Semester Year 3 are less than 96.

\*Students opting to take the Bioinformatics emphasis, Computer & Telecommunications Networking or Software Engineering interest areas should meet with an advisor for the corresponding list of courses before enrolling in any Focus B, Focus Elective, or elective coursework.

**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 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**

Coretta Carter-Muhammad, Computer Science and Information Technology  
 816-235-2699  
 carterlc@umkc.edu  
<http://sce.umkc.edu/contact/index.cfm>

**Academic Advisor:** \_\_\_\_\_ **Date** \_\_\_\_\_

**Faculty Advisor:** \_\_\_\_\_ **Date** \_\_\_\_\_

**Career Opportunities**

UMKC Career Services Resources: <http://www.career.umkc.edu/?q=node/87>  
 O\*Net OnLine: <http://www.onetonline.org/find/>