



**Major Map: BS Computer Science**  
**Catalog Year: 2013-2014**

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>. **Please note this Program of Study is pending final approval by the CSEE faculty.**

*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.*

**First Mathematics: Calculus I & Statistics**

**2<sup>nd</sup> Language Requirement: Not Required**

**Free Elective Hours: 6-8**

Critical Course or Benchmark	Course Subject, Number, Title and Academic Plan Benchmarks <b>Bold=UMKC General Education Core Requirement</b> *Prerequisites are Required **Co-Requisite Enrollment Required	Credit Hour	Min Recom Grade	Additional Critical Tracking Notes
◆				
<b>Prior to Year 1 (may include summer)</b>				
◆	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.			
<b>Fall Semester Year 1: 16 hours</b>				
	<b>**Anchor I: Reasoning and Values<sup>1</sup></b> -Click for Options	3		<b>SCE 101 preferred</b>
	<b>**Discourse I: DISC 100 – Reasoning and Values<sup>1</sup> (Speech and Writing)</b>	3		
	General Elective*	3		
◆	MATH 210: Calculus I <sup>2</sup>	4	C	<b>Math Entrance Test Req<sup>2</sup></b>
◆	STAT 235: Elementary Statistics <sup>2</sup>	3	C	<b>Math Entrance Test Req<sup>2</sup></b>
◆	Complete 16 term credit hours Earn minimum 2.000 term UM GPA Earn minimum 2.000 Major GPA			
<b>Spring Semester Year 1: 16 hours</b>				
	<b>Anchor II: Culture &amp; Diversity<sup>1</sup></b> -Click for Options	3		<b>Roewriter<sup>3</sup></b>
	<b>Discourse II: DISC 200 - Culture &amp; Diversity<sup>1</sup> (Speech and Writing)</b>	3		
◆	COMP-SCI 101: Problem Solving & Program I	3	C	
◆	COMP-SCI 191: Discrete Structures I	3	C	
◆	MATH 220: Calculus II	4	C	
◆	Complete 16 term credit hours Earn minimum 2.000 cumulative UM GPA Earn minimum 2.000 Major GPA			
<b>Summer Semester Year 2: ___hours</b>				
◆	Complete 32 cumulative credit hours Earn minimum 2.000 cumulative UM GPA Earn minimum 2.000 Major GPA Complete Anchor II and Discourse II			
<b>Fall Semester Year 2: 15 hours</b>				
◆	COMP-SCI 201R: Problem Solving & Program II	3	C	
◆	COMP-SCI 201L: Problem Solving & Program II Lab	1	C	
◆	COMP-SCI 291: Discrete Structures II	3	C	
	<b>Focus C: Culture and Diversity - Constitution<sup>1</sup></b> -Click for Options <sup>4</sup>	3		Constitution required for degree
◆	<b>Focus Elective - PHYS 240: PHYSICS for Science &amp; Engineering I<sup>4</sup></b>	5	C	PHYSICS 240 required for degree
◆	Complete 15 term credit hours Earn minimum 2.000 cumulative UM GPA Earn minimum 2.000 Major GPA			
<b>Spring Semester Year 2: 14 hours</b>				
◆	COMP-SCI 281R: Computer Architecture & Organization	3	C	
	COMP-SCI 303: Data Structures	3	C	
◆	MATH 300: Linear Algebra	3	C	



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◆	PHYS 250: PHYSICS for Science & Engineering II	5	C	
◆	Earn minimum 2.000 cumulative UM GPA Earn minimum 2.000 Major GPA			
<b>Summer Semester year 3: ___ hours</b>				
◆	Complete minimum 14 term credit hours Complete 61 cumulative credit hours Complete COMP-SCI 303 Complete RooWriter <sup>3</sup> Assessment before enrolling in Anchor III: COMP-SCI 304WI.			
<b>Fall Semester Year 3: 15 hours</b>				
	COMP-SCI 282: Assembly Language Programming	3	C	
	COMP-SCI 394R: Applied Probability	3	C	
	COMP-SCI 431: Introduction to Operating Systems	3	C	
	<b>Anchor III: Civic &amp; Community Engagement<sup>1</sup>- COMP-SCI 304WI required for degree</b>	3	C	<b>COMP-SCI 304WI required for degree (pending approval as Anchor 3)</b>
	<b>Discourse III: DISC 300: Civic &amp; Community Engagement<sup>1</sup></b>	3		
	Complete 15 term credit hours Earn minimum 2.000 cumulative UM GPA and Major GPA			
<b>Spring Semester Year 3: 12-14 hours</b>				
	COMP-SCI/E&C-ENGR/INFO-TECH 300<490: CSEE/IT Elective <sup>5*</sup>	3	C	
	COMP-SCI 404: Introduction to Algorithms & Complexity	3	C	
	COMP-SCI 420 or COMP-SCI 421A: Networking elective or COMP-SCI 371 or COMP-SCI 470: Database elective <sup>6</sup>	3	C	
	<b>Focus B: Scientific Reasoning &amp; Quantitative Analysis<sup>1</sup></b> -Click for Options	3-5		<b>BIOL 108/108L, BIOL 109/190L or CHEM 211/211L recommended<sup>7</sup></b>
	General Elective*	3		
	Complete 15 term credit hours Complete 91 cumulative credit hours Earn minimum 2.000 cumulative UM GPA and Major GPA			
<b>Fall Semester Year 4: 12 hours</b>				
	COMP-SCI/E&C-ENGR/INFO-TECH 300<490, CSEE/IT Elective <sup>5*</sup>	3	C	<b>Apply for graduation</b>
	COMP-SCI 420 or COMP-SCI 421A: Networking elective or COMP-SCI 371 or COMP-SCI 470: Database elective <sup>6</sup>	3	C	
	COMP-SCI 449: Fundamentals of Software Engineering	3	C	
	<b>Focus A: Arts &amp; Humanities<sup>1</sup></b> -Click for Options	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.			
<b>Spring Semester Year 4: 12-14 hours</b>				
	COMP-SCI/E&C-ENGR/INFO-TECH 300<490: CSEE/IT Elective <sup>5*</sup>	3	C	<b>UMKC Exit Survey</b>
	COMP-SCI/E&C-ENGR/INFO-TECH 400<490: CSEE/IT Elective <sup>5*</sup>	3	C	<b>CSEE Degree Completion Survey</b>
	COMP-SCI 441: Programming Language Design & Implementation	3	C	<b>Assessment Test &amp; Major Field Exam<sup>7</sup></b>
	COMP-SCI 451R: Software Engineering	3	C	
	General Elective <sup>8*</sup>	0-2		
	Complete 12 term credit hours Complete 120 cumulative credit hours Earn minimum 2.000 cumulative UM GPA and Major GPA			
	<b>Total: 120 hours</b>			

<sup>1</sup> All students must take and/or establish credit for the following General Education Course Requirements: Discourse I, Discourse II, Discourse III, 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> Enrollment is restricted. Students must pass the online Math Entrance Test prior to enrolling. See <http://cas.umkc.edu/math/> for more details.

<sup>3</sup> RooWriter Assessment Test must be taken following the successful completion of Discourse II, but must be taken the semester before enrolling in COMP-SCI 304WI. <http://cas.umkc.edu/writingcenter/StudentResources/WEPT.asp>

<sup>4</sup> Constitution requirement may be satisfied by taking either HIST 1100 or HIST 1101 or POL-SC 210

<sup>5</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>6</sup> All BS CS majors must take one Networking elective and one Database Elective.

<sup>7</sup> 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 after completing 70 credit hours and before applying for graduation. For details go to: [www.umkc.edu/testingcenter](http://www.umkc.edu/testingcenter)

<sup>8</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.

<sup>9</sup> Students opting to take the Bioinformatics emphasis, Computer & Telecommunications Networking or Software Engineering concentration should meet with an advisor for the corresponding list of courses before enrolling in any Focus B, Focus Elective, or elective coursework.



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**Non-course requirements**

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

**Met**

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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.

**Graduation Requirements Summary:**

Total Hours (120 minimum)	Totals Hrs at UMKC (30 hours min)	Major GPA (2.0 min)	UMKC GPA (2.0 min)

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

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