

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 [www.umkc.edu/catalog](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	<i>MATH 210: Calculus I</i>	Foreign Language Requirement	No	Free Elective Hours	No Free Electives
------------	-----------------------------	------------------------------	----	---------------------	-------------------

Please note:

Complete ENGLISH 110 (English Comp I) or COMM-ST 110 (Speech) or equivalents; SAT verbal 690; ACT English 30 or AP English Language/composite score of 4.2 will waive the **DISC 100 requirement**. Without one of these, students will add three credit hours of DISC 100 to their curriculum.

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: 14 -18 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://www.umkc.edu/mathplacement/">www.umkc.edu/mathplacement/</a>
	CHEM 211: General Chemistry I <b>AND</b> CHEM 211L: General Chemistry I Lab <b>OR</b> BIOLOGY 102: Biology and Living <b>AND</b> BIOLOGY 102L: Biology and Living Laboratory	C	4-5	
	<b>**DISC 100: Reasoning and Values<sup>1</sup></b> (Speech and Writing) (if not previously satisfied by ACT/SAT or previous credit)		0-3	
	E&C-ENGR 130: Engineering Graphics	C	3	
◆	MATH 210: Calculus I <sup>2</sup> (Complete MATH 120: Precalculus only if not placed in MATH 210)	C	4	

◆ Complete 14 term credit hours.  
Earn minimum 2.000 term UM GPA and minimum 2.000 Major GPA.

Spring Semester Year 1: 15 hours

◆	MATH 210: Calculus I <sup>2</sup> or MATH 220: Calculus II	C	4	PHYSICS 240 required for degree.
	<b>Focus B: Scientific Reasoning and Quantitative Analysis<sup>1</sup></b> PHYSICS 240: Physics for Science & Engineering I	C	5	
	<b>**DISC 200: Culture and Diversity<sup>1</sup></b> (Speech and Writing)		3	
	<b>**Anchor II: Culture and Diversity<sup>1</sup></b>		3	

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

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

	May use summer semester to ensure completion of 30 hours per academic year or to lighten fall and spring course loads.		
◆	Complete MATH 210. Complete 32 cumulative credit hours. Earn minimum 2.000 term UM GPA and minimum 2.000 Major GPA. Complete Anchor I AND DISC 100.		

Fall Semester Year 2: 16 hours

◆	E&C-ENGR 216: Engineering Computation	C	4	PHYSICS 250 required for degree.
◆	E&C-ENGR 226: Logic Design	C	3	
◆	E&C-ENGR 227: Logic Design Laboratory**	C	1	
	E&C-ENGR 241: Applied Engineering Analysis I	C	3	
	<b>Focus Elective</b> PHYSICS 250: Physics for Science & Engineering II <sup>1</sup>	C	5	
◆	Complete MATH 220 AND PHYSICS 240. Complete 16 term credit hours. Earn minimum 2.000 term UM GPA and minimum 2.000 Major GPA.			

Spring Semester Year 2: 17 hours

◆	E&C-ENGR 228: Introduction to Computer Design	C	3
◆	E&C-ENGR 229: Introducton to Computer Design Lab**	C	1
◆	E&C-ENGR 250: Engineering Mechanics/Thermodynamics	C	3
	E&C-ENGR 276: Circuit Theory I**	C	3
	E&C-ENGR 277: Circuit Theory I Lab**	C	1
	E&C-ENGR 341R: Applied Engineering Analysis II	C	3
	COMP-SCI 394R: Applied Probability	C	3
◆	Complete E&C-ENGR 241 AND PHYSICS 250. Complete 17 term credit hours. Earn minimum 2.000 term UM GPA and minimum 2.000 Major GPA.		

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

◆	Complete E&C-ENGR 276/E&C-ENGR 277 AND E&C-ENGR 341R. Complete Anchor II AND DISC 200. Complete 65 cumulative credit hours. Earn minimum 2.000 term UM GPA and minimum 2.000 Major GPA.		
---	--	--	--


Fall Semester Year 3: 15 hours

	E&C-ENGR 334: Semiconductors Devices	C	3	RooWriter Writing Assessment must be taken following the successful completion of DISC 200, but must be taken the semester before enrolling in DISC 300. <a href="https://www.umkc">https://www.umkc</a> .
	E&C-ENGR 376: Circuit Theory II**	C	3	
	E&C-ENGR 377: Circuit Theory II Lab**	C	1	
	E&C-ENGR 380: Signals and Systems**	C	3	
	E&C-ENGR 381: Signals and Systems LabI**	C	1	


# UMKC Major Map: Bachelor of Science in Electrical and Computer Engineering

## First-Time College Students

Catalog Year: 2016 - 2017


	E&C-ENGR 426: Microcomputer Architecture and Interfacing**	C	3	<a href="http://edu/RooWriter/logon.aspx">edu/RooWriter/logon.aspx</a> .
	E&C-ENGR 427: Microcomputer Laboratory**	C	1	
	Complete RooWriter Writing Assessment. Must complete 15 term & 80 cumulative credit hours and minimum 2.000 term & cumulative UM GPA.			

### Spring Semester Year 3: 17 hours


	E&C-ENGR 302: Electromagnetics Waves and Fields	C	4	All UMKC students must take the ETS-PP or MAPP Assessment Test after completing 70 credit hours and before applying for graduation. <a href="http://www.umkc.edu/testingcenter">www.umkc.edu/testingcenter</a> Engineering students take the Fundamentals of Engineering exam in lieu of the Major Field Exam. ( <a href="http://pr.mo.gov/engineerinterns.asp">http://pr.mo.gov/engineerinterns.asp</a> and <a href="http://www.ncees.org">www.ncees.org</a> ).
	E&C-ENGR 330: Electronic Circuits**	C	3	
	E&C-ENGR 331: Electronic Circuits Laboratory**	C	1	
	E&C-ENGR 420: Advanced Engineering Computation	C	2	
	E&C-ENGR 428R: Embedded Systems**	C	3	
	E&C-ENGR 429: Embedded Systems Laboratory**	C	1	
	E&C-ENGR 466: Power Systems I	C	3	
	Complete 17 term and 97 cumulative credit hours at the end of spring semester year 3. Must earn a minimum 2.000 term & cumulative UM GPA. Complete ECE-ENGR 228 and ECE-ENGR 229.			

### Summer Semester Year 4: 0 hours

### Fall Semester Year 4: 14 hours

	E&C-ENGR 358: Intro Control Systems or E&C-ENGR 474: Intro Communication Systems <sup>2</sup>	C	3	Apply for graduation.
	E&C-ENGR 402: Senior Design I <sup>3</sup>	C	2	HISTORY 101, HISTORY 102, or POL-SCI 210 satisfy Focus C. Focus C and Constitution course required for degree.
	E&C-ENGR 4XX: Senior Area Elective <sup>3</sup>	C	3	
	E&C-ENGR 4XX: Senior Area Elective <sup>3</sup>	C	3	
	<b>Focus C: Human Values &amp; Ethical Reasoning</b> <a href="#">Click for options</a> <sup>1</sup>		3	
	Completion of 14 term credit hours and 110 cumulative credit hours at the end of fall semester year 4. Must earn a minimum 2.000 term GPA.			

### Spring Semester Year 4: 16 hours

	<b>**Anchor III: Civic and Community Engagement</b> <sup>1</sup> ANCH 308: Ethical Issues in Computing & Engineering Required	C	3	UMKC Senior Exit Survey
	<b>**DISC 300: Civic and Community Engagement</b> <sup>1</sup> (Speech and Writing)		3	CSEE Degree Completion Survey
	E&C-ENGR 403: Senior Design II	C	1	
	E&C-ENGR 4XX: Senior Area Elective <sup>3</sup>	C	3	
	E&C-ENGR 4XX: Senior Area Elective <sup>3</sup>	C	3	
	<b>Focus A: Arts and Humanities</b> <a href="#">Click for options</a> <sup>1</sup>		3	
	Complete 16 term & 127 cumulative credit hours. Must earn a minimum term, major core, and cumulative UM GPA of 2.000.			

### Graduation Requirements Summary

Total Degree Credit Hours	Upper Level (3xx/4xx) Hour Requirement	Minimum Hour / Residency Req.	
128	36	30	
Major GPA	UM GPA	Other GPA Requirements	Other
2.000	2.000		

### Policy

- <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 1, Anchor 2, Anchor 3, 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. Go to [www.umkc.edu/core/courses](http://www.umkc.edu/core/courses)
- <sup>2</sup> Students need to take either E&C-ENGR 358 or E&C-ENGR 474, but can take both.
- <sup>3</sup> Three of the four senior electives must be from E&C-ENGR courses. If the fourth course is not an E&C-ENGR course, it must be approved by faculty advisor first. Other courses, such as special topics courses, can also be used for Senior Electives.

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.

### Academic and Career Advising

Debby Dilks, Electrical and Computer Engineering  
 816-235-1259      dilksd@umkc.edu      <http://sce.umkc.edu/contact/index.cfm>

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