

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 see the University Catalog at [umkc.edu/catalog](http://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	<b>MATH 266: Accelerated Calculus I</b>	Foreign Language Requirement	No	Free Elective Hours	No Free Electives
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Please note:

Completing 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**.

Students must have successfully passed (with a "B" 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 in high school to be prepared for major math sequence. **Students who do not place into MATH 266: Accelerated Calculus I may have to complete preparatory math coursework, adding to the total credit hours required for their degree.**


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: 15 hours

	CHEM 211: General Chemistry I <b>AND</b> CHEM 211L: General Chemistry I Lab	C C	4 1	<b>ALEKS Math Placement Exam Required<sup>2</sup></b>  If DISC 100 waived MEC- ENGR 130 can be done
	MATH 266: Accelerated Calculus I <sup>2</sup>	C	4	
	<b>**DISC 100: Reasoning and Values</b> (Speech and Writing) <sup>GE</sup> (Co-requisite Anchor I)	C	3	
	<b>**Anchor I: Reasoning and Values</b> <sup>GE, 1</sup> (Co-requisite DISC 100)	C	3	

Completion of 15 term credit hours.  
Must earn minimum 2.000 term and cumulative UM GPA.

Spring Semester Year 1: 17 hours

	MATH 268: Accelerated Calculus II (Prerequisite MATH 266)	C	3	<b>PHYS 240 required for degree</b>
	<b>Focus B: Scientific Reasoning and Quantitative Analysis</b> <sup>GE</sup> PHYS 240: Physics for Science & Engineering I (Pre/co-requisite MATH 210 or MATH 266)	C	5	
	MEC-ENGR 130 Engineering Graphics	C	3	
	<b>DISC 200: Culture and Diversity</b> <sup>GE</sup> (Speech and Writing) (DISC 100, Co-requisite Anchor II)	C	3	
	<b>**Anchor II: Culture and Diversity</b> <sup>GE, 1</sup>	C	3	

(Anchor I, Co-requisite DISC 200)		
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<p>Completion of 17 term and 33 cumulative credit hours toward degree requirements. Must earn minimum 2.000 term and cumulative UM GPA.</p>
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**Summer Semester Year 2: 0 hours if all previous courses completed**

<p>Earn minimum 2.000 term GPA                  Earn minimum 2.000 cumulative UM GPA                  Complete Anchor I and DISC 100</p>	<p>May use summer semester to lighten fall and winter course loads.</p>
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**Fall Semester Year 2: 18 hours**

<p>MEC-ENGR 270 Engineering Analysis I (MATH 268)</p>	C	4	<p>PHYS 250 required for degree</p>
<p>CIV-ENGR 275 Engineering Statics (PHYS 240, Pre/co-requisite MEC ENGR 270 or MATH 250)</p>	C	3	
<p>MEC-ENGR 219 Computer Programming for Engineers (MATH 266 or MATH 210)</p>	C	3	
<p><b>Focus C- Human Values &amp; Ethical Reasoning</b> - Click for options <sup>GE</sup></p>	C	3	
<p>PHYS 250 Physics for Science &amp; Engineering II (<b>Focus Elective</b>)<sup>GE</sup> (PHYS 240, Pre/co-requisite MATH 268 or MATH 220)</p>	C	5	

<p>Completion of 18 term credit hours. Must earn minimum 2.000 term and cumulative UM GPA.</p>
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**Spring Semester Year 2: 16 hours**

<p>MEC-ENGR 272 Engineering Analysis II (MEC ENGR 270 or MATH 250)</p>	C	4
<p>CIV-ENGR 276 Strength of Materials (CIV ENGR 275)</p>	C	3
<p>MEC-ENGR 285 Dynamics (CIV ENGR 275)</p>	C	3
<p>MEC-ENGR 299 Thermodynamics (MATH 268 or MATH 220, PHYS 240)</p>	C	3
<p>MEC-ENGR 220 Electric Circuits (MEC ENGR 219, PHYS 250, Pre/co-requisite MEC ENGR 272 or MATH 345)</p>	C	3

<p>Completion of 16 term and 67 cumulative credit hours towards degree requirements. Must earn minimum 2.000 term and cumulative UM GPA.</p>
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**Summer Semester Year 3: 3 hours**

<p>CIMM 101: Machine Shop Safety (not offered at UMKC, offered at Metropolitan Community College-Kansas City, <a href="#">Click for details</a>)</p>		1
<p>Two additional Applied Skills Credits if CIV-ENGR 401SV not already completed at UMKC.                  CIMM 102, CIMM 103, or WELD 100                  Offered at Metropolitan Community College <a href="#">Click for details</a></p>		2

<p>Civil engineering students must complete three (3) applied skills hours before the start of their junior year.</p>
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Fall Semester Year 3: 16 hours

CIV-ENGR 319 Engineering Computation and Statistics (MEC ENGR 219, MATH 220)	C	3	Complete the <a href="#">RooWriter Assessment</a> .
CIV-ENGR 335 Soil Mechanics (CIV ENGR 276, CHEM 211/211L, Machine Shop Safety)	C	3	
CIV-ENGR 321 Structural Analysis (CIV ENGR 276)	C	4	
CIV-ENGR 351 Fluid Mechanics (MEC ENGR 285, MEC ENGR 272 or MATH 345)	C	3	
CIV-ENGR 467 Construction Management (SCE 201, MEC ENGR 272 or MATH 345)	C	3	

Complete RooWriter Writing Assessment  
Completion of 16 term credit hours. Must earn minimum 2.000 term and cumulative UM GPA.

Spring Semester Year 3: 15 hours

CIV-ENGR 323 Steel Design (CIV ENGR 321)	C	3	Apply for graduation Assessment Test <sup>5</sup>
CIV-ENGR 342 Water and Wastewater (CIV ENGR 351, CHEM 211/211L)	C	3	
CIV-ENGR 357 Engineering Hydraulics (CIV ENGR 351)	C	3	
CIV-ENGR 378WI CE Materials (CIV ENGR 276, CHEM 211/211L, Machine Shop Safety)	C	3	
CIV-ENGR 318 Geographic Information Systems for Engineers (MEC ENGR 130, CIV ENGR 319)	C	3	

Completion of 15 term and 98 cumulative credit hours at the end of spring semester year 3. Must earn a minimum 2.000 term and cumulative UM GPA.

Fall Semester Year 4: 17 hours

CIV-ENGR 411 System Design I (CIV ENGR 357, CIV ENGR 467 and one of the following: CIV ENGR 323 or CE 422)	C	2	UMKC Senior Exit Survey
CIV-ENGR 422WI Reinforced Concrete (CIV ENGR 321)	C	3	
CIV-ENGR 481 Highway and Traffic Engineering (MEC ENGR 285)	C	3	
CIV-ENGR 497 Engineering Hydrology (CIV ENGR 351, CIV ENGR 319)	C	3	
CIV-ENGR 3XX/4XX Elective (See Advisor for Tracks)	C	3	
CIV-ENGR 3XX/4XX Elective	C	3	

Completion of 14 term credit hours.  
Must earn a minimum 2.000 term and cumulative UM GPA.

Spring Semester Year 4: 15 hours

CIV-ENGR 412 System Design II (CIV ENGR 411)	C	3	CIV ENGR Dept Sr Exit Degree Completion Survey
<b>DISC 300: Civic and Community Engagement</b> <sup>GE</sup> (Speech and Writing) (DISC 200, Co-requisite Anchor III)	C	3	
<b>Anchor III: Civic and Community Engagement</b> <sup>GE</sup> (Anchor II, Co-requisite DISC 300)	C	3	
CIV-ENGR 4XX Elective (See Advisor for Tracks)	C	3	
<b>Focus A: Arts and Humanities-</b> <a href="#">Click for options</a> <sup>GE</sup>	C	3	

Complete 15 term and 132 cumulative credit hours.  
Must earn a minimum 2.000 term, major core and cumulative UM GPA.

Graduation Requirements Summary

Total Hours (120 minimum)	Total Hours at UMKC (30 hours min)	Major GPA	UMKC GPA
132	30	2.000	2.000

Other Information

<sup>GE</sup>All students must take 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 GenEd. Go to [www.umkc.edu/core/courses](http://www.umkc.edu/core/courses) for a list of GenEd courses.

<sup>1</sup>The Civil & Mechanical Engineering Department recommends ANCH 150: Computing & Engineering in Society for Anchor I and ANCH 203: The Technology Enterprise for Anchor II.

<sup>2</sup>Enrollment restricted. Students must pass the online Math Entrance Test prior to enrolling (<http://cas.umkc.edu/math/>) or show prerequisite requirement has been met.

<sup>3</sup>RooWriter Test must be taken following the successful completion of DISC 200 and is a requirement in order to graduate (<https://www.umkc.edu/RooWriter/logon.apx>).

<sup>4</sup>All UMKC students must take the ETS-PP or MAPP Assessment Test after completing 70 credit hours and before applying for graduation. ([www.umkc.edu/testingcenter](http://www.umkc.edu/testingcenter)) Engineering students take the Fundamentals of Engineering exam in lieu of the Major Field Exam. (<http://pr.mo.gov/engineerinterns.asp> and [www.ncees.org](http://www.ncees.org)).

**Non-course requirements**

**Met**

- RooWriter Test
- ETS-PP or Measure of Academic Proficiency and Progress (MAPP)
- UMKC Senior Exit Survey
- Civ Engr Department Senior Exit Degree Completion Survey

Three Applied Skills hours are required before start of Junior year in program. All courses must be taken at Metropolitan Community College-Kansas City ([mcckc.edu](http://mcckc.edu)) except CIV-ENGR 401SV Surveying, offered at UMKC in the fall semester.

- CIMM 101: Machine Shop Safety - 1 hr (Required by everyone)

Choose two of the following:

- CIMM 102: Basic Mill Operation - 1 hr
- CIMM 103: Basic Lathe Operation - 1 hr
- WELD 100: Introduction to Welding/Cutting Processes - 1 hr
- CIV-ENGR 401SV: Surveying (UMKC, Fall only) - 1 hr

Policy

The School 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

Jo Ann Day, Academic Adviser  
816-235-1461  
dayjo@umkc.edu  
<http://sce.umkc.edu/>

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

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

Career Opportunities

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