

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 or the catalog at www.umkc.edu/catalog. **Please note this Program of Study is pending final approval of the Anchor III requirement.**

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	Foreign Language Requirement	No	Free Elective Hours	No Free Electives
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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**.






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 in high school.

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 AND CHEM 211L: General Chemistry I Lab	C C	4 1	ALEKS Math Placement Exam Required ²
	MATH 210: Calculus I ²	C	4	If DISC 100 waived MEC- ENGR 130 can be done
	**DISC 100: Reasoning and Values (Speech and Writing) ^{GE} (Co-requisite Anchor I)	C	3	
	**Anchor I: Reasoning and Values ^{GE, 1} (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: 18 hours

	MATH 220: Calculus II	C	4	PHYS 240 required for degree
	Focus B: Scientific Reasoning and Quantitative Analysis ^{GE} PHYS 240: Physics for Science & Engineering I (Pre/co-requisite MATH 210)	C	5	
	MEC-ENGR 130 Engineering Graphics	C	3	
	DISC 200: Culture and Diversity ^{GE} (Speech and Writing) (DISC 100, Co-requisite Anchor II)	C	3	
	**Anchor II: Culture and Diversity ^{GE, 1}	C	3	






	(Anchor I, Co-requisite DISC 200)		
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	Completion of 18 term and 33 cumulative credit hours toward degree requirements. Must earn minimum 2.000 term and cumulative UM GPA.		
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Summer Semester Year 2: 0 hours if all previous courses completed

				May use summer semester to lighten fall and winter course loads.
	Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA Complete Anchor I and DISC 100			

Fall Semester Year 2: 15 hours

	MEC-ENGR 270 Engineering Analysis I or MATH 250 Calculus III (MATH 220)	C	4	PHYS 250 required for degree
	CIV-ENGR 275 Engineering Statics (PHYS 240, Pre/co-requisite MEC ENGR 270 or MATH 250)	C	3	
	MEC-ENGR 219 Computer Programming for Engineers (MATH 210)	C	3	
	PHYS 250 Physics for Science & Engineering II (Focus Elective) ^{GE} (PHYS 240, Pre/co-requisite MATH 220)	C	5	
	Completion of 15 term credit hours. Must earn minimum 2.000 term and cumulative UM GPA.			

Spring Semester Year 2: 16 hours

	MEC-ENGR 272 Engineering Analysis II or MATH 345 Ordinary Diff Equations (MEC ENGR 270 or MATH 250)	C	4	
	MEC-ENGR 220 Electric Circuits (MEC ENGR 219, PHYS 250, Pre/co-requisite MEC ENGR 272 or MATH 250)	C	3	
	CIV-ENGR 276 Strength of Materials (CIV ENGR 275)	C	3	
	MEC-ENGR 299 Engineering Thermodynamics (MATH 220, PHYS 240)	C	3	
	MEC-ENGR 285 Engineering Dynamics (CIV ENGR 275)	C	3	
	Complete 16 term and 64 cumulative credit hours toward degree requirements. Must earn a minimum 2.000 term and cumulative UM GPA.			


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

				May use summer semester to lighten fall and winter course loads.
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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 RooWriter Writing Assessment .
	MEC-ENGR 324 Engineering Materials with lab	C	4	

(CHEM 211/211L, MEC ENGR 299, CIV ENGR 276, Machine Shop Safety)		
MEC-ENGR 356 Mechanical Component Design (Co-requisites: CIV ENGR 351 and MEC ENGR 324)	C	3
CIV-ENGR 351 Fluid Mechanics (MEC ENGR 285, MEC ENGR 272 or MATH 345))	C	3
MEC-ENGR 360 Thermal System Design (MEC ENGR 270 or MATH 250, MEC ENGR 299, Pre/co-requisite CIV ENGR 351)	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: 17 hours

MEC-ENGR 306 Computer Aided Engineering (MEC ENGR 272 or MATH 345, MEC ENGR 285)	C	3	Apply for graduation Assessment Test⁵
MEC-ENGR 399 Heat and Mass Transfer CIV ENGR 351, MEC ENGR 272 or MATH 345, Pre/co-requisite MEC ENGR 306)	C	3	
MEC-ENGR 352WI, Instrumentation and Measurements Lab (MEC ENGR 299, MEC ENGR 220, CIV ENGR 351)	C	5	
MEC-ENGR 380 Manufacturing Methods (MEC ENGR 324)	C	3	
MEC-ENGR 385 System Dynamics (MEC ENGR 272 or MATH 345, MEC ENGR 285)	C	3	

 Completion of 17 term and 97 cumulative credit hours towards degree requirements. Must earn a minimum 2.000 term and cumulative UM GPA.

Fall Semester Year 4: 15 hours

Anchor III: Civic and Community Engagement ^{GE} (Anchor II, Co-requisite DISC 300)	C	3	<i>All junior level classes must be completed before any senior level classes can be taken in the degree program.</i>
DISC 300: Civic and Community Engagement ^{GE} (Speech and Writing) (DISC 200, Co-requisite Anchor III)	C	3	
MEC-ENGR 415 Feedback Control Systems (MEC ENGR 385)	C	3	
MEC-ENGR 4XX Technical Elective or ME ESD Requirement (ME 451 or 440) ⁴	C	3	
Focus C- Human Values & Ethical Reasoning - Click for options ^{GE}	C	3	

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

Spring Semester Year 4: 15 hours

MEC-ENGR 496WI Mechanical Design Synthesis (MEC ENGR 380, MEC ENGR 356 MEC ENGR 492)	C	3	UMKC Senior Exit Survey ME ENGR Dept Sr Exit Degree
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MEC-ENGR 457 Mechatronic System Design (MEC ENGR 415, MEC ENGR 352)	C	3	Completion Survey
MEC-ENGR 4XX Technical Elective or ME ESD Requirement (ME 451 or 440) ⁴	C	3	
MEC-ENGR 4XX Technical Elective	C	3	
Focus A: Arts and Humanities- Click for options ^{GE}	C	3	



Complete 15 term and 127 cumulative credit hours.
Must earn a minimum term 2.000 term, major core and cumulative UM GPA of 2.000.

Graduation Requirements Summary

Total Hours (120 minimum)	Total Hours at UMKC (30 hours min)	Major GPA	UMKC GPA
127	30	2.000	2.000

Other Information

^{GE} 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 D for a total of 30 credit hours of GenEd. Go to www.umkc.edu/core/courses for a list of GenEd courses.

¹The Civil & Mechanical Engineering Department recommends the following course for Anchor I: SCE 101 and Anchor II: SCE 201.

²Enrollment restricted. Students must pass the online Math Entrance Test prior to enrolling (<http://cas.umkc.edu/math/>) or show prerequisite requirement has been met. Go to <http://dev.umkc.edu/mathplacement/default.cfm> for more information.

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

⁴ One ESD course required. ME 451 Power Plant Design (Fall) or ME 440 Heating & Air Conditioning (Spring) fulfills this requirement (Prereq: ME 399).

⁵All 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). 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)

Non-course requirements

Met

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

Three Applied Skills classes are required before start of Junior year in program:

< Machine Shop Safety (Required by everyone)

Choose two of the following:

< Manual Mill

< Manual Lathe

< Welding

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

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