

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. **All incoming freshmen must develop an academic plan (which maps out all courses needed to graduate within your intended major/degree). Your academic advisor is available to meet with you and create your specific plan.**

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 110 or MATH 116, or 200-level MATH/STAT	Foreign Language Requirement	No	Free Elective Hours	8-13
------------	--	------------------------------	----	---------------------	------

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: 13-16 hours

	**Anchor I: Reasoning and Values - Click for options		3	The ALEKS Math Placement Exam is required prior to enrollment in MATH 120 (or Math 210, unless pre-requisite course has been taken with C- or higher). MATH 120 or MATH 210 fulfills the CAS Math Requirement.
	**DISC 100: Reasoning and Values (Speech and Writing)		3	
◆	*MATH 210: Calculus I or MATH 120: Precalculus or MATH 125: Trigonometry (if MATH 110 has been completed for college credit already)	B	2-5	
◆	COMP-SCI 101: Programming I	B	3	
	Focus B: Scientific Reasoning and Quantitative Analysis ASTR 150: Gravity and Motion	A	3	
◆	Complete Anchor I and DISC 100 Complete 15 term hours toward degree (recommended), 12 minimum (required) Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA			





Spring Semester Year 1: 15 hours

◆	*PHYSICS 240: Physics for Scientists & Engineers I	B	4	MATH 210 or 220 fulfills CAS Math Requirement PHYSICS 240L fulfills CAS Laboratory Experience Requirement
◆	**PHYSICS 240L: Physics for Scientists & Engineers I Lab	B	1	
◆	MATH 220: Calculus II or *MATH 210: Calculus I	B	4	
	Focus Elective – ASTR 155: Interaction Light & Matter	A	3	
	Focus A: Arts and Humanities Click for options		3	
◆	Complete 15 term hours toward degree (recommended), 12 minimum (required) Complete 30 total credit hours minimum toward degree Complete three of four Core Focus Requirements Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA			





Summer Semester Year 1: 0 hours if all previous courses completed

				May use summer semester ensure completion of 30 hours per academic year or to lighten fall and spring course loads.
	Complete MATH 220: Calculus II			

Fall Semester Year 2: 15 hours

	**Anchor II: Culture and Diversity Click for options		3	
	**DISC 200: Culture and Diversity (Speech and Writing)		3	
	PHYSICS 250: Physics for Scientists and Engineers II	B	4	
	**PHYSICS 250L: Physics for Scientists and Engineers II Lab	B	1	
	*MATH 250: Calculus III	B	4	
	Complete Anchor II and DISC 200 Complete 15 term hours toward degree (recommended), 12 minimum (required) Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA			

Spring Semester Year 2: 14 hours

	PHYSICS 350: Modern Physics		3	Take the RooWriter Writing Assessment the semester immediately following DISC 200 and at least a semester before registering for a Writing Intensive course.
	*ASTR 353: Practical Astronomy (even year) or *PHYSICS 410: Thermal Physics (odd year)		3	
	CHEM 211: General Chemistry I		4	
	**CHEM 211L: General Chemistry I Laboratory		1	
	CAS Arts & Humanities Requirement - Click for options		3	
	Complete RooWriter Writing Assessment Complete 15 term hours toward degree (recommended), 12 minimum (required) Complete 60 total credit hours toward degree Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA Complete 31 total credit hours toward degree			

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

				May use summer semester ensure completion of 30 hours per academic year or to lighten fall and spring course loads.
--	--	--	--	---

Fall Semester Year 3: 15 hours


	**Anchor III: Civic and Community Engagement Click for options		3	
	**DISC 300: Civic and Community Engagement (Speech and Writing)		3	

UMKC Major Map: Bachelor of Science in Physics (Astronomy Emphasis)

First-Time College Students


Catalog Year: 2014 - 2015

	PHYSICS 310: Mechanics I		3
	PHYSICS 330: Methods of Theoretical Physics I		3
	*ASTR 355: Stellar Astrophysics (even year) or *ASTR 356: Galaxies (odd year)		3

	Complete Anchor III and DISC 300 Complete 15 term hours toward degree (recommended), 12 minimum (required) Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA
--	--

Spring Semester Year 3: 15 hours

	PHYSICS 311: Mechanics II		3	POL-SCI 210, HISTORY 101 or 102 fulfill Focus C: Human Actions, Values, and Ethics as well as the Missouri Constitution requirement.
	PHYSICS 410: Thermal Physics		3	
	Focus C: Human Actions, Values, and Ethics - Click for options (May choose Course to also fulfill MO Constitution Requirement)		3	
	Missouri Constitution course (if not fulfilled by above) – Click for options OR other CAS Social & Behavioral Sciences Requirement – Click for options		3	
	Free Elective (PHYSICS 499: Undergraduate Research recommended)		3	


	Complete 15 term hours toward degree (recommended), 12 minimum (required) Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA
---	--

Summer Semester Year 3: 0-3 hours

				Recommend summer research project internship or PHYSICS 499
--	--	--	--	---

Fall Semester Year 4: 15 hours

	*ASTR 355: Stellar Astrophysics (even year) or *ASTR 356: Galaxies (odd year)		3	Apply for graduation and complete Final Degree Audits for the following: UMKC General Education Core, CAS Degree Requirements, Major Requirements, and/or Minor Requirements. Take the ETS Proficiency Profile (EPP) exit exam.
	*PHYSICS 460: Electricity & Magnetism I		3	
	*PHYSICS 472: Introduction to Quantum Mechanics		3	
	*PHYSICS 476LW: Advanced Lab (odd year) or *PHYSICS 395LW: Computer Interfacing Lab (even year) – CAS Writing Intensive Requirement		3	
	CAS Arts & Humanities Requirement - Click for options		3	

	Complete 15 term hours toward degree (recommended), 12 minimum (required) Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA
--	--


Spring Semester Year 4: 12-15 hours

	*ASTR 465: Cosmology (odd year) or *PHYSICS 410: Thermal Physics (even year)		3	In combination with required upper-level courses, take enough Free Elective hours at the 300/400-level to meet the minimum requirement of 36 upper-level credit hours.
	*PHYSICS 461: Electricity & Magnetism II		3	
	CAS Social & Behavioral Sciences Requirement - Click for options		3	

UMKC Major Map: Bachelor of Science in Physics (Astronomy Emphasis)

First-Time College Students

Catalog Year: 2014 - 2015

	Free Elective		3	Take Major Field (MF) exam.
	<i>Free Elective (only take these credits if needed to reach 120 minimum hours)</i>		2-5	
	Complete 15 term hours toward degree (recommended), 12 minimum (required) Earn minimum 2.000 term GPA Earn minimum 2.000 cumulative UM GPA			

Graduation Requirements Summary

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

Other Information and Policy

Non-course requirements

Met

RooWriter Writing Assessment
ETS Proficiency Profile (EPP) exam
Major Field (MF) exam

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 and teacher education timetables and 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.

A minimum of 36 upper-level hours required for graduation.

Advising Contact Information

College of Arts and Sciences Advising
09 Schofield Hall (Basement)
816.235.1148
<http://cas.umkc.edu/advising/default.asp>

Career Opportunities

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