

BACHELOR OF SCIENCE IN PHYSICS—ASTRONOMY EMPHASIS, 2024-25

For more information about policies and requirements, please see the UMKC 2024-25 Catalog.

FIRST YEAR

FALL SEMESTER	HOURS	SPRING SEMESTER	HOURS
MATH 210 Calculus I	4	MATH 220 Calculus II	4
GEFSE 101 First Semester Experience	3	PHYSICS 240 Physics for Scientists & Engineers I	5
ENGLISH 110 English I: Intro to Academic Prose	3	ENGLISH 225 English II: Intermed Academic Prose	3
Communication Requirement (COMM-ST 110, 140, 212 or 277)	3	GECRT-AH Critical Thinking in Arts & Humanities	3
GECRT-SC Critical Thinking in Natural & Physical Sci	3		
TOTAL	16	TOTAL	15

SECOND YEAR

FALL SEMESTER	HOURS	SPRING SEMESTER	HOURS
MATH 250 Calculus III	4	PHYSICS 350 Modern Physics	3
PHYSICS 250 Physics for Scientists & Engineers II	5	COMP-SCI 101 Problem Solving & Programming I	3
CHEM 211/211L General Chemistry I	5	ASTR 353 Practical Astronomy*	3
		GECRT-SS Critical Thinking in Social & Behavioral Sciences	3
		General Elective (ASTR 150 or 155 recommended)	3
TOTAL	14	TOTAL	15

THIRD YEAR

FALL SEMESTER	HOURS	SPRING SEMESTER	HOURS
PHYSICS 310 Mechanics I	3	PHYSICS 311 Mechanics II	3
PHYSICS 330 Methods of Theoretical Physics	3	PHYSICS 410 Thermal Physics*	3
ASTR 355 Stellar Astrophysics**		GECDV Culture & Diversity	3
GECUE Civic & Urban Engagement	3	General Elective (ASTR 150 or 155 recommended)	3
Constitution Requirement (HISTORY 101, 102, POL-SCI 210, CJC 364 or HON 230)	3	General Elective	3
TOTAL	15	TOTAL	15

FOURTH YEAR

FALL SEMESTER	HOURS	SPRING SEMESTER	HOURS
ASTR 356** Galaxies		ASTR 465 Cosmology	3
PHYSICS 460 Electricity & Magnetism I	3	PHYSICS 461 Electricity & Magnetism II	3
PHYSICS 472 Intro to Quantum Mechanics	3	General Elective	3
PHYSICS 476LW OR 395L Advanced Laboratory OR Computer Interfacing Laboratory	3	General Elective	3
General Elective	3	General Elective	3
TOTAL	15	TOTAL	15

Additional Graduation Requirements: Civics Exam, HEIghten Exit Exam.

Total Credits to Graduate: 120

*Courses may be interchanged between Spring semesters.

**Courses may be interchanged between Fall semesters.

School of Science and Engineering

Why Major in Physics



Beyond The Classroom

Students continue to build experience by participating in our **student-led teams or organizations** such as:

- American Institute of Aeronautics and Astronautics (AIAA)
- Astro-Hour
- Design Build Fly (Aeroos)
- Esports
- Society of Physics Students (SPS)
- UMKC Robotics
- Women in Science

Students have access to the **Warko Observatory** which provides a view of the moon, Venus, Mars, Jupiter, Saturn, bright star clusters, and maybe even nebulae and galaxies.

Students can also attend **Astro-Hour** featuring discussions about recent discoveries, advancements, and unresolved problems in the fields of **astronomy, astrophysics and cosmology**.



Personalize Your Degree

Our program allows students the flexibility to:

- Earn a **BS or BA** in Physics
- Pursue an **Emphasis in Astronomy**
- Easily **add minors**
- **Double major** with a BA degree
- Earn a Geographic Information Systems Certificate

UMKC is home to Dr. Anthony Caruso, a Fellow of the **National Academy of Inventors**, for his work with nuclear fingerprinting, high-powered microwave technology, and computer chip size reduction.

Easily earn a **master's degree** through our BS to MS program which allows students to complete a graduate degree at undergraduate tuition rates.

Students can explore their interests and gain real-world experience through **undergraduate research** with the potential of being paid.



After Graduation

SSE connects students with industry partners in the area through **information sessions** and two **STEM Career Fairs** to discuss internship opportunities and future employment.

The innovative research conducted at UMKC can help students realize new avenues open to them and leads many to pursue **graduate degree programs or professional school**.

A physics background allows students the flexibility to **pursue a variety of career paths**:

- astrophysicists
- data scientists
- geophysicists
- medical physicists
- physical scientists
- process engineers/quality engineers
- quantum physicists
- variety of jobs within education and research