MINOR: ASTRONOMY

Student Learning Outcomes

Students graduating from this program will:

- Demonstrate competency in stellar astrophysics, galaxies, cosmology and practical astronomy
- Translate complicated mathematical expressions of astrophysics laws into concrete calculations and test these.
- Clearly articulate scientific information both orally and in writing.

Description of the Program

The minor in Astronomy is designed for students desiring a general background in Astronomy.

Astronomy advising questions should be directed to Professor Daniel McIntosh (McIntoshDH@umkc.edu).

Program Requirements

Students majoring in any other discipline (including Physics) in the University may elect to minor in astronomy.

There are two tracks (Track One, Track Two) each requiring a minimum of 18 credit hours in Physics and Astronomy courses, with a minimum of 9 credit hours at the 300-400 level. It is highly recommended that students follow Track One because the upper level courses will be very challenging without the solid foundation obtained in the calculus-based physics courses (PHYSICS 240/PHYSICS 250). Students must receive grades of C or better in each course.

Track One (Recommended)

Code	Title	Credits
PHYSICS 240 & PHYSICS 250	Physics For Scientists and Engineers I and Physics For Scientists and Engineers II	10
Select three of the following:		9
ASTR/PHYSICS 304	Scientific Research Preparation	
PHYSICS 350	Modern Physics With Engineering Applications	
ASTR/PHYSICS 353	Practical Astronomy	
ASTR/PHYSICS 355	Stellar Astrophysics	
ASTR/PHYSICS 356	Galaxies	
ASTR/PHYSICS 465	Cosmology	
Total Credits		**19**

Track Two (Approval Required)

Code	Title	Credits
PHYSICS 210 & PHYSICS 220	General Physics I and General Physics II	8
Select one of the following:		2-3
ASTR 150	Astronomy: Motions of the Cosmos	
ASTR 153L	Introductory Astronomy Laboratory	
ASTR 155	Astronomy: Starlight and Star Stuff	
Plus three of the following:		9
ASTR/PHYSICS 304	Scientific Research Preparation	
PHYSICS 342	Physics of Science Fiction	
PHYSICS 350	Modern Physics With Engineering Applications	
ASTR/PHYSICS 353	Practical Astronomy	
ASTR/PHYSICS 356	Galaxies	
Total Credits		**19-20**