

MINOR: ASTRONOMY

Student Learning Outcomes

Students graduating from this program will:

- demonstrate competency in stellar astrophysics, galaxies, cosmology and practical astronomy in homework and exam questions.
- 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 |
| 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 |
| 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 |