# MINOR: BIOLOGY

## Student Learning Outcomes

Students graduating from this program will:

- Identify fundamental concepts in the biological sciences, including the relationship between structure and function at all levels of biological organization, evolution and the role of natural selection in the process, ecological relationships between organisms and their environment.
- Describe cellular structure and explain the major biochemical processes that occur in cells.
- Describe and explain the mechanisms of heredity and the flow of genetic information.
- Apply knowledge in basic mathematics, chemistry, and physics to solve biological problems.
- Employ techniques and procedures commonly used in modern biology laboratories.
- Analyze and critically evaluate scientific data.
- Write clearly about topics in the biological sciences for a peer or professional audience.

## Program Requirements

| Code | Title | Credits |
|---|---|---|
| BIOLOGY 108L & BIOLOGY 108 | General Biology I Laboratory and General Biology I | 4 |
| or MOTRBIOL 100LB | MOTR Essential Biology w/ Lab - Botany | |
| or MOTRBIOL 150LB | MOTR Biology with Lab | |
| BIOLOGY 109L & BIOLOGY 109 | General Biology II Laboratory and General Biology II | 4 |
| or MOTRBIOL 100LZ | MOTR Essential Biology with Lab | |
| or MOTRBIOL 150LZ | MOTR Biology w/Lab | |
| BIOLOGY 202 | Cell Biology | 3 |
| BIOLOGY 206 | Genetics | 3 |
| Select one of the following laboratory courses: | | 2-3 |
| BIOLOGY 199L | Methods in Biological Research | |
| BIOLOGY 218L | Introductory Anatomy Laboratory | |
| or MOTRLIFS 100LA | MOTR Anatomy focused Essentials in Human Biology with Lab | |
| or MOTRLIFS 150LA | MOTR Anatomy focused Human Biology w/Lab | |
| BIOLOGY 302L | Ecology Laboratory | |
| BIOLOGY 312L | Laboratory in Genetics and Developmental Biology | |
| BIOLOGY 313L | Laboratory in Microbiology | |
| BIOLOGY 316L | Principles Of Physiology Laboratory | |
| BIOLOGY 328L | Laboratory in Histology and Cellular Ultrastructure | |
| BIOLOGY 360L | Molecular Biology Research Methods | |
| BIOLOGY 370L | Cell Biology Research Methods | |
| BIOLOGY 338L | Comparative Vertebrate Anatomy Laboratory | |
| Upper-level Biology Majors Courses [1] | | 7 |
| **Total Credits** | | **23-24** |

[1] The seven hours may include any of the upper-level lab courses listed above.

Total Biology hours:21

Standards that must be met for the minor:

1. Only grades of C- or better will be allowed to count toward fulfillment of the required 21 hours of biology coursework.
2. Students seeking a biology minor must have a minimum cumulative 2.0 UM biology GPA in courses used to fulfill the minor requirements.
3. At least 11 of the 21 required hours must be earned from BIOLOGY or LIFE-SCI coursework at UMKC.
4. At least 4 of the 7 hours of junior/senior level coursework must be earned from BIOLOGY or LIFE-SCI coursework at UMKC.