

Bachelor of Arts: Biology - Biomedical (84M)

2024-2025
57-62 hours

This emphasis of the biology major offers preparation for allopathic, osteopathic, chiropractic, dental, veterinary, optometric, podiatric and other health-related programs. In addition, it prepares students for the graduate study in biomedical sciences, i.e., pharmacology, toxicology, pathology, physiology, cellular biology, and related areas. The combination of required and elective courses needs to equal 57-62 credit hours.

Introductory Track

- BIOL 2051 – General Biology: Organismal Diversity, 4 hrs.
- BIOL 2052 – General Biology: Cell Structure & Function, 4 hrs.
- BIOL 3100 – Evolution, Ecology, & the Nature of Science, 3 hrs.
- BIOL 3140 – Genetics, 4 hrs.

Required Anatomy & Physiology

(Choose one of the options below)

- BIOL 3101 – Human Anatomy & Physiology I, 4 hrs.
 - BIOL 3102 – Human Anatomy & Physiology II, 4 hrs.
- OR**
- BIOL 3106 – Vertebrate Anatomy, 4 hrs.
 - BIOL 3102 – Human Anatomy & Physiology II, 4 hrs.

Required Chemistry

(Choose one of the options below)

- CHEM 1110 – General Chemistry I, 4 hrs.
 - CHEM 1120 – General Chemistry II, 4 hrs.
- OR**
- CHEM 1130 – General Chemistry I-II, 5 hrs.

Required Advanced Chemistry

- CHEM 2210 – Organic Chemistry I, 3 hrs.
- CHEM 2220 – Organic Chemistry II, 3 hrs.
- CHEM 2230 – Organic Chemistry Lab, 2 hrs.

Required Math

(Choose one of the options below)

- STAT 1772 – Intro to Statistical Methods, 3 hrs. (recommended option)
- OR**
- MATH 1120 – Math for the Biol. Sciences, 3 hrs.
- AND**
- MATH 1130 – Trigonometry, 2 hrs.
- OR**
- MATH 1140 – Precalculus, 4 hrs.
- OR**
- MATH 1420 – Calculus, 4 hrs.

Required Physics

- PHYSICS 1511 – General Physics I, 4 hrs.
- PHYSICS 1512 – General Physics II, 4 hrs.

Major Elective Credit Courses

(Choose *10 hrs. of elective credits)

- Biology electives are listed on reverse side

Additional Chemistry course that satisfies major elective requirement:

- *CHEM 4510 – Biochemistry I, 3 hrs.

Other Recommended Courses**:

- Additional Psychology courses
- CHEM 4520 – Biochemistry II, 3 hrs.
- PH 2160 – Medical Terminology, 2 hrs.
- PH 3330 – Health Vulnerable Populations, 3 hrs.
- PSYCH 1001 – Intro to Psychology, 3 hrs.
- SOC 1000 – Intro to Sociology, 3 hrs.
- SOC SCI 1045 - American Racial & Ethnic Minorities, 3 hrs.

Notes:

- Must have UNI cumulative and UNI major/plan GPA of 2.0, or higher, with a grade of C- (1.67), or better, in all courses applied to the major.
- *A minimum of 7 credits of BIOL 4000 electives pertinent to the major are required (CHEM 4510 – Biochemistry I cannot be counted toward this 7 credits). At least 4 credits of BIOL 4000 electives need to be taken at UNI.
- No more than 3 credits of BIOL 3190 will be counted toward biology elective requirements for this degree. For students pursuing the Honors Emphasis, the remaining credit of BIOL 3190 and BIOL 3191 will be applied to university electives.
- **For students pursuing graduate programs in allopathic or osteopathic medicine, physician assistant, or veterinary medicine, completion of Biochemistry I and II is recommended and would satisfy a Chemistry minor in addition to the BA Biology Biomedical degree.

Students invited to do Honors Research will complete 4 credit hours of BIOL 3190 – Undergraduate Research and 1 credit hour of BIOL 3191 – Senior Thesis. Students must declare the Honors Research Emphasis (84U) in order for it to reflect on the degree.

Choose 10 hrs. of Elective Credits

BIOL 3106	Vertebrate Anatomy	Fall	4 hrs. [^]
BIOL 3108	Medical Histology	Variable	4 hrs.
BIOL 3147	Cancer & Emerging Infectious Diseases	Spring	3 hrs.
BIOL 3151	General Microbiology	Fall & Spring	4 hrs.

BIOL 4114	Comparative Animal Physiology	Even Falls	4 hrs. #
BIOL 4116	Neurobiology	Spring	3 hrs. #
BIOL 4128	Cell Biology	Spring	4 hrs. #
BIOL 4129	Genomics	Even Falls	3 hrs.
BIOL 4130	Genetic Technologies in Medicine	Odd Springs	3 hrs.
BIOL 4137	Advanced Human Physiology	Odd Falls	4 hrs. #
BIOL 4144	Virology	Even Springs	4 hrs.
BIOL 4146	Developmental Biology of Animals	Spring	4 hrs.
BIOL 4150	Immunology	Fall	4 hrs.
BIOL 4157	Biostatistics	Fall	3 hrs.
BIOL 4164	Mammalogy	Fall	4 hrs.

7 credits of BIOL 4000 electives pertinent to the major are required (CHEM 4510 cannot be counted toward this 7 credits). At least 4 credits of BIOL 4000 electives need to be taken at UNI.

Research Associated Credits:

BIOL 3190	Undergraduate Research in Biology	Fall, Spring, Summer	1 – 3 hrs. ***
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Notes:

1. Prerequisite for 3000 level courses include completion of BIOL 2051, BIOL 2052, CHEM 1110 and CHEM 1120. All with a C- or higher.
2. Prerequisite for 4000 level courses include junior standing and completion of
 - a. Two semester sequence of General Biology and General Chemistry (listed above), BIOL 3100 – Evolution, Ecology & the Nature of Science, and BIOL 3140 – Genetics. All with a C- or higher.
 - b. Courses with # have additional prerequisites. Check courses catalog for complete details.
3. *** BIOL 3190 - Undergraduate Research in Biology require students to contact faculty members to inquire about available opportunities.
4. [^] BIOL 3106 can only be used as major elective credit if not already used to satisfy the Required Anatomy & Physiology sequence.
5. The official degree requirements as well as policies and procedures can be found at www.uni.edu/catalog
6. Students pursuing a biology major or minor must earn a C- or better in all coursework required for their major or minor. Additionally, students must have a UNI Major/Plan GPA and UNI Cumulative GPA of 2.0 or better at the time of graduation.