

Biological Sciences

College of Science, Engineering and Mathematics
Department of Biology and Wildlife
(907) 474-7671
mercury.bio.uaf.edu/

B.A., B.S. Degrees

Minimum Requirements for Degrees: B.A.: 130 credits;
B.S.: 130 credits

The biological sciences program provides a broad education and sound foundation in the basic principles of biology. Students who major in biological sciences may pursue either a B.A. or B.S. degree. The B.A. requires fewer credits in the major field than the B.S., but it gives greater emphasis in the social sciences and humanities and allows a greater breadth of subject matter.

The B.S. degree includes a foundation in the basic sciences and stronger requirements within the biological sciences than the B.A. Candidates who expect to teach in public secondary schools must be sure that they meet education requirements.

Major—B.A. Degree

1. Complete the general university requirements (page 106. As part of the core curriculum requirements, complete: CHEM 105X* and 106X*.)
2. Complete the B.A. degree requirements (page 109).
3. Complete the following program (major) requirements:*

BIOL 105X—Fundamentals of Biology I.....	4
BIOL 106X—Fundamentals of Biology II	4
BIOL 271—Principles of Ecology.....	4
BIOL 303—Principles of Metabolism and Biochemistry (4) or CHEM 321—Organic Chemistry (3) and CHEM 322—Organic Chemistry (3)	4-6
BIOL 310—Animal Physiology (4) or BIOL 111X and 112X—Human Anatomy and Physiology I & II (8) or BIOL 334W—Structure and Function of Vascular Plants (4) or BIOL 342—Microbiology (4)	4-8
BIOL 362—Principles of Genetics	4
BIOL 481—Principles of Evolution	4
BIOL elective	3
STAT 200—Elementary Probability and Statistics.....	3

4. Minimum credits required.....130

Major—B.S. Degree

1. Complete the general university requirements (page 106. As part of the core curriculum requirements, complete: MATH 200X* or MATH 272X*; and CHEM 105X* and 106X*.)
2. Complete the B.S. degree requirements (page 112. As part of the B.S. degree requirements, complete STAT 200* or STAT 300*. Biology foundation courses may be used toward partial fulfillment of the natural science requirement.)

3. Complete the following program (major) requirements:*

 - a. Complete the following:

BIOL 105X—Fundamentals of Biology I.....	4
BIOL 106X—Fundamentals of Biology II	4
BIOL 310—Animal Physiology (4) or BIOL 111X and 112X—Human Anatomy and Physiology I & II (8) or BIOL 334W—Structure and Function in Vascular Plants (4) or BIOL 342—Microbiology (4)	4-8
BIOL 271—Principles of Ecology.....	4
BIOL 303—Principles of Metabolism and Biochemistry (4) or CHEM 321—Organic Chemistry (3) and CHEM 322—Organic Chemistry (3)	4-6
BIOL 362—Principles of Genetics	4
BIOL 481—Principles of Evolution	4
 - b. Complete biology electives**
 - c. In addition to all other requirements, complete 2 electives (6 or more credits) from the following:
Chemistry (200-level or above)
Geosciences
Marine Science
Mathematics (200-level or above)
Physics
Space Physics and Atmospheric Sciences
Statistics

4. Minimum credits required.....130

* Student must earn a C grade or better in each course.

** A maximum of 6 credits of independent study (-97) may be applied to this requirement. Students may petition to substitute chemistry courses (up to 10 for the biology electives required for the B.S. degree).

Note: Foreign Language is encouraged by the department in meeting requirements of the core curriculum.

Note: Biology foundation courses may be used toward partial fulfillment of the natural science requirement for the B.S. degree with a major in biological sciences.

Note: Candidates for the bachelor of science degree in general science wishing to major in biological sciences must satisfy both the requirements of their major curriculum and those listed above for a B.A. degree with a major in biological sciences.

Note: Page numbers refer to the UAF 2004-2005 academic catalog, which can be viewed online at www.uaf.edu/catalog/.

Requirements for Biology Teachers (grades 7 – 12)*

- Complete all the requirements of the Biological Sciences B.A. or B.S. degree.
- Complete the following:
 BIOL 310—Animal Physiology (4) or BIOL 111X and
 BIOL 112X—Human Anatomy and Physiology (8) 4-8
 BIOL 239—Introduction to Plant Biology (4)
 or BIOL 334—Structure and Function in Vascular Plants (4)... 4
 BIOL 342—Microbiology 4
Complete one of the following:
 BIOL 305—Invertebrate Zoology (5)
 BIOL 406—Entomology (4)
 BIOL 425—Mammalogy(3)
 BIOL 426W,O/2—Ornithology(3)
 BIOL 427W,O—Icthyology (4)3-5
- Complete one of the following:
 PHIL 380—Conceptual Foundations of Science (3)
 or PHIL 382 Science & Technological Limits (3)
 or PHIL 481—Philosophy of Science (3) 3

**We strongly recommend that prospective secondary science teachers seek advising from the UAF School of Education early in your undergraduate degree program, so that you can be appropriately advised of the state of Alaska requirements for teacher licensure. You will apply for admission to the UAF School of Education's post-baccalaureate teacher preparation program, a one-year intensive program, during your senior year. Above requirements apply to all candidates who apply to the UAF School of Education Spring 2006 or later, for licensure in biology.*

Minor

- Complete the following:
 BIOL 105X—Fundamentals of Biology I..... 4
 BIOL 106X—Fundamentals of Biology II 4
- Complete 3 of the following:
 BIOL 310—Animal Physiology (4)
 or BIOL 111X and 112X—Human Anatomy and
 Physiology I and II (8)4-8
 BIOL 271—Principles of Ecology..... 4
 BIOL 303—Principles of Metabolism and Biochemistry..... 4
 BIOL 334W—Structure and Function in Vascular Plants..... 4
 BIOL 342—Microbiology 4
 BIOL 362—Principles of Genetics 4
 BIOL 481—Principles of Evolution 4
- Minimum credits required20

Note: Page numbers refer to the UAF 2004-2005 academic catalog, which can be viewed online at www.uaf.edu/catalog/.

General University Requirements

All degrees (e.g. B.A., B.S., etc.) require additional courses. Refer to specific degree and program requirements.

COMMUNICATIONS (9)

Complete the following:

- ENGL 111X (3) _____
- ENGL 211X **OR** 213X (3) _____
- COMM 131X **OR** 141X (3) _____

LIBRARY & INFORMATION SKILLS (0-1)

Complete the following:

- LS 100X **OR** 101X (0-1) _____
- OR** Successful completion of library skills competency test.

PERSPECTIVES ON THE HUMAN CONDITION (18)

Complete either the following six courses:

- ANTH 100X **OR** SOC 100X (3) _____
- ECON/PS 100X (3) _____
- HIST 100X (3) _____
- ART/MUS/THR 200X, HUM 201X **OR** ANS 202X (3) _____
- ENGL/FL 200X (3) _____
- PHIL 322X, NRM 303X, COMM 300X,
 PS 300X **OR** JUST 300X (3) _____

OR Complete 12 cr from the above list **PLUS** two semester-length courses in a single non-English or Alaska Native language at the university level **OR** three semester-length courses (9 cr) in American Sign Language.

MATHEMATICS (3-4)

Complete 3-4 credits from the following:

- MATH 107X (3) _____
- OR** MATH 131X (except for BBA) (3) _____
- OR** MATH 161X (3) _____
- MATH 200X (4) _____
- MATH 201X (4) _____
- MATH 202X (4) _____
- MATH 262X (4) _____
- MATH 272X (3) _____

NOTE: Additional 3 cr of math needed for degree requirements.

NATURAL SCIENCES (8)

Complete 8 credits from the following:

- ATM 101X (4) _____
- BIOL 103X **OR** 104X (4) _____
- BIOL 105X-106X (8) _____
- BIOL 111X-112X (8) _____
- CHEM 100X (4) _____
- CHEM 103X-104X (8) _____
- CHEM 105X-106X (8) _____
- GEOG 205X (4) _____
- GEOS 100X **OR** 120X **OR** 125X (4) _____
- GEOS 101X-112X (8) _____
- MSL 111X (4) _____
- PHYS 102X **OR** 175X (4) _____
- PHYS 103X-104X (8) _____
- PHYS 211X-212X (8) _____
- PHYS 211X-213X (8) _____
- PHYS 212X-213X (8) _____

