

# General Science

College of Natural Science and Mathematics  
Department of Physics  
(907) 474-6108  
www.uaf.edu/physics/

## B.S. Degree

Minimum Requirements for Degree: 130 credits

The B.S. degree program in general science provides a broad background in the natural sciences. The program allows specialization in at least two disciplines within the natural sciences as well as an additional area of associated interest. This degree offers more breadth in the natural sciences than other degree programs and may be classified as an interdisciplinary degree.

### Major—B.S. Degree

1. Complete the general university requirements (page 107).
2. Complete the B.S. degree requirements (page 114).
3. Complete the following program (major) requirements:
  - BIOL 105X—Fundamentals of Biology I..... 4
  - BIOL 106X—Fundamentals of Biology II ..... 4
  - CHEM 105X—General Chemistry\*\* ..... 4
  - CHEM 106X—General Chemistry\*\* ..... 4
  - GEOS 101X—The Dynamic Earth ..... 4
  - GEOS 112X—The History of Earth and Life..... 4
  - MATH 107X—Functions for Calculus ..... 4
  - MATH 108—Trigonometry ..... 3
  - MATH 200X—Calculus\*\*\* ..... 4
  - PHYS 103X—College Physics\*\* ..... 4
  - PHYS 104X—College Physics\*\* ..... 4
4. Select 1 of the following by the start of the junior year:\*\*\*\*
  - a. Two majors.
  - b. One major and two minors.
5. Complete 1 major from the following: biological sciences, chemistry, geosciences or physics. The major requires the completion of at least 20 credits in addition to the foundation courses in the discipline.\* .....20
6. Complete 1 of the following:
  - a. Complete a second major from the following: biological sciences, chemistry, geosciences, physics or mathematics. The major requires the completion of at least 20 credits in addition to the foundation courses in the discipline.\* ..... 20
  - b. Complete 2 minors, one of which must be in the natural sciences or mathematics, while the other may be selected from the following disciplines: anthropology, English, French, German, Spanish, Russian, history, political science or economics. The minor must include 12 or more credits in addition to the foundation courses in that discipline.\* .....24
7. Minimum credits required .....130

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

\*\* PHYS 211X, 212X and 213X may substitute for PHYS 103X and 104X. CHEM 212 may substitute for CHEM 105X and 106X. Complete a B.S. degree mathematics elective for 3 credits if MATH 107X and MATH 108 are not taken.

\*\*\* A student does not need to take MATH 107X and MATH 108 if the student completes MATH 200X with a C or better.

\*\*\*\* A general science student, after meeting with his/her general science advisor, should contact the head of the major/minor department as early as possible to determine course requirements in that discipline. These courses will be determined by the department head of the discipline and will reflect the student's needs as well as the intent of the general science program.

Note: One year of German or Russian is recommended.

## Requirements for General Science Teachers (grades 7–12)\*

1. Complete all the requirements of the general science B.S.
2. If the student opts for one major and two minors, both must represent science or mathematics disciplines:
3. All prospective science teachers must complete one of the following:
  - PHIL 380—Conceptual Foundations of Science (3)
  - or PHIL 382—Science and Technological Limits (3)
  - or PHIL 481—Philosophy of Science (3) .....3

Note: 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 General Science.

Note: Page numbers refer to the UAF 2005-2006 academic catalog, which can be viewed online at [www.uaf.edu/catalog/](http://www.uaf.edu/catalog/).

## Baccalaureate Core Requirements

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

### COMMUNICATION (9)

**Complete the following:**

ENGL 111X ..... (3) \_\_\_\_\_  
*ENGL 190H may be substituted.*

**Complete one of the following:**

ENGL 211X OR ENGL 213X ..... (3) \_\_\_\_\_

**Complete one of the following:**

COMM 131X OR COMM 141X ..... (3) \_\_\_\_\_

### PERSPECTIVES ON THE HUMAN CONDITION (18)

**Complete all of the following four courses:**

ANTH 100X/SOC 100X ..... (3) \_\_\_\_\_  
ECON 100X OR PS 100X ..... (3) \_\_\_\_\_  
HIST 100X ..... (3) \_\_\_\_\_  
ENGL/FL 200X ..... (3) \_\_\_\_\_

**Complete one of the following three courses:**

ART/MUS/THR 200X, HUM 201X OR ANS 202X ..... (3) \_\_\_\_\_

**Complete one of the following six courses:**

BA 323X, COMM 300X, JUST 300X, NRM 303X,  
PS 300X OR PHIL 322X ..... (3) \_\_\_\_\_

**OR** complete 12 credits from the above courses **PLUS**

- two semester-length courses in a single Alaska Native language or other non-English language **OR**
- three semester-length courses (9 credits) in American Sign Language taken at the university level.

### MATHEMATICS (3)

**Complete one of the following:**

MATH 107X, MATH 161X OR MATH 103X ..... (3-4) \_\_\_\_\_  
*\* No credit may be earned for more than one of MATH 107X or 161X.*

**OR** complete one of the following\*:

MATH 200X, MATH 201X, MATH 202X,  
MATH 262X OR MATH 272X ..... (4) \_\_\_\_\_  
*\*Or any math course having one of these as a prerequisite*

### NATURAL SCIENCES (8)

**Complete any two (4-credit) courses:**

ATM 101X ..... (4) \_\_\_\_\_  
BIOL 100X ..... (4) \_\_\_\_\_  
BIOL 103X ..... (4) \_\_\_\_\_  
BIOL 104X ..... (4) \_\_\_\_\_  
BIOL 105X ..... (4) \_\_\_\_\_  
BIOL 106X ..... (4) \_\_\_\_\_  
BIOL 111X ..... (4) \_\_\_\_\_  
BIOL 112X ..... (4) \_\_\_\_\_  
CHEM 100X ..... (4) \_\_\_\_\_  
CHEM 103X ..... (4) \_\_\_\_\_  
CHEM 104X ..... (4) \_\_\_\_\_  
CHEM 105X ..... (4) \_\_\_\_\_  
CHEM 106X ..... (4) \_\_\_\_\_  
GEOG 205X ..... (4) \_\_\_\_\_  
GEOS 100X ..... (4) \_\_\_\_\_  
GEOS 101X ..... (4) \_\_\_\_\_  
GEOS 112X ..... (4) \_\_\_\_\_  
GEOS 120X ..... (4) \_\_\_\_\_  
GEOS 125X ..... (4) \_\_\_\_\_  
MSL 111X ..... (4) \_\_\_\_\_  
PHYS 102X ..... (4) \_\_\_\_\_  
PHYS 103X ..... (4) \_\_\_\_\_  
PHYS 104X ..... (4) \_\_\_\_\_  
PHYS 115X ..... (4) \_\_\_\_\_  
PHYS 116X ..... (4) \_\_\_\_\_  
PHYS 175X ..... (4) \_\_\_\_\_  
PHYS 211X ..... (4) \_\_\_\_\_  
PHYS 212X ..... (4) \_\_\_\_\_  
PHYS 213X ..... (4) \_\_\_\_\_

### LIBRARY AND INFORMATION RESEARCH (0-1)

Successful completion of library skills competency test **OR**  
LS 100X or 101X prior to junior standing ..... (0-1) \_\_\_\_\_

### UPPER-DIVISION WRITING AND ORAL COMMUNICATION (0)

**Complete the following:**

Two writing intensive courses designated (W) ..... (0) \_\_\_\_\_  
One oral communication intensive course designated (O) ..... (0) \_\_\_\_\_  
**OR** two oral communication intensive courses designated (O/2), at the upper-division level (see degree and/or major requirements) ..... (0) \_\_\_\_\_

**TOTAL CREDITS REQUIRED** ..... **38-39**