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  
   b. Complete biology electives** .............................................. 24  
   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.)  

Requirements for Biology Teachers (grades 7 – 12)*  
1. Complete all the requirements of the biological sciences B.A. or B.S. degree.  
2. Complete the following:  
   BIOL 310—Animal Physiology (4) or BIOL 111X and 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) or BIOL 406—Entomology (4) or BIOL 425—Mammalogy (3) or BIOL 426W/O2—Ornithology(3) or BIOL 427—Ichthyology (4) ....................................................... 3-5  
   3. 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.
1. Complete the following:
   BIOL 105X—Fundamentals of Biology I ...........................................4
   BIOL 106X—Fundamentals of Biology II ...........................................4

2. 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

3. Minimum credits required ..................................................................20

* No credit may be earned for more than one of MATH 107X or 161X.

**Or any math course having one of these as a prerequisite

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### 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)
- GEOF 205X ...................................................................................(4)
- GEOF 100X ...................................................................................(4)
- GEOF 101X ...................................................................................(4)
- GEOF 112X ...................................................................................(4)
- GEOF 120X ...................................................................................(4)
- GEOF 125X ...................................................................................(4)
- MSL 111X ....................................................................................(4)
- PHYS 102X ...................................................................................(4)
- PHYS 103X ...................................................................................(4)
- PHYS 104X ...................................................................................(4)
- PHYS 110X ...................................................................................(4)
- PHYS 115X ...................................................................................(4)
- PHYS 116X ...................................................................................(4)
- PHYS 175X ...................................................................................(4)
- PHYS 211X ...................................................................................(4)
- PHYS 212X ...................................................................................(4)
- PHYS 231X ...................................................................................(4)

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

Successful completion of library skills competency test OR

LS 300X 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