B.A., B.S. Degrees

Minimum Requirements for Degrees: 120 credits

The number of new fields in which professional mathematicians find
employment grows continually. This department prepares students for
careers in industry, government and education.

In addition to the major programs, the department provides a num-
ber of service courses in support of other programs within the uni-
versity. Current and detailed information on mathematics degrees and
course offerings is available from the department.

The department maintains a math lab which is available for assis-
tance to all students studying mathematics at the baccalaureate level.
The Department of Mathematics and Statistics also offers programs
in statistics (see separate listings).

Major — B.A. or B.S. Degree

1. Complete the following pre-major requirement:
   Students must be ready to matriculate into MATH F200X before
   they will be allowed to declare mathematics as their major.

2. Complete the general university requirements (page 131).

3. Complete the B.A. or B.S. degree requirements. (See page 136. As
   part of the B.S. degree requirements, complete PHYS F103X and
   PHYS F104X, or PHYS F211X and PHYS F212X.)

4. Complete the following program (major) requirements:*  
   ** Satisfies core or B.A. or B.S. degree requirements.
   MATH F200X—Calculus I** .....................................................4
   MATH F201X—Calculus II** ....................................................4
   MATH F202X—Calculus III ......................................................4

5. Complete one of the following options:*  
   ** Satisfies core or B.A. or B.S. degree requirements.
   *** In some cases, courses with strong mathematical content from other disci-
   plines may be used as electives. Such an elective package must be approved by
   af an advisor in the Department of Mathematics and Statistics. The require-
   ment that at least 18 credits be math courses still applies.
   **** 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. Note: All mathematics
   majors — including double majors — must have an advisor from the Depart-
   ment of Mathematics and Statistics.

   Option I — Mathematics

   a. MATH F401W—Introduction to Real Analysis ..........................3
   b. Complete 21 additional credits of electives.* Acceptable elective
      courses include any math or statistics course at the 300-level or
      above, and CS 201. At least 13 credits must be math courses (for
      exceptions see below***). Following are some suggested elective
      packages:
      i. Pure math electives:
         MATH F305—Geometry .....................................................3
         MATH F307—Discrete Mathematics ....................................3
         MATH F402—Intermediate Real Analysis ............................3
         MATH F404—Topology .....................................................3
         Additional elective credits ..............................................9
      ii. Applied math electives:
         MATH F302—Differential Equations .................................3
         MATH F421—Applied Analysis ..........................................4
         MATH F422—Introduction to Complex Analysis .................3
         MATH F460—Mathematical Modeling ................................3
         Complete two of the following:
         MATH F307—Discrete Mathematics ....................................3
         MATH F310—Numerical Analysis .......................................3
         MATH F402—Intermediate Real Analysis .........................3
         STAT F300—Statistics .....................................................3
         Additional elective credits ..............................................3

   Option II — Statistics

   a. Complete the following 29 credits:
      MATH F401W—Introduction to Real Analysis (3)
      MATH F403W—Abstract Algebra (3)
      MATH F371—Probability ....................................................3
      MATH F408—Mathematical Statistics ................................3
      STAT F300—Statistics .....................................................3
      STAT F401—Regression and Analysis of Variance ..............4
      STAT F402—Statistical Sampling ......................................3
      STAT F454—Statistical Consulting Seminar .....................1
       ** or ENGL F314W—Technical Writing (3)
      STAT F414W02—Technical Writing (3)
      MATH F414W—Research Writing (3) ................................3
      CS F201—Computer Science I .........................................3
      or NRM F338—Introduction to Geographic
      Information Systems (3)
      Additional elective credits 300-level or above .................3

   5. Minimum credits required ...................................................120
   ** Students must earn a C grade (2.0) or better in each course.
   *** Satisfies core or B.A. or B.S. degree requirements.
   **** In some cases, courses with strong mathematical content from other disci-
   plines may be used as electives. Such an elective package must be approved by
   an advisor in the Department of Mathematics and Statistics. The require-
   ment that at least 18 credits be math courses still applies.
   ***** 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. Note: All mathematics
   majors — including double majors — must have an advisor from the Depart-
   ment of Mathematics and Statistics.

Minor

1. Complete the following:
   MATH F200X—Calculus I .....................................................4
   MATH F201X—Calculus II ....................................................4
   MATH F202X—Calculus III ..................................................4
   At least 9 additional credits from MATH F215, STAT F300, any
   F300- or F400-level MATH course; or electives approved by a
   mathematics advisor .......................................................9

2. Minimum credits required ...................................................21
   ** Courses completed to satisfy this minor can be used to simultaneously satisfy
   other major or general distribution requirements.
All degrees (e.g. B.A., B.S., etc.) require additional courses. Refer to specific degree and program requirements.

Baccalaureate Core Requirements
(Note: all courses for Core must be completed with C- or higher.)

COMMUNICATION (9)
Complete the following:
ENGL F111X .........................................................(3) ___
ENGL F190H may be substituted.
Complete one of the following:
ENGL F211X OR ENGL F213X .................................(3) ___
Complete one of the following:
COMM F131X OR COMM F141X .............................(3) ___

PERSPECTIVES ON THE HUMAN CONDITION (18)
Complete all of the following four courses:
ANTH F100X/SOC F100X .........................................(3) ___
ECON F100X OR PS F100X .......................................(3) ___
HIST F100X .........................................................(3) ___
ENGL/FL F200X ....................................................(3) ___
Complete one of the following three courses:
ART/MUS/THR F200X, HUM F201X OR ANS F202X ....(3) ___
Complete one of the following six courses:
BA F323X, COMM F300X, JUST F300X, NRM F303X,
PS F300X OR PHIL F322X ........................................(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 F103X, MATH F107X, MATH F161X OR
STAT F200X ............................................................(3 – 4) ___
* No credit may be earned for more than one of MATH F107X or F161X.

OR complete one of the following:
MATH F200X, MATH F201X, MATH F202X,
MATH F262X OR MATH F272X...............................(4) ___
*Or any math course having one of these as a prerequisite.

NATURAL SCIENCES (8)
Complete any two (4-credit) courses:
ATM F101X ............................................................(4) ___
BIOL F100X .........................................................(4) ___
BIOL F103X .........................................................(4) ___
BIOL F104X .........................................................(4) ___
BIOL F111X .........................................................(4) ___
BIOL F112X .........................................................(4) ___
BIOL F115X .........................................................(4) ___
BIOL F116X .........................................................(4) ___
CHEM F100X .......................................................(4) ___
CHEM F103X .......................................................(4) ___
CHEM F104X .......................................................(4) ___
CHEM F105X .......................................................(4) ___
CHEM F106X .......................................................(4) ___
CHEM F105X .......................................................(4) ___
CHEM F106X .......................................................(4) ___
GEOG F111X .......................................................(4) ___
GEOS F100X .......................................................(4) ___
GEOS F101X .......................................................(4) ___
GEOS F112X .......................................................(4) ___
GEOS F120X .......................................................(4) ___
GEOS F125X .......................................................(4) ___
MSL F111X .........................................................(4) ___
PHYS F102X .........................................................(4) ___
PHYS F103X .........................................................(4) ___
PHYS F104X .........................................................(4) ___
PHYS F115X .........................................................(4) ___
PHYS F116X .........................................................(4) ___
PHYS F117X .........................................................(4) ___
PHYS F211X .........................................................(4) ___
PHYS F212X .........................................................(4) ___
PHYS F213X .........................................................(4) ___

LIBRARY AND INFORMATION RESEARCH (0 – 1)
Successful completion of library skills competency test OR
LS F100X or F101X prior to junior standing..........(0 – 1) ___

UPPER-DIVISION WRITING AND ORAL COMMUNICATION (0)
Complete the following:
Two writing intensive courses designated (W).........(0) ___
and 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) ___

CORE CREDITS REQUIRED ...................................... 38 – 39
Minimum credits required for degree .................... 120