Statistics

College of Natural Science and Mathematics
Department of Mathematics and Statistics
907-474-7332
www.dms.uaf.edu

B.S. Degree

Minimum Requirements for Degree: 120 credits

Statistics is a collection of methods and theories for making decisions or estimating unknown quantities from incomplete information. Statistical techniques are useful, for example, in estimating plant, animal and mineral abundances; forecasting social, political and economic trends; planning field plot experiments in agriculture; performing clinical trials in medical research; and maintaining quality control in industry. Employment opportunities are excellent for statisticians in many of these areas of application.

The curriculum for the B.S. degree program in statistics was developed using guidelines proposed by the American Statistical Association and provides graduates with a strong mathematics, computation and statistics background and integrates this with an area of application. The program allows considerable flexibility in the choice of the area of application by requiring a minor in any area offered by UAF.

The statistics program is administered by the Department of Mathematics and Statistics. In addition to the B.S. in statistics, the department offers a bachelor's degree in mathematics with an emphasis in statistics. A minor in statistics is also available.

Major — B.S. Degree

1. Complete the following pre-major requirement:
   a. Students must be ready to matriculate into MATH F200X before they will be allowed to declare statistics as their major.
2. Complete the general university requirements. (See page 124. As part of the core curriculum requirements, complete MATH F200X*. ENGL F314 is recommended to fulfill one of the writing intensive course requirements.)
3. Complete the B.S. degree requirements. (See page 129. As part of the B.S. degree requirements, complete MATH F201X*.)
4. Complete the following statistics core courses:*
   MATH F202X—Calculus III 4
   MATH F314—Linear Algebra 3
   MATH F371—Probability 3
   MATH F408—Mathematical Statistics 3
   STAT F200X—Elementary Probability and Statistics (3) or STAT F300—Statistics (3) 3
   STAT F401—Regression and Analysis of Variance 4
   STAT F402—Scientific Sampling 3
   STAT F498—Senior Project 3
5. Complete two of the following statistics or mathematics electives:*
   MATH F307—Discrete Mathematics 3
   MATH F310—Numerical Analysis 3
   MATH F401W—Advanced Calculus 3
   MATH F402—Advanced Calculus 3
   MATH F460—Mathematical Modeling 3
   STAT F461—Applied Multivariate Statistics 3
   STAT, MATH or statistical discipline oriented course approved by the statistics program coordinator 3
6. Complete two of the following computational electives:*
   CS F103—Introduction to Computer Programming (3) or any higher-level CS course (3) 3
   AIS F101—Effective Personal Computer Use 3
   NRM F338—Introduction to Geographic Information Systems 3
   NRM F341—GIS Analysis 4
7. Complete a minor in any discipline in which UAF offers a minor. A mathematics minor is completed by all statistics majors and may be used to meet this requirement.
8. Minimum credits required 120

* *Student must earn a C grade (2.0) or better in each course.*

Note: A double major in statistics and math may be obtained by completing the following: 2, 3, 4, 5 and 6 above, MATH F215, F308, F401W, F490O and 9 additional credits in upper-division math or statistics. A math elective package is MATH F371 and MATH F408, and STAT F401 and STAT F402 plus 8 credits upper-division MATH or STAT. The statistics elective package is MATH F215 and MATH F401W. Minimum credits required are 60, including MATH F200X and MATH F201X. Other double majors are available.

Minor

1. Complete the following:
   STAT F200X—Elementary Probability and Statistics (3) or STAT F300—Statistics (3) 3
   STAT F401—Regression and Analysis of Variance 4
   MATH F371—Probability* 3
   MATH F408—Mathematical Statistics 3
   MATH, STAT or STAT related course work** 3
2. Minimum credits required 16

* *MATH F371 requires MATH F200X, F201X and F202X as prerequisites.*

** *e.g., BA F360, GEOS F430, ANTH F424, MATH F460, etc.*

Note: Courses completed to satisfy this minor can be used to simultaneously satisfy other major or general distribution requirements.

Note: Fisheries majors selecting the research option need only complete MATH F371 and MATH F408 in addition to their fisheries requirements to obtain a minor in statistics.

UA is an AA/EO employer and educational institution and prohibits illegal discrimination against any individual: www.alaska.edu/titleIXcompliance/nondiscrimination.

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 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) _____
GEOG F205X ..... (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 F175X ..... (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) _____
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

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