Major — BS/MS Degree

1. Complete the following admission requirements:
   a. CS major (junior preferred) or senior standing.
   b. GPA 3.25 or above based on a minimum of 24 credits. Students must maintain a cumulative GPA of 3.0 to remain in the program.
   c. Submit GRE (general) scores.
   d. Submit a study goal statement.
   e. Submit a UAF graduate application for admission.

2. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X* and any approved ethics course.)

3. Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete: MATH F201X*, PHYS F211X* and PHYS F212X*.)

4. Complete the following program (major) requirements:
   a. CS F201 — Computer Science I ........................................... 3
   b. CS F202 — Computer Science II ......................................... 3
   c. CS F301 — Assembly Language Programming ............................... 3
   d. CS F311 — Data Structures and Algorithms ................................ 3
   e. CS F321 — Operating System ............................................. 3
   f. CS F331 — Programming Languages ...................................... 3
   g. CS F441 — Systems Architecture ........................................... 3
   h. CS F471W — Senior Capstone I ........................................... 3
   i. CS F472W, O — Senior Capstone II ..................................... 3
   j. EE F341 — Digital and Computer Analysis and Design ............... 4
   k. ENGL F34W, O — Technical Writing ..................................... 3
   l. MATH elective at F300—F400-level ........................................ 3
   m. MATH F307 — Discrete Mathematics .................................... 3
   n. STAT F300 — Statistics .................................................... 3

5. Complete the following:
   a. CS F611 — Complexity of Algorithms .................................. 3
   b. CS F631 — Programming Language Implementation ................ 3
   c. CS F641 — Advanced Systems Architecture ............................ 3
   d. CS F671 — Advanced Software Engineering ............................ 3
   e. CS F690 — Graduate Seminar and Project .............................. 3
   f. CS F691 — Graduate Seminar and Project .............................. 3
   g. CS upper-division / graduate level electives ............................ 3
   h. CS graduate level electives .............................................. 3

6. Pass a written comprehensive exam in the areas of computer algorithms / theory / complexity, computer architecture, computer language and software engineering.

7. Minimum credits required .................................................. 141
   * Students must earn a C+ grade or better in each course required for the BS degree.

Note: For the master’s degree, a student must earn an A or B grade in F400-level courses. A grade of C (2.0) will be accepted in 600-level courses provided a B grade point average is maintained.

Note: This degree program must be completed in seven years or the student will be disqualified from the program. If a student is disqualified, a BS in computer science will be awarded if: 1) completed in 10 years, and 2) the student meets the BS degree requirements for computer science with the option of substituting CS F411 / F451 for CS F611 / F651.

Minor

1. Complete the following:
   a. CS F201 — Computer Science I ........................................... 3
   b. CS F202 — Computer Science II ......................................... 3
   c. Three electives at the F300- or F400-level from CS, EE F341, MATH F310, MATH F460; or electives approved by a computer science advisor

2. Minimum credits required .................................................. 15
   * Students must earn a C+ grade or better in each course used to fulfill the minor requirements.

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

Communication .............................................. 9 Credits
• ENGL F111X—Introduction to Academic Writing.........(3)
  ENGL F190H may be substituted.

Complete one of the following:
• ENGL F211X—Academic Writing about Literature.........(3)
• ENGL F213X—Academic Writing about the Social and Natural Sciences ....(3)

Complete one of the following:
• COMM F131X—Fundamentals of Oral Communication: Group Context ....(3)
• COMM F141X—Fundamentals of Oral Communication: Public Context....(3)

Perspectives on the Human Condition ......... 18 Credits

Complete all of the following four courses:
• ANTH F100X/SOC F100X—Individual, Society and Culture...........(3)
• ECON F100X or PS F100X—Political Economy ............................(3)
• HIST F100X—Modern World History ...........................................(3)
• ENGL/FL F200X—World Literature ..............................................(3)

Complete one of the following three courses:
• ART/MUS/THTR F200X—Aesthetic Appreciation: Intere Relationships of Art, Drama and Music ..............................................(3)
• HUM F201X—Unity in the Arts .....................................................(3)
• ANS F202X—Aesthetic Appreciation of Alaskan Native Performance ...(3)

Complete one of the following six courses:
• BA F323X—Business Ethics....................................................(3)
• COMM F300X—Communicating Ethics .................................(3)
• JUST F300X—Ethics and Justice .................................................(3)
• NRM F303X—Environmental Ethics and Actions ......................(3)
• PS F300X—Ethics and Society ...................................................(3)
• PHIL F322X—Ethics.................................................................(3)

Or complete 12 credits from the above courses plus one of the following:
Two semester-length courses in a single Alaska Native language or other non-English language.
Three-semester-length courses (9 credits) in American Sign Language taken at the university level.

Mathematics ..................................................... 3 Credits

Complete one of the following:
• MATH F103X—Concepts and Contemporary Applications of Mathematics .................................................................(3)
• MATH F107X—Functions for Calculus* .....................................(3)
• MATH F161X—Algebra for Business and Economics** .............(3)
• STAT F200X—Elementary Probability and Statistics...............(3)
  * No credit may be earned for more than one of MATH F107X or F161X.

Or complete one of the following:*  
• MATH F200X—Calculus I* .............................................................(4)
• MATH F201X—Calculus II ..............................................................(4)
• MATH F202X—Calculus III ..........................................................(4)
• MATH F262X—Calculus for Business and Economics .............(4)
• MATH F272X—Calculus for Life Sciences ...............................(4)
  * Or any math course having one of these as a prerequisite
  ** No credit may be earned for more than one of Math F200X, F262X or F272.

Natural Sciences ............................................. 8 Credits

Complete any two (4-credit) courses.
• CHEM F100X—Introduction to General Chemistry .................(4)
• CHEM F101X—Chemistry of Life ..............................................(4)
• CHEM F102X—Chemistry for the Life Sciences .......................(4)
• CHEM F103X—Basic Chemistry ..............................................(4)

Complete all of the following four courses:
• CHEM F105X—General Chemistry ..........................................(4)
• CHEM F106X—General Chemistry ..........................................(4)
• GEOG F111X—Earth and Environment: Elements of Physical Geography...(4)
• GEOS F100X—Introduction to Earth Science .........................(4)
• GEOS F101X—The Dynamic Earth .........................................(4)
• GEOS F106X—Life and the Age of Dinosaurs .......................(4)
• GEOS F112X—History of Earth and Life .................................(4)
• GEOS F120X—Glaciers, Earthquakes and Volcanoes ............(4)
• GEOS F125X—Humans, Earth and Environment .................(4)
• MSL F111X—The Oceans .........................................................(4)
• PHYS F102X—Energy and Society ...........................................(4)
• PHYS F103X—College Physics ...............................................(4)
• PHYS F104X—College Physics ...............................................(4)
• PHYS F115X—Physical Science I ..............................................(4)
• PHYS F175X—Astronomy ...........................................................(4)
• PHYS F211X—General Physics ...............................................(4)
• PHYS F212X—General Physics ...............................................(4)
• PHYS F213X—Elementary Modern Physics ............................(4)

Library and Information Research ...............0 – 1 Credit

Successful completion of library skills competency test or LS F100X or
LS F101X prior to junior standing

0 – 1

Upper-Division Writing and Oral Communication

Complete the following at the upper-division level:
Two writing intensive courses designated (W) and one oral communication intensive course designated (O), or two oral communication intensive courses designated (O/2) (see degree and/or major requirements)

Total credits required 38 – 39

All degrees (e.g. B.A., B.S., etc.) require additional courses.
Refer to specific degree and program requirements.
Students must earn a C- grade or better in each course used toward the baccalaureate core.