Computer science is the study of information handling and its application to the problems of the world. Computing is widely used in support of science, engineering, business, law, medicine, education and the social sciences, and offers abundant employment opportunities.

The B.S. and M.S. degrees follow the recommendations of the Association for Computing Machinery (ACM) and the Institute for Electrical and Electronic Engineers (IEEE). The B.S. degree is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

The computer science undergraduate program introduces the fundamentals of computer programming, hardware and theory. It emphasizes the application of general principles to real-world problems. Mathematics and engineering play critical roles in the core. A solid background in fundamentals enables graduates to understand the uses of today’s computers and to participate in future developments.

Major — B.S. Degree

1. Complete the general university requirements. (See page 132. As part of the core curriculum requirements, complete: MATH F200X* and any approved ethics course.)

2. Complete the B.S. degree requirements. (See page 137. As part of the B.S. degree requirements, complete: MATH F201X*, PHYS F211X* and PHYS F212X*)

3. Complete the following:* MATH F307—Discrete Mathematics.................................................3
   STAT F300—Statistics ..........................................................3

4. Complete one of the following:* MATH F302—Differential Equations ........................................3
   MATH F310—Numerical Analysis ...........................................3
   MATH F314—Linear Algebra ..................................................3
   MATH F371—Probability .......................................................3
   MATH F405W—Abstract Algebra ..........................................3
   MATH F408—Mathematical Statistics ....................................3
   MATH F460—Mathematical Modeling ....................................3

5. Complete the following program (major) requirements:* CS F201—Computer Science I .................................................3
   CS F202—Computer Science II .............................................3
   CS F301—Assembly Language Programming ..........................................................3
   CS F311—Data Structures and Algorithms ..............................................3
   CS F321—Operating System ................................................................3
   CS F331—Programming Languages ....................................................3
   CS F441—Systems Architecture ................................................3
   CS F471W—Software Engineering ..............................................3
   CS F472W,O—Senior Project and Professional Practice .................3
   EE F341—Digital and Computer Analysis and Design ..................4
   ENGL F314W,O/2—Technical Writing ........................................3
   MATH elective at F300/F400-level ...........................................3
   MATH F307—Discrete Mathematics ...........................................3
   STAT F300—Statistics ..........................................................3

6. Minimum credits required for both degrees: ..........................................141
   * Students must earn a C grade (2.0) or better in each course required for the B.S. 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 B.S. in computer science will be awarded if: 1) completed in 10 years, and 2) the student meets the B.S. degree requirements for computer science with the option of substituting CS F411/F451 for CS F611/F651.

Minor

1. Complete the following:* CS F201—Computer Science I .................................................3
   CS F202—Computer Science II .............................................3
   CS F301—Assembly Language Programming ................................................3
   EE F341—Digital and Computer Analysis and Design ..................4
   ENGL F314W,O/2—Technical Writing ........................................3
   MATH F310, MATH F460; or electives approved by a computer science advisor. ...............................9

2. Minimum credits required .........................................................................15
   * Students must earn a grade of C (2.0) 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.
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 at C- or higher.)

COMMUNICATION (9)
Complete the following:
ENGL F111X .............................................(3) ___
ENGL F110H 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 F107X ...................................................(4) ___
CHEM F108X ...................................................(4) ___
CHEM F112X ...................................................(4) ___
CHEM F125X ...................................................(4) ___
CHEM F126X ...................................................(4) ___
CHEM F161X ...................................................(4) ___
CHEM F162X ...................................................(4) ___
CHEM F163X ...................................................(4) ___
CHEM F164X ...................................................(4) ___
CHEM F165X ...................................................(4) ___
CHEM F166X ...................................................(4) ___
CHEM F167X ...................................................(4) ___
CHEM F168X ...................................................(4) ___
CHEM F169X ...................................................(4) ___
CHEM F171X ...................................................(4) ___
CHEM F172X ...................................................(4) ___
CHEM F173X ...................................................(4) ___
CHEM F174X ...................................................(4) ___
CHEM F175X ...................................................(4) ___
CHEM F176X ...................................................(4) ___
CHEM F177X ...................................................(4) ___
CHEM F178X ...................................................(4) ___
CHEM F179X ...................................................(4) ___
CHEM F180X ...................................................(4) ___
CHEM F181X ...................................................(4) ___
CHEM F182X ...................................................(4) ___
CHEM F183X ...................................................(4) ___
CHEM F184X ...................................................(4) ___
CHEM F185X ...................................................(4) ___
CHEM F186X ...................................................(4) ___
CHEM F187X ...................................................(4) ___
CHEM F188X ...................................................(4) ___
CHEM F189X ...................................................(4) ___
CHEM F190X ...................................................(4) ___
CHEM F190H may be substituted.

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