Major—B.S. Degree

1. Complete the general university requirements. (See page 112. As part of the core curriculum requirements, complete MATH 200X, CHEM 105X and CHEM 106X.)

2. Complete the B.S. degree requirements. (See page 117. As part of the B.S. degree requirements, complete MATH 201X, PHYS 211X and PHYS 212X.)

3. Complete the following program (major) requirements:*  
   ES 101—Introduction to Engineering........................................3
   ES 201—Computer Techniques..................................................3
   ES 209—Statistics.......................................................................3
   ES 210—Dynamics......................................................................3
   ES 301—Engineering Analysis..................................................3
   ES 307—Elements of Electrical Engineering..............................3
   ES 331—Mechanics of Materials................................................4
   ES 341—Fluid Mechanics..........................................................4
   ES 346—Basic Thermodynamics...............................................3
   ESM 450W—Economic Analysis and Operations.......................3
   MATH 202X—Calculus..................................................................4
   MATH 302—Differential Equations............................................3
   ME 302—Mechanical Design I....................................................4
   ME 308—Measurement and Instrumentation............................3
   ME 313—Mechanical Engineering Thermodynamics..................3
   ME 321—Industrial Processes....................................................3
   ME 334—Elements of Material Science/Engineering..................3
   ME 403—Mechanical Design II..................................................3
   ME 408—Mechanical Vibrations.................................................3
   ME 415W—Thermal Systems Laboratory..................................3
   ME 441—Heat and Mass Transfer..............................................3
   ME 487WO—Design Project......................................................3
   ME electives**..........................................................................6
   Technical electives***..............................................................3
   Electives.....................................................................................2

4. Minimum credits required.................................................................131

* Student must earn a C grade or better in each of the program (major) requirements, with exception of ES 101.
** Mechanical engineering course at 400-level or above.
*** Engineering course at 400-level or above.

Note: Students electing to complete an emphasis in aerospace engineering must complete the sequence of aerospace courses (ME 450, 451, 452 and 453) as part of their program requirements and complete a senior design project that is related to aerospace engineering.

Note: Students electing to complete an emphasis in petroleum engineering must complete the sequence of petroleum-related course (ME 409 and 416 or equivalent, plus two 400-level PETE courses) as part of their program requirements and complete a senior design project that is related to petroleum engineering.

Note: Students must plan their elective courses in consultation with their mechanical engineering faculty advisor, and obtain the advisor's approval for all elective courses.

Note: Page numbers refer to the UAF 2006-2007 academic catalog, which can be viewed online at www.uaf.edu/catalog/.
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)
GEOG 205X .............................................................(4)
GEOS 100X .............................................................(4)
GEOS 101X .............................................................(4)
GEOS 112X .............................................................(4)
GEOS 120X .............................................................(4)
GEOS 125X .............................................................(4)
MSL 111X ...............................................................(4)
PHYS 102X ..............................................................(4)
PHYS 103X ..............................................................(4)
PHYS 104X ..............................................................(4)
PHYS 115X ..............................................................(4)
PHYS 116X ..............................................................(4)
PHYS 175X ..............................................................(4)
PHYS 211X ..............................................................(4)
PHYS 212X ..............................................................(4)
PHYS 213X ..............................................................(4)

LIBRARY AND INFORMATION RESEARCH (0–1)
Successful completion of library skills competency test OR
LS 100X 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