{bachelor's degrees}

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How to Earn a Bachelor's Degree

To earn a UAF degree, you must satisfy three sets of requirements: general university requirements, degree requirements and program (major) requirements. General university requirements and degree requirements are described in this section of the catalog; major requirements are found in the Bachelor's Degree Programs section; for bachelor's degree requirements in brief, see chart on pages 138 – 139.

If your degree program is delivered collaboratively within the UA system, credits you earn from each UA institution will be counted toward fulfillment of degree requirements and the minimum institutional residency requirements. You must contact Admissions to bring any credit from another UA system in. Credits will not transfer automatically. Institutional residency requirements are the minimum number of credits you must earn from the campus where you earn a degree.

General University Requirements

For a UAF bachelor's degree, you need at least 120 semester credits, including transfer credits. Of these, 39 credits must be upper-division (300-level or above) of which 24 must be UA residence credits and 15 must be UAF credits.

At least 30 semester credits applicable to any bachelor's degree must be earned at UAF. Transfer students need to earn at least 24 upper-division semester credits at UA of which 15 must be UAF credits. Transfer students must earn at least 12 semester credits in the major and at least 3 semester credits in the minor. You must earn a minimum GPA of 2.0 in all work as well as in your major and minor fields. In addition, you must earn a minimum C (2.0) grade in courses required for your major requirements.

Unless otherwise specified by the appropriate academic unit, a course may be used more than once toward fulfilling degree, certificate, major and minor requirements. Credit hours for these courses count only once toward total credits required for the degree or certificate. Certifying that you have met all major and minor requirements is the responsibility of your department faculty, who notify the Registrar's Office.

If you want to use correspondence study credits from a school other than UAF to satisfy degree requirements, you must have approval for those courses by the dean of the school or college from which you will graduate; otherwise, you take the risk of not having the courses accepted.

Since ENGL F211X and F213X are writing courses, either will satisfy the second half of the requirement in written communication for the bachelor's degree. But you can't enroll in ENGL F211X or F213X without first fulfilling the ENGL F111X requirement. (See Local Advanced Placement Credit — English.)

TABLE 20 **GENERAL UNIVERSITY REQUIREMENTS FOR BACCALAUREATE DEGREES**

Minimum number of credits	120 credits
Credits earned at UAF (residence credit)	30 credits
Upper-division credit (courses with numbers between F300 and F499)	39 credits total (some degrees require more); 24 of the 39 must be earned at UA and 15 at UAF
Additional UAF credit that must be earned by transfer students	12 credits in the major; 3 credits in the minor
Grade point average	2.0 cumulative and 2.0 in both the major and minor
Minimum grades for major	No grade lower than C (2.0) in courses required for major
Catalog year that can be used to determine requirements	May use any catalog in effect when enrolled as a degree-seeking student, regardless of major; seven-year limit on catalog year
Second degree	24 credits beyond the first bachelor's degree and all requirements for the second degree must be met

MAJORS

You may declare a major when you are admitted to UAF as a degree-seeking undergraduate student. If you haven't chosen a major you'll be enrolled as a general studies student. Non-degree students are not eligible to declare a major, be assigned class standing or receive financial aid.

Students enrolled in associate degree or certificate programs who want to declare a bachelor's degree major must apply for admission to a degree program following the standard admission process for bachelor's degree programs. The same is true for students enrolled in a bachelor's degree program who want to declare an associate degree or certificate program major (See admission requirements on page 25.)

- **Changing your Major**
  Undergraduate students may change majors by completing a change of major form available from the Registrar's Office or online at the registrar website. A change of major becomes effective after it is processed by the Registrar's Office. Graduating seniors must have change of majors submitted with their graduation application to be considered in that program.

CONCENTRATIONS

A concentration is an area of emphasis including the major core courses within a student's degree program. Some programs at UAF require a concentration, others do not. A student may only earn one degree in a specific discipline once. Using different concentrations within a degree program to count as different degrees is not allowed. Double concentrations may be permitted but must be petitioned through the standard undergraduate petition process.

MINORS

A minor is a component of a bachelor's degree. The bachelor of arts, bachelor of arts and sciences and bachelor of emergency management degrees all require a minor. You must satisfactorily complete the requirements for a minor before a B.A., B.A.S., or B.E.M. degree can be awarded. A minor is optional for bachelor of science and bachelor of business administration degrees.

A minor from UAF consists of a minimum of 15 credits, at least 3 of which have to be earned at UAF. Students must earn a cumulative GPA of at least 2.00 (C) in the minor and follow minor requirements from the same academic catalog used for their bachelor's program. An associate of applied science degree or certificate of at least 30 credits earned at any regionally accredited college or university may be used to meet requirements for a minor in B.A. and B.A.S. degree programs.

Some minors require more than 15 credits and approval from the department. Refer to specific requirements listed in the Bachelor's Degree Program section. Students seeking minors can use DegreeWorks to review their options. Results in DegreeWorks will be more accurate after submitting a Declaration of Minor form to the Registrar's Office by the beginning of the senior year.

SECOND BACHELOR'S DEGREE

If you're a UAF graduate and want to earn a second bachelor's degree, you must complete at least 24 hours of credit beyond the first bachelor's degree. You must meet all general university requirements, degree requirements and major requirements for both degrees.

If you hold a bachelor's degree from another college or university, you must be accepted for admission as a transfer student. You have to meet all general university requirements (including residency requirement), degree and major requirements. If you graduated from a regionally accredited college or university, however, you will be considered to have completed the equivalent of the UAF baccalaureate core.

DOUBLE DEGREES

If you want to earn more than one UAF bachelor's degree, you must complete all general requirements as well as all major and minor requirements (if any) for all degrees. You'll need to earn at least 24 semester credit hours beyond the total required for the first degree before any additional degrees can be awarded. For two degrees you complete at the same time, you may follow requirements from two different catalogs.

RESIDENCE CREDIT

Residence credit is course credit earned through any unit of UAF. Formal classroom instruction, correspondence study, distance-delivered courses, individual study or research at UAF are all considered residence credit. On the other hand, transfer credit, advanced placement credit, credit for prior learning, military service credit and credit granted through nationally prepared examinations are not considered resident credit, nor are credit by examination credits earned through locally prepared tests. None of these types of credit can be applied to UAF residency requirements. UAF residence credit takes precedence over any non-resident credits. For example, if a student has AP credit for a course, but takes the same courses at UAF, the AP credit will be excluded and the UAF course will be applied to the degree requirements.

RESIDENCY REQUIREMENT

Most universities have residency requirements that call for a certain number of credits toward a degree to be earned at the degree-granting school. At UAF, the residency requirement for bachelor's degrees is 30 resident credits.

DEGREE REQUIREMENTS AND TIME LIMITS

You may complete degree requirements in effect and published in the UAF catalog in any one of the previous seven academic years in which you are enrolled as a degree

TABLE 21 **DIFFERENCES BETWEEN DOUBLE MAJORS AND DOUBLE DEGREES**

	Double Majors	Double Degrees
Degree(s) earned	One bachelor's degree is earned. The bachelor of arts (B.A.) degree requires the completion of two majors rather than a major and a minor. Majors are selected from those approved for the B.A. degree. The bachelor of science (B.S.) degree requires the completion of a double major instead of a single major. Majors are selected from those approved for the B.S. degree.	More than one bachelor's degree is earned. Can be the same degree (e.g. two B.A.'s) or different degrees, (e.g., B.A. and B.S., B.B.A. and B.S., B.F.A. and B.A., etc.). Each degree is independent of the other. If requirements for one degree are not completed as scheduled, the other degree may be awarded if all requirements are met.
Graduation Application	A single graduation application and fee is required.	A separate graduation application and fee is required for each degree.
Catalog Year	A single catalog is followed for both majors to meet requirements.	Different catalogs may be followed to meet requirements for each degree.
General university requirements and major requirements	All general university requirements and all major requirements for both majors must be met.	All general university requirements as well as all major and minor requirements (if any) must be met for each degree.
Credit hours required	If one major is from a program that requires 120 total credits and the other major is from a program that requires 130 total credits, the 130 total credits must be completed.	At least 24 semester credit hours beyond the total required for the first degree must be completed before an additional degree can be awarded.

student for a bachelor's degree. You're considered enrolled in your degree program when you complete the appropriate degree-seeking student registration procedure. If you do not enroll for a semester or more, or if you enroll through the non-degree student registration process, you aren't considered enrolled as a degree student during that time.

EXCEPTIONS TO DEGREE REQUIREMENTS

Occasionally an undergraduate student may request an exception to an academic requirement or regulation. Requests for an academic dispensation must be approved by petition. If you submit a petition on the basis of a disability, the coordinator of disability services will be consulted. Petition forms are available at the Registrar's Office or online at the registrar website. Forms need to be returned to the Registrar's Office with required signatures of approval. The Registrar's Office will notify you once the appropriate person or committee has made a decision about whether to approve your petition. Academic petitions fall into three categories and each involves different processes:

- **Core Curriculum Petitions**
  If your petition deals with baccalaureate core requirements, your advisor and the head of the department of the academic area involved must grant approval. Submit your signed petition to the Registrar's Office. It will then be forwarded to the chair of the faculty senate core curriculum review committee for consideration.
- **Major or Minor Degree Requirement Petitions**
  If you want to waive or substitute courses within your major or minor requirements, you need approval signatures from your advisor and the department or program head of your major or minor area. Submit your signed petition to the Registrar's Office.
- **Petitions for Other Requirements**
  If your petition deals with general university and/or specific requirements for your degree or other academic policies, you need approval from your advisor and the dean or director of the college or school in which your major is located. Submit your signed petition to the Registrar's Office. It will then be forwarded to the provost for consideration.

RESERVING COURSES FOR GRADUATE PROGRAMS

Seniors who have only a few remaining requirements for a bachelor's degree may take courses at the 400- or 600-level graduate course level and have them reserved for an advanced degree. Courses reserved for use toward a graduate program cannot also be counted toward requirements for your bachelor's degree. Unless otherwise notified in writing that the courses are to be used toward the undergraduate program, 600-level graduate courses will automatically be reserved for the advanced degree. To reserve one or more courses, you must be in your final year of an undergraduate program. Submit a written request to the Registrar's Office during the first four weeks of the semester. The request should identify which semester courses you want reserved for graduate study and not counted toward your bachelor's degree. (Reserving courses does not, however, assure that a graduate advisory committee will accept them as part of your eventual graduate program.)

GRADUATION

- **Responsibility**
  You are responsible for meeting all requirements for graduation. You are encouraged to use DegreeWorks throughout your college career to ensure you are on track to graduate.
- **Application for Graduation**
  You need to formally apply for graduation. An application for graduation and non-refundable fee must be filed with the Registrar's Office. We encourage students to apply the semester prior to the semester you plan to graduate. If you file your application by the published deadline, the graduation application fee is $50. If you miss that deadline, you can submit a late application for graduation by the published late graduation deadline for that semester. The fee for a late application is $80. Applications for graduation filed after the late deadline are processed for graduation the following semester. Students who apply for graduation and who do not complete degree requirements by the end of the semester must reapply for graduation and repay the fee.
- **Diplomas and Commencement**
  UAF issues diplomas to graduates three times a year: in September, January and June. Students who complete degree requirements for UA Board of Regents-approved academic programs during the academic year are invited to participate in the annual commencement ceremony at the end of spring semester.

  Names of students receiving degrees/certificates appear in the commencement program and are released to the media unless you submit a written request not to do so to the graduation department. Students who do not want their names released can indicate so on the application for graduation form. Graduates are responsible for ordering caps and gowns through the UAF bookstore in early spring.
- **Graduation with Honors**
  Graduation with honors is a tribute that recognizes academic achievement. Honors graduates have earned a cumulative GPA of 3.5 or higher in all college work. If a student's overall cumulative GPA is 3.5 or higher, a student graduates with the distinction of cum laude; 3.75 or higher, magna cum laude; 3.9 or higher and no grade lower than A-, summa cum laude. Your cumulative GPA for graduation with honors is based on all college work attempted at UAF, including any repeated or omitted credits due to fresh start.

  For transfer students to be considered for graduation with honors, they must have:
  - 3.5 cumulative GPA in all attempted UAF credits, and
  - UAF residence credit of 48 semester hours for a bachelor's degree.

  Once those requirements are met, a cumulative GPA is calculated combining all college work attempted at UAF, as

well as all college work attempted at any other institutions you've attended, including repeated credits and any credits that may not have been accepted for transfer to UAF. The combined cumulative GPA must also be 3.5 or higher for a transfer student to graduate with honors.

Types of Bachelor's Degrees

- **Bachelor of Arts**
  The B.A. degree emphasizes written and oral communication skills, creative thinking, critical analyses of texts, understanding cultures, and a working knowledge of social, political and historical contexts. The degree is typically pursued by students whose major areas of study are directed toward humanities, arts and social science disciplines.
- **Bachelor of Arts and Sciences**
  The B.A.S. degree encompasses the contexts of social sciences, mathematics, science, as well as culture and diversity. Students who want a foundation in these areas as well as a broad spectrum of knowledge pursue this degree.
- **Bachelor of Business Administration**
  The B.B.A. degree is the undergraduate equivalent of an M.B.A. Students explore a wide spectrum of business-related issues to develop advanced business, management and administration skills required in organizational settings at senior levels, and to accelerate high-level career development in the workplace.
- **Bachelor of Emergency Management**
  The B.E.M. degree offers a business administration curriculum tailored to meet the needs of a fire department business manager with a minor in Leadership and Civic Engagement.
- **Bachelor of Fine Arts**
  The B.F.A. degree has a rigorous curriculum designed to prepare talented students for professional careers in the arts.
- **Bachelor of Music**
  The B.M. degree encourages acquisition of skills and display of talent in music, with special emphasis on aesthetic performance and understanding.
- **Bachelor of Science**
  The B.S. degree emphasizes oral and written communication skills and analytical skills for examining and solving problems. The degree is typically pursued by students whose major areas of study are directed toward natural sciences, mathematics, statistics, engineering, computer science and some social science fields.
- **Bachelor of Technology**
  The B.T. interdisciplinary degree is designed for students with technical or vocational backgrounds who want to enhance their experiences with more advanced academic pursuits.

Bachelor's Degree Requirements

THE CORE CURRICULUM

For a summary of the bachelor degree requirements see Table 22. Undergraduate bachelor's study at UAF is characterized by a common set of learning experiences known as the Core Curriculum. The core provides students with a shared foundation of skills and knowledge that, when combined with specialized study in the major and other specific degree requirements, prepares students to better meet the demands of life in the 21st century. Through the baccalaureate core experience, every UAF student is expected to achieve:

- multidimensional competency in written and oral English — including comprehension of complex materials and creation of clearly organized presentations of soundly reasoned thought in both oral and written form;
- a solid grasp of quantitative reasoning and mathematical application;
- an intellectual comfort with the sciences — including the scientific method, frameworks that have nurtured scientific thought, traditions of human inquiry and the impact of technology on the world's ecosystems;
- an appreciation of cultural diversity and its implications for individual and group values, aesthetics and social and political institutions;
- an understanding of global economic interdependence, sense of historical consciousness and a more critical comprehension of literature and the arts;
- a better understanding of one's own values, other value systems and relationships between value systems and life choices.

If you completed your bachelor's degree from a regionally accredited institution, you will be considered to have completed the equivalent of the baccalaureate core when you have been officially accepted to an undergraduate degree program at UAF.

COURSE CLASSIFICATIONS FOR THE BACCALAUREATE CORE

Courses that may be used to satisfy general baccalaureate core requirements have course numbers ending with "X." For example, English F111X, Communication F141X and other "X" courses meet specific core requirements. See the requirements for the baccalaureate core for a listing of other specific core courses. Courses meeting the upper-division writing intensive and oral communication intensive requirements for the baccalaureate core are identified in the course description of the catalog with the following designators:

O — oral communication intensive course
W — writing intensive course.

Two courses designated "O/2" are required to complete the oral communication intensive requirement.

Baccalaureate Core

Courses used to meet a science or mathematics core requirement may also be used to satisfy the major and/or minor degree requirements. Other core courses may not be used to meet any other requirements for a degree.

Requirements	Credits
Communication	**9**
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**
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)	12
Complete one of the following three courses: • ART/MUS/THR F200X—Aesthetic Appreciation: Interrelationship of Art, Drama and Music (3) • HUM F201X—Unity in the Arts (3) • ANS F202X—Aesthetic Appreciation of Alaskan Native Performance (3)	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)	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.	6 – 9
Mathematics	**3**
Complete one of the following: • MATH F103X—Concepts and Contemporary Applications of Mathematics (3) • MATH F107X—Functions for Calculus* (4) • 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*	3 – 4
Natural Sciences	**8**
Complete any two (4-credit) courses. • ATM F101X—Weather and Climate of Alaska (4) • BIOL F100X—Human Biology (4) • BIOL F103X—Biology and Society (4) • BIOL F104X—Natural History (4) • BIOL F111X—Human Anatomy and Physiology I (4) • BIOL F112X—Human Anatomy and Physiology II (4) • BIOL F115X—Fundamentals of Biology I (4) • BIOL F116X—Fundamentals of Biology II (4) • CHEM F100X—Chemistry in Complex Systems (4) • CHEM F103X—Basic General Chemistry (4) • CHEM F104X—Beginnings in Biochemistry (4) • 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 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 F116X—Physical Science II (4) • PHYS F175X—Astronomy (4) • PHYS F211X—General Physics (4) • PHYS F212X—General Physics (4) • PHYS F213X—Elementary Modern Physics (4)	8
Library and Information Research	**0 – 1**
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**

Beyond the Core

BACHELOR OF ARTS

Requirements	Credits
Complete the baccalaureate core	**38 – 39**
Complete the following B.A. requirements in addition to the core:	
Humanities and social sciences • Any combination of courses at the F100-level or above, with a minimum of 6 credits from the humanities and a minimum of 6 credits in the social sciences OR up to 12 credits in a single non-English language taken at the university level and a minimum of 6 credits in social science.	18
Mathematics • One course at the F100-level or above in mathematical sciences (math, computer science, statistics)	3

Complete one of the following:	
• Minor complex*	at least 15
• Foreign/Alaska Native language/American Sign language option Two years study of one foreign or Alaska Native language or American Sign language at the university level (high school language credits or native language proficiency may allow students to begin at the intermediate or advanced level)	12 – 18
Major complex*	at least 30
Electives	12 – 19
Minimum credits required for degree	**120***

Of the above, at least 39 credits must be taken in upper-division (300-level or higher) courses. Courses beyond 30 credits in a major complex and 15 credits in a minor complex that are not in the primary discipline of that major or minor may be used to fulfill the B.A. degree requirements in humanities, social sciences or mathematics. Courses used to fulfill minor degree requirements may be used at the same time to fill major or general distribution requirements if so designated.

* *Departmental requirements for majors and minors may exceed the minimums indicated. Specific requirements are listed in the following section.*

* *Students who hold a bachelors degree from a regionally accredited institution are not required to complete the minor complex.*

- **Minors**
  Minors are offered in many subject areas. Requirements for minors are listed in the following section. See the table on pages 4 – 5 for a list of all available degrees, including minors.

  An associate of applied science (A.A.S.) degree or certificate of at least 30 credits earned at any regionally accredited college or university may be used to meet requirements for a minor for the bachelor of arts (B.A.) degree. Students who hold a bachelors degree from a regionally accredited institution are not required to complete the minor complex.
- **Double Majors**
  If you're a bachelor of arts degree candidate, you may complete two majors rather than a major and a minor. Your majors must be selected from those approved for the bachelor of arts degree. You'll need to complete all general requirements plus all requirements for both majors. If you're completing a double major, you need to officially declare both majors either when you're admitted or through the change of major procedure. You'll need to follow the degree requirements in a single catalog for both majors.

BACHELOR OF SCIENCE

Requirements	**Credits**
Complete the baccalaureate core	**38 – 39**
Complete the following B.S. requirements in addition to the core:	
Natural sciences • A one-year sequence in Core-designated natural science courses (see the Natural Sciences List on the previous page). The total natural science courses used to satisfy this requirement as well as the core requirement shall represent at least two different natural sciences.	8
Mathematics • The Baccalaureate Core shall include a calculus course of at least 3 credits. In addition, a 3-credit course in mathematics, computer science or statistics is required.	3
Major complex*	at least 30
Minor complex (optional)*	15 or more
Electives	25 – 40
Minimum credits required for degree	**120***

Of the above, at least 39 credits must be taken in upper-division (300-level or higher) courses. Courses beyond 30 credits in a major complex and 15 credits in a minor complex that are not in the primary discipline of that major or minor may be used to fulfill the B.S. degree requirements in mathematics or natural science. Courses used to fulfill minor degree requirements may be used at the same time to fill major or general distribution requirements if so designated.

* Departmental requirements for majors and minors may exceed the minimums indicated, and most B.S. degree programs require 130 credits. Specific requirements are listed in the following section.

- **Double Majors**
  As a bachelor of science degree candidate, you may complete a double major instead of a single major. Your majors must be selected from those approved for the bachelor of science degree. You'll need to complete all general requirements plus all requirements for both majors. If you're completing a double major, you need to officially declare both majors either when you're admitted or through the change of major procedure. You'll need to follow the degree requirements in a single catalog for both majors.
- **Optional Minor**
  You may elect to complete a minor with the B.S. degree under the following circumstances:
  1. You must declare your minor before the beginning of your final semester in the B.S. degree program. You need to complete a Declaration of Minor form and file it with the Registrar's Office by the end of registration.
  2. Any minor approved for the B.A. degree may serve as a minor for the B.S. degree. All general and specific requirements for minors are the same as those listed for B.A. degree minors, including that courses used to meet minor requirements may not be used to meet major or general distribution requirements unless so designated. The catalog used for the minor must be the same as the catalog used for the major and general degree requirements.
  3. You must satisfactorily complete the requirements for the minor before your B.S. degree will be awarded. The minor will be listed on your transcript along with the B.S. degree.

BACHELOR OF ARTS AND SCIENCES

See Arts and Sciences in the bachelor's degree programs section. A minor is required.

BACHELOR OF BUSINESS ADMINISTRATION

All majors must earn a C grade or better in all common body of knowledge courses, department-specific general requirements, major specific requirements, and specific math and statistics requirements.

Requirements	Credits
Complete the baccalaureate core	**38 – 39**
(BA F323X—Business Ethics must be included in the courses used to meet the Perspectives on the Human Condition requirement.)	
Complete the following B.B.A. requirements in addition to the core:	
Mathematics • MATH F161X—Algebra for Business and Economics (MATH F262X should be taken to complete the mathematics requirement for the core.)	3
Social Sciences and Statistics • STAT F200X—Elementary Probability and Statistics (3) • ECON 201—Principles of Economics I: Microeconomics (3) • ECON 202—Principles of Economics II: Macroeconomics (3) • ECON F227—Intermediate Statistics for Economics and Business (3)	10
Common Body of Knowledge • AIS F101—Effective Personal Computer Use OR demonstrated computer literacy (0 – 3) • ACCT F261–F262—Accounting Concepts and Uses (6) • AIS F310—Management of Information Systems or AIS F316—Accounting Information Systems (3) • BA F325—Financial Management (3) • BA F330—Legal Environment of Business (4) • BA F343—Principles of Marketing (3) • BA F360—Operations Management (3) • BA F390—Organization Theory and Behavior (3) • BA F462O—Corporate Strategy (3) • ECON F324—Intermediate Macroeconomics (3) or ECON F350—Money and Banking (3)	31 – 34
Major complex*	at least 27
Minor complex (optional) **	at least 15
Minimum credits required for degree	**120**

Of the above, at least 39 credits must be taken in upper-division (300-level or higher) courses.

**Departmental requirements for majors may exceed the minimums indicated. Specific requirements are listed in the Degrees and Programs section of the catalog.*

***Requirements for minors may exceed 15 credits. Specific requirements are listed in the following section.*

BACHELOR OF EMERGENCY MANAGEMENT

The B.E.M. degree offers a business administration curriculum tailored to meet the needs of a fire department business manager with a minor in Leadership and Civic Engagement. A minor is required.

BACHELOR OF FINE ARTS

B.F.A. general requirements are the same as the requirements for the B.A. degree except a minor is not required for the B.F.A.

BACHELOR OF MUSIC

See Music in the Bachelor's Degree Programs section.

BACHELOR OF TECHNOLOGY

The B.T. degree program offers qualified applicants the opportunity to expand upon their vocational or technical education. An A.A.S. degree from an accredited institution of higher education, or the equivalent, is one of the degree program requirements. See Technology in the Bachelor's Degree Programs section.

TABLE 22 **SUMMARY OF BACHELOR'S DEGREE REQUIREMENTS**

	To be completed by all. See your degree requirements (e.g. B.B.A.) for any specific required core courses:	
Academic Discipline	**Baccalaureate Core**	**Bachelor of Arts and Bachelor of Fine Arts***
Communications	ENGL F111X—3 cr ENGL F211X or ENGL F213—3 cr COMM F131X or COMM F141X—3 cr	2 designated upper-division writing intensive (W) and either 1 designated upper-division oral intensive (O) course or 2 upper-division oral intensive courses designated O/2
Humanities and Social Sciences	Perspectives on the Human Condition (18 cr): ANTH/SOC F100X—3 cr ECON/PS F100X—3 cr HIST F100X—3 cr ART/MUS/THR F200X or ANS F202X or HUM F201X—3 cr ENGL/FL F200X—3 cr BA F323X or COMM F300X or JUST F300X or NRM F303X or PHIL F322X or PS F300X—3 cr or 12 credits from list at left plus 2 semester-length courses in a single Alaska Native or other non-English language or 3 semesters (9 credits) in American Sign Language taken at the university level	Humanities and Social Sciences (18 cr): Any combination of courses at the F100-level or above with a minimum of 6 credits in humanities and 6 credits in social sciences or up to 12 credits of a non-English language taken at the university level and at least 6 credits of social sciences
Mathematics	MATH F103X or MATH F107X or MATH F161X or STAT F200X or MATH F200X, F201X, F202X, F262X or F272X or any math course having one of the above as a prerequisite—3 or 4 cr	One 3-credit course at F100-level or above from math, computer sciences or statistics
Natural Sciences	Complete any two (4-credit) courses. ATM F101X—4 cr BIOL F100X—4 cr BIOL F103X—4 cr BIOL F104X—4 cr BIOL F111X —4 cr BIOL F112X—4 cr BIOL F115X—4 cr BIOL F116X—4 cr CHEM F100X—4 cr CHEM F103X—4 cr CHEM F104X—4 cr CHEM F105X—4 cr CHEM F106X—4 cr GEOG F111X—4 cr GEOS F100X—4 cr GEOS F101X—4 cr GEOS F112X—4 cr GEOS F120X—4 cr GEOS F125X—4 cr MSL F111X—4 cr PHYS F102X—4 cr PHYS F103X—4 cr PHYS F104X—4 cr PHYS F115X—4 cr PHYS F116X—4 cr PHYS F175X—4 cr PHYS F211X—4 cr PHYS F212X—4 cr PHYS F213X—4 cr	No additional natural science unless required by the major or minor
Library and Information Research	Successful completion of library skills competency test or LS F100X or F101X—0 – 1 cr (complete during first 2 years)	
Other		*B.F.A. general requirements are the same as the requirements for the B.A. degree except a minor is not required for the B.F.A.
Major Complex		At least 30 cr
Minor Complex		Required: at least 15 cr*
Total Required	38 – 40 cr	120 cr

Complete the following degree requirements

Bachelor of Emergency Management	Bachelor of Science	Bachelor of Technology	Bachelor of Business Administration	Bachelor of Music	Bachelor of Arts and Sciences
2 designated upper-division writing intensive (W) and either 1 designated upper-division oral intensive (O) course or 2 upper-division oral intensive courses designated O/2	2 designated upper-division writing intensive (W) and either 1 designated upper-division oral intensive (O) course or 2 upper-division oral intensive courses designated O/2	ENGL F314 and 1 other designated upper-division writing intensive (W) and either 1 designated upper-division oral intensive (O) course or 2 upper-division oral intensive courses designated O/2	ENGL F314 and 1 other designated upper-division writing intensive (W) and either 1 designated upper-division oral intensive (O) course or 2 upper-division oral intensive courses designated O/2	2 designated upper-division writing intensive (W) and either 1 designated upper-division oral intensive (O) course or 2 upper-division oral intensive courses designated O/2	LAS F310 and LAS F420 or LAS F430 (COMM F131X should be taken to meet the Communications requirement.)
No additional humanities or social sciences unless required by major or minor	No additional humanities or social sciences unless required by major or minor	No additional humanities or social sciences unless required by major or minor	ECON F201—3 cr ECON F202—3 cr ECON F227—3 cr (BA F323X must be included in the courses used to meet the Perspectives on the Human Condition requirement.)	No additional humanities or social sciences except those required in the major	No additional humanities or social sciences except those required in the major. (ART/MUS/THR F200X, HIST F100X, ANTH/SOC F100X and ENGL/FL F200X must be included in the courses used to meet the Perspectives on the Human Condition requirements.)
STAT F200X—3 cr (MATH F107X or MATH F161X must be taken to meet the core math requirement)	One 3-credit course at the F100-level or above from math, computer sciences or statistics (a 3-credit calculus course must be included in core or B.S. requirements)	One 3-credit course at the F100-level or above from math, computer sciences or statistics (MATH F161X must be taken to meet the core math requirement)	STAT F200X—3 cr MATH F161X—3cr (MATH F262X must be taken to meet the core math requirement.)	One 3-credit course at the F100-level or above from math, computer sciences or statistics	MATH F205—3 cr MATH F206—3 cr (MATH F107X or MATH F161X must be taken to meet the core math requirement.)
No additional natural science required	One-year sequence in one natural science beyond the core-8 cr (Total natural science courses used to meet core and B.S. requirements must represent at least two different natural sciences.)	No additional natural science unless required by the major	No additional natural science required	No additional natural science required	2 additional core lab courses in the 2 disciplines not completed for the core natural sciences from the disciplines of biology, chemistry, physics and geoscience (2 different science discipline lab courses selected from the disciplines of biology, chemistry, physics and geoscience must be taken for the core natural science requirement.)
		Computer competency (any computer science or computer applications course)—3 cr TTCH F301 Technology and Society—3 cr Area of specialization—30+ cr Option—33 cr	Common Body of Knowledge—31 – 34 cr Free electives—9 – 13 cr		Electives—at least 7 cr
At least 40 cr	At least 30 cr		At least 30 cr	85 or more cr	At least 56 cr
At least 15 cr	Optional: at least 15 cr		Optional: at least 15 cr		At least 15 cr
129 – 131 cr	120 cr	120 cr	122 – 123 cr	120 cr	120 cr

Bachelor's Degree Programs

ACCOUNTING

School of Management
Department of Accounting and Information Systems
907-474-7461
www.uaf.edu/som/programs/acct/

B.B.A. Degree

Minimum Requirements for Degree: 123 credits

The accounting department offers an extensive program for those interested in the fields of general accounting, auditing, managerial accounting, taxation and government accounting. The objectives of the program are to provide a strong business background through an understanding of accounting and to train students for employment in accounting work.

The UAF accounting program is accredited by the Association to Advance College Schools of Business. The AACSB accredits 120 programs nationwide, and the UAF accounting program is the only program in Alaska with AACSB accreditation.

The accounting program prepares students for certification as Certified Public Accountants, Certified Management Accountants, Certified Financial Managers, Certified Internal Auditors and Certified Fraud Examiners. The UAF accounting program places nearly 100 percent of its graduates.

Major — B.B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: BA F323X* and MATH F262X*.)
2. Complete the B.B.A. degree requirements. (See page 137. As part of the common body of knowledge, complete AIS F316.)
3. Complete ENGL F314W,O/2*.
4. Complete the following program (major) requirements:*
   ACCT F330—Income Tax 3
   ACCT F342—Managerial Cost Accounting 3
   ACCT F361—Intermediate Accounting 3
   ACCT F362—Intermediate Accounting 3
   ACCT F414—Governmental and Nonprofit Accounting 3
   ACCT F452W—Auditing 3
5. Complete two of the following:*
   ACCT F401—Advanced Accounting 3
   ACCT F404—Advanced Cost Accounting and Controllership 3
   ACCT F430—Advanced Taxes 3
   ACCT F472—Advanced Auditing 3
   AIS F473—Applied System Design 3
6. Complete free electives ..... 9 – 13
7. Minimum credits required 123

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

Note: The B.B.A. degree requires 50 percent of the accounting, business administration and economics credits to be earned in residence at UAF.

Note: Students within 18 credit hours of fulfilling the requirement for the bachelor's degree are eligible to take the CPA examination in Alaska. Students completing a bachelor's degree after Dec. 31, 2000 will be required to meet the state's 150-hour requirement to receive a CPA certificate.

Minor

1. Complete the following:*
   ACCT F261—Accounting Concepts and Uses I 3
   ACCT F262—Accounting Concepts and Uses II 3
   Upper-division accounting electives 9
2. Minimum credits required 15

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

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

ALASKA NATIVE LANGUAGES

College of Rural and Community Development
Department of Alaska Native Studies and Rural Development
907-474-7181
www.uaf.edu/ans/

Minor only

The Alaska Native language program offers courses in Eskimo, Aleut and Indian languages spoken in the state. Major and minor curricula are offered in Central Yup'ik Eskimo, the largest Alaska Native language in terms of number of speakers; and Inupiaq Eskimo, the second largest. Regular courses are also available in Gwich'in Athabascan. Individual or small-group instruction is available in other Athabascan languages as well as in Siberian Yup'ik, Alutiiq, Aleut and Tlingit. UAF is the only university in the United States to provide such programs. Students interested in individual or small group interaction should contact the Alaska Native Language Center.

Professional opportunities for those skilled in Alaska Native languages exist in teaching, research and cultural, educational and political development. The A.A.S. degree and the 30-credit certificate in Native language education for either Inupiaq or Athabascan are available by distance delivery. Both provide training in language and culture for people interested in becoming Native language instructors, and both may serve as a step toward further education.

The Alaska Native language teaching program benefits from the research staff and library of the Alaska Native Language Center. Students have access to researchers who are world leaders in documenting Eskimo and northern Athabascan languages. The library houses more than 15,000 items, virtually everything written about Alaska Native languages, including copies of documentation dating to the 1700s.

Minor

1. Complete the following:
   Any ANL or ESK courses 15
2. Minimum credits required 15

ALASKA NATIVE STUDIES

College of Rural and Community Development
Department of Alaska Native Studies and Rural Development
907-474-7181
www.uaf.edu/ans/

B.A. Degree

Minimum Requirements for Degree: 130 credits

Alaska Native Studies seeks to provide students with an awareness of the scope, richness and variety of Alaska Native cultures. It offers

a series of critical perspectives on the contemporary Native experience in pluralistic North American society. The interdisciplinary academic program is built upon a combination of courses offered by the Alaska Native Studies program and other specialized disciplines.

The Alaska Native studies B.A. prepares students to appreciate historical and contemporary cultural dynamics. The department also welcomes students pursuing a second major or a minor. It encourages students who expect to be involved professionally in Alaska Native communities or other multicultural settings to pursue this degree.

Major

Concentrations: General, Language

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   a. Complete the following:
      ANL F315—Alaska Native Languages: Eskimo-Aleut** (3)
      or ANL F316—Alaska Native Languages: Indian Languages** (3).....3
      ANS/PS F325—Native Self-Government.....3
      ANS F347—Voices of Native American Peoples.....3
      ANS F401—Cultural Knowledge of Native Elders.....3
      ANS/ANTH F242—Native Cultures of Alaska.....3
      HIST F110—History of Alaska Natives (3)
      or ANS F101—Introduction to Alaska Native Studies (3) 3
   b. Complete one of the following concentrations*:

General

1. Complete the following:
   ANS/ENGL F340—Contemporary Native American Literature (3)
   or ANS/ENGL F349—Narrative Art of Alaska Native Peoples (in English Translation) (3).....3
   ANS/PS F425—Federal Indian Law and Alaska Natives (3)
   or ANS/PS F450—Comparative Aboriginal Rights and Policies (3).....3
2. Complete 9 credits from the following (you may include courses not selected from courses above in general part 1):
   ANS F160—Alaska Native Dance.....1
   ANS/THR F161—Introduction to Alaska Native Performance .3
   ANS F202X—Aesthetic Appreciation of Alaska Native Performance***.....3
   ANS F250—Current Alaska Native Leadership Perspectives....3
   ANS F251—Practicum in Native Cultural Expression.....3
   ANS F300W—Alaska Native Writers Workshop.....3
   ANS F310—The Alaska Native Lands Settlement.....3
   ANS/RD F315—Tribal People and Development.....3
   ANS F320W—Language and Culture: Application to Alaska ...3
   ANS F335—Native North Americans.....3
   ANS F348W—Native North American Women.....3
   ANS F350W,O—Cross Cultural Communication: Alaskan Perspectives.....3
   ANS F351—Practicum in Native Cultural Expression.....3
   ANS F360—Advanced Native Dance.....1
   ANS F361—Advanced Alaska Native Performance.....3
   ANS/ART F365—Native Art of Alaska.....3
   ANS F375—Native American Religion and Philosophy.....3
   ANS/ED F420—Alaska Native Education.....3
   ANS F475—Alaska Native Social Change.....3
   PS F263—Alaska Native Politics.....3
   RD F255—Rural Alaska Land Issues.....3
   SOC F308—Race and Ethnic Relations.....3
3. Minimum credits required.....130

Language

1. Complete the following:
   ANL F251—Introduction to Athabascan Linguistics (3)
   or LING F101—Nature of Language (3).....3
   ANL F287—Teaching Methods for Alaska Native Languages...3
   ANL F288—Curriculum and Materials Development for Alaska Native Languages.....3
   ANS/ANTH F320W—Language and Culture: Applications to Alaska.....3
   LING F450O—Language Policy and Planning.....3
2. Complete the following Language concentration requirement:
   Three years of 1 Alaska Native language or equivalent**.....22
3. Minimum credits required.....130

* *Student must earn a C grade or better in each course.*
** *These courses may be used to fulfill the bachelor of arts requirements for a minor complex, or foreign/Alaska Native language option (page 136).*
*** *ANS F202X may not be counted toward an Alaska Native studies major if used to fulfill core requirements.*
Note: ANL F255 may be substituted for ANL F315.
Note: ANL F256 may be substituted for ANL F316.

Minor*

1. Complete the following:
   ANS F300- or F400-level course.....3
   ANS F401—Cultural Knowledge of Native Elders.....3
   Alaska Native Studies electives.....9
2. Minimum credits required.....15

* *All minor programs must be approved by the department head of Alaska Native Studies and Rural Development.*

AMERICAN SIGN LANGUAGE

College of Rural and Community Development
Tanana Valley Campus
907-455-2823
www.tvc.uaf.edu

Minor only

The minor in American sign language provides students with an opportunity to acquire signing skills and experience American deaf culture and history. Students of ASLG will have a greater understanding of diversity and empathy for people with differing abilities. ASLG students will develop critical thinking skills and be able to sign clearly, be understood and comprehend native signers. ASLG minor students will be required to participate in community events and develop an ethical responsibility to the community in which they live.

Minor

1. Complete the following:*
   ASLG F101 – American Sign Language I.....3
   ASLG F202 – American Sign Language II.....3
   ASLG F203 – American Sign Language III.....3
   ASLG F204 – American Sign Language IV.....3
   ASLG F205 – American Sign Language V.....3
   ASLG F110 – American Sign Language Practice**.....1
2. Minimum credits required.....15

* *Students must earn a C grade or better in each course.*
** *Can be repeated for up to 3 credits*
Note: Courses designated as humanities that are taken for the minor may also be used to fulfill humanities distribution requirements for the B.A. degree. Courses that are taken for the minor may not be used to fulfill the Core Perspectives on Human Condition requirements.

ANTHROPOLOGY

College of Liberal Arts
Department of Anthropology
907-474-7288
www.uaf.edu/anthro/

B.A., B.S. Degrees

Minimum Requirements for Degrees: B.A.: 120 credits; B.S.: 130 credits

The Department of Anthropology offers a balanced and flexible program of academic courses and research in cultural anthropology, linguistic anthropology, archaeology and biological anthropology. Anthropology contributes to an understanding of the complex problems of human behavior, biology, language, cultural and social organization, and the relationship of humans to their environments. Research carried out in the field, laboratory and library emphasizes past and present modes of living and the origins and distribution of peoples and cultures throughout the world. Although special attention is given to the circumpolar North, faculty also maintain active research programs elsewhere, such as Africa and North America.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements complete ANTH F100X*.)
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   a. Complete the following:
      ANTH F211—Fundamentals of Archaeology (3)
      or ANTH F221—Introduction to Biological Anthropology (3) 3
      ANTH F215—Fundamentals of Social/Cultural Anthropology 3
      ANTH F384—History of Anthropology 3
      ANTH F411O—Senior Seminar 3
      LING F101—Nature of Language 3
   b. Complete 6 anthropology electives, with degree classification designator 's' or 'h,' at least 4 (12 credits) of which are at the F400-level 18
4. Minimum credits required 120

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

Note: LING F101 satisfies part of the B.A. humanities requirements.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements complete ANTH F100X*.)
2. Complete the B.S. degree requirements (page 136).
3. Complete the following program major requirements:*
   a. Complete the following:
      ANTH F211—Fundamentals of Archaeology 3
      ANTH F221—Introduction to Biological Anthropology 3
      ANTH F215—Fundamentals of Social/Cultural Anthropology (3)
      or ANTH F320W—Language and Culture: Applications to Alaska (3)
      or LING F101—Nature of Language (3) 3
      ANTH F411O—Senior Seminar 3
   b. Complete the following:
      ANTH F214—World Prehistory 3
      ANTH F405W—Archaeological Methods and Theory 3
      ANTH F423—Paleoanthropology 3
      ANTH F424—Analytical Techniques 3
   c. Complete one of the following:
      ANTH F309—Circumpolar Archaeology 3
      ANTH F315—Human Biology 3
   d. Complete one of the following:
      ANTH F415—Zooarchaeology and Taphonomy 3
      ANTH F422—Human Osteology 3
   e. Complete at least 2 of the following electives:**
      ANTH F426—Bioarchaeology 3
      ANTH F428—Ecological Anthropology 3
      ANTH F492—Seminar: Physical Anthropology 3
      ANTH F492—Seminar: Archaeology 3
4. Minimum credits required 130

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

** *Courses not selected under "c" or "d" areas may be used to meet this area.*

Minor

1. Complete the following:
   ANTH F211—Fundamentals of Archaeology 3
   ANTH F215—Fundamentals of Social/Cultural Anthropology 3
   ANTH F221—Introduction to Biological Anthropology 3
   ANTH F320W—Language and Culture: Applications to Alaska 3
   Anthropology electives 6
2. Minimum credits required 18

ARCTIC SKILLS

College of Rural and Community Development
Industrial and Service Technology Division
907-455-2895
www.uaf.edu/rural/

Minor only

The minor in arctic skills is designed for anyone who lives and works in a northern climate and wishes to learn to cope with the outdoor arctic environment.

Students who complete this minor also earn a state of Alaska EMTI certificate and may prepare to take the FAA written exam for partial fulfillment of the private pilot certificate requirements.

Minor

1. Complete the following:
   AVTY F100—Private Pilot Ground School (4)
   or AVTY F111—Fundamentals of Aviation (3) ....3 – 4
   AVTY F231—Arctic Survival (3)
   or EMS F257—Arctic Survival (3) 3
   EMS F170—EMT: Emergency Medical Technician I 6
   Approved electives* ....3 – 4
2. Minimum credits required 15

* *Approved by program manager.*

ART

College of Liberal Arts
Department of Art
907-474-7530
www.uaf.edu/art/

B.A., B.F.A. Degrees

Minimum Requirements for Degrees: B.A.: 130 credits; B.F.A.: 130 credits

The art program encourages independent, original and creative thinking while recognizing the role and responsibility of the fine arts within the humanities.

The B.F.A. degree is professionally oriented and designed to prepare students for careers in art. It is the usual prerequisite for graduate studies in art. Admission requires a portfolio review by the art faculty, generally done in the student's junior year. Enrollment in the B.F.A. program is recommended only for students who are willing to make the considerable commitment of time and energy necessary to achieve professional competence in their major areas. Career opportunities for B.F.A. graduates include artist, designer, arts administrator, art teacher, gallery and museum administrator, and computer-related fields.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   a. Complete the following:
      ART F105—Beginning Drawing 3
      ART F205—Intermediate Drawing 3
      ART F211—Beginning Sculpture 3
      ART F213—Beginning Painting (Acrylic or Oil) 3
      ART F261 and F262—History of World Art 6
   b. Complete two of the following:
      ART F161—Two-Dimensional Design 3
      ART F162—Color and Design 3
      ART F163—Three-Dimensional Design 3
   c. Complete one of the following electives:
      ART F201—Beginning Ceramics 3
      ART F207—Beginning Printmaking 3
      ART F209—Beginning Metalsmithing and Jewelry 3
      ART F268—Beginning Native Art Studio 3
      ART F371O—Digital Photography and Pixel Painting 3
   d. Complete three upper-division courses from one of these major concentrations:
      Ceramics 9
      Computer Art 9
      Drawing 9
      Metalsmithing 9
      Native Studio Art 9
      Painting 9
      Printmaking 9
      Sculpture 9
   e. Upper-division art history 3
4. Minimum art credits required for major 39
5. Minimum credits required 130

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

Note: Transfer students who are candidates for the B.A. degree or a B.F.A. in art must complete a minimum of 18 credits in art while in residence.

Major — B.F.A. Degree

Concentrations: Ceramics, Computer Art, Drawing, Metalsmithing, Native Studio Art, Painting, Printmaking, Sculpture

1. Complete the general university requirements (page 131).
2. Complete the B.F.A. degree requirements (page 137).
3. Complete the following program (major) requirements:*
   a. Complete the following:
      ART F105—Beginning Drawing 3
      ART F205—Intermediate Drawing 3
      ART F211—Beginning Sculpture 3
      ART F213—Beginning Painting (Acrylic or Oil) 3
      ART F261 and F262—History of World Art 6
   b. Complete two of the following:
      ART F161—Two-Dimensional Design 3
      ART F162—Color and Design 3
      ART F163—Three-Dimensional Design 3
   c. Complete one of the following: 3
      ART F201—Beginning Ceramics 3
      ART F207—Beginning Printmaking 3
      ART F209—Beginning Metalsmithing and Jewelry 3
      ART F268—Beginning Native Art Studio 3
      ART F371O—Digital Photography and Pixel Painting 3
   d. Complete the following:
      Upper-division art history** 9
      Major program approved by B.F.A. thesis committee*** 30
      Upper-division art electives 6
      Thesis project 3
4. Minimum credits required 130

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

** *Any upper-division art history class (ART F360, F363W, F364W, F365, F366, F367), ANTH/ART F402, ART F425W, F463, F490, F493, HUM F332 or HUM F469W may apply toward this requirement.*

*** *Major program must include at least two, and no more than three, studio areas. Minimum requirement for the first area is 15 upper-division credits. Minimum requirement for the second area is 9 upper-division credits.*

Note: A non-art minor is not required for this degree.

Note: Transfer students who are candidates for the B.A. degree or a B.F.A. in art must complete a minimum of 18 credits in art while in residence.

Note: All studio areas in the department are eligible for fulfillment of specialization requirements: ceramics, computer art, metalsmithing, Native art, painting, drawing, printmaking and sculpture.

Minor

1. Complete the following:*
   ART F105—Beginning Drawing 3
   ART F262—History of World Art 3
   ART F365—Native Art of Alaska 3
2. Complete one of the following:*
   ART F161—Two-Dimensional Design 3
   ART F162—Color and Design 3
   ART F163—Three-Dimensional Design 3
3. Complete one of the following:*
   ART F201—Beginning Ceramics 3
   ART F211—Beginning Sculpture 3
   ART F268—Beginning Native Art Studio 3
4. Complete one of the following:*
   ART F207—Beginning Printmaking 3
   ART F209—Beginning Metalsmithing and Jewelry 3
   ART F213—Beginning Painting (Acrylic or Oil) 3
   ART F371O—Digital Photography and Pixel Painting 3
5. Minimum credits required 18

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

Note: A minor in art for the B.A. or B.S. degree is available only to non-art majors.

ARTS AND SCIENCES

School of Education
907-474-7341
www.uaf.edu/educ/

B.A.S. Degree

Minimum Requirements for Degree: 120 credits

The arts and sciences degree program instructs students in the subject areas encompassed in Alaska teacher content and performance standards: English/language arts, mathematics, science, geography, government and citizenship, history, skills for a healthy life, arts, world languages and technology.

The B.A.S. program is a broad-based major, concentrating on key principles and content knowledge in mathematics and science, the social sciences, humanities and fine arts.

Students in the B.A.S. degree program are advised by the School of Education. B.A.S. majors may choose any approved minor. Students who are interested in being teachers are encouraged to choose the education minor.

Major — B.A.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete the following: ART/MUS/THR F200X*, HIST F100X*, ANTH/SOC F100X*, ENG/FL F200X*, MATH F107X* or MATH F161X*, COMM F131X* or COMM F141X*, and two different science discipline laboratory courses selected from biology*, chemistry*, physics* and geoscience*. Two years of a non-English language highly recommended.)
2. Complete the following B.A.S. degree major requirements in addition to the core:*
   a. Complete the following mathematics requirements:
      MATH F205—Mathematics for Elementary School Teachers I 3
      MATH F206—Mathematics for Elementary School Teachers II 3
   b. Complete two additional laboratory courses in the two science disciplines not completed for the baccalaureate core.
   c. Complete the following social sciences requirements:
      GEOG F101—Expedition Earth: Introduction to Geography ...3
      HIST F131—History of the U.S. (3)
      or HIST F132—History of the U.S. (3) 3
      HIST F461W—History of Alaska 3
      PS F101—Introduction to American Government and Politics 3
   d. Complete the following literature, grammar and writing requirements:
      ENGL F271—Introduction to Creative Writing — Fiction (3)
      or ENGL F272—Introduction to Creative Writing — Poetry (3)
      or ENGL F313W—Writing Non-Fiction Prose (3)
      or ENGL F314W,O/2—Technical Writing (3)
      or JRN F311W—Magazine Article Writing (3) 3
      ENGL F306—Survey of American Literature: Beginnings to the Civil War (3)
      or ENGL F307—Survey of American Literature: Civil War to the Present (3)
      or ENGL F308—Survey of British Literature: Beowulf to the Romantic Period (3)
      or another literature-focused course (3) 3
      ENGL F317—Traditional English Grammar 3
   e. Complete the following psychology and language development requirements:
      LING/ED F100 Language, Education and Linguistics (3)
      or LING F101—Nature of Language (3)
      or LING F303W,O—Language Acquisition (3) 3
      PSY F240—Lifespan Developmental Psychology (3)
      or PSY/ED F245— Child Development (3) 3
   f. Complete creative expression course or courses from applied courses in music, theatre, photography or art. 3
   g. Complete the following understanding diversity and culture requirements:
      ANTH F242—Native Cultures of Alaska 3
      Course selected from a list developed by the review committee 3
   h. Complete the following senior seminar requirements:
      LAS F410W,O/2—Scientific Research 3
      ED F486O/2—Media Literacy 3
   i. Complete the following technology requirement:
      ED F237—Technology Tools for Teachers .... .5 – 2
      This course is divided into four modules. Students have the option to test out of any of the four modules or enroll in and successfully complete for a passing grade any module that has not been successfully challenged.
   j. Complete the following Praxis test requirement:
      B.A.S. students will be required to have Alaska passing scores on the Praxis I and the Praxis II (test 0014) prior to completing their last semester. Praxis I assesses reading, writing and math; Praxis II "Elementary Content Knowledge" assesses broad knowledge and background in English/language, arts, math, science and social sciences.
3. Complete minor complex** 15
4. Complete electives ....0 – 8
5. Minimum credits required 120

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

** *Departmental requirements for minors may exceed this 15 credit minimum. See other program descriptions for specific minor requirements.*

Note: For the B.A.S. degree program, at least 39 credits must be taken in upper-division (F300- and F400-level) courses. Courses taken to fulfill the B.A.S. degree can also be counted for content minors or second majors.

ASIAN STUDIES

College of Liberal Arts
907-474-6507
www.uaf.edu/language/

Minor only

A minor in Asian studies provides interdisciplinary instruction in the varieties of Asian languages and cultures. It enables students to consolidate various course offerings into a meaningful and cohesive program relevant to several major fields of specialization. (Combining a Japanese Studies major with an Asian Studies minor requires approval from both programs.)

Minor

1. Complete 15 credits in approved Asian studies courses:*
   a. Department of Foreign Languages
      CHNS F101—Elementary Chinese I 5
      CHNS F102—Elementary Chinese II 5
      CHNS F201—Intermediate Chinese 4
      CHNS F202—Intermediate Chinese II 4
      JPN F101—Elementary Japanese I 5
      JPN F102—Elementary Japanese II 5
      JPN F201—Intermediate Japanese I 4
      JPN F202—Intermediate Japanese II 4

b. Department of Geography
GEOG F311W—Geography of Asia 3
c. Department of History
HIST F121—East Asian Civilization 3
HIST F122—East Asian Civilization 3
HIST F330—Modern China 3
HIST F331—Modern Japan 3
HIST F333—Foundations of Japanese History.....3
HIST/WMS F414—Women and Gender in East Asian History.3
d. Department of Philosophy
PHIL F202—Introduction to Eastern Philosophy 3
e. Department of Political Science
PS F464W—East Asian Governments and Politics 3

2. Minimum credits required 15

* *Courses must be distributed among at least three departments and include material on at least two Asian countries. Students are strongly encouraged to include a semester or more of Asian language.*

BIOLOGICAL SCIENCES

College of Natural Science and Mathematics
Department of Biology and Wildlife
907-474-7671
www.bw.uaf.edu

B.A., B.S. Degrees

Minimum Requirements for Degrees: 130 credits

The biological sciences program provides a broad education and sound foundation in the basic principles of biology. Students who major in biological sciences may pursue either a B.A. or B.S. degree. The B.A. requires fewer credits in the major field than the B.S., but it gives greater emphasis in the social sciences and humanities and allows a greater breadth of subject matter.

The B.S. degree includes a foundation in the basic sciences and stronger requirements within the biological sciences than the B.A. Candidates who expect to teach in public secondary schools must be sure that they meet education requirements.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: CHEM F105X* and F106X*.)
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
BIOL F115X—Fundamentals of Biology I.....4
BIOL F116X—Fundamentals of Biology II.....4
BIOL F261—Introduction to Cell and Molecular Biology 4
BIOL F271—Principles of Ecology.....4
BIOL F303—Principles of Metabolism and Biochemistry (4)
or CHEM F321—Organic Chemistry (3)
and CHEM F322—Organic Chemistry (3).....4 – 6
BIOL F310—Animal Physiology (4)
or BIOL F111X and F112X—Human Anatomy and Physiology I & II (8)
or BIOL F334W—Structure and Function of Vascular Plants (4)
or BIOL F342—Microbiology (4) .....4 – 8
BIOL F362—Principles of Genetics.....4
BIOL F481—Principles of Evolution.....4
PHYS F103X—College Physics 4
STAT F200X—Elementary Probability and Statistics 3
4. Minimum credits required 130

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X* or MATH F272X*; and CHEM F105X* and F106X*.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete STAT F200X* or STAT F300*. Biology foundation courses may be used toward partial fulfillment of the natural science requirement.)
3. Complete the following program (major) requirements:*
a. Complete the following:
BIOL F115X—Fundamentals of Biology I.....4
BIOL F116X—Fundamentals of Biology II.....4
BIOL F261—Introduction to Cell and Molecular Biology 4
BIOL F271—Principles of Ecology.....4
BIOL F303—Principles of Metabolism and Biochemistry (4)
or CHEM F321—Organic Chemistry (3)
and CHEM F322—Organic Chemistry (3).....4 – 6
BIOL F310—Animal Physiology (4)
or BIOL F111X and F112X—Human Anatomy and Physiology I & II (8)
or BIOL F334W—Structure and Function in Vascular Plants (4)
or BIOL F342—Microbiology (4) .....4 – 8
BIOL F362—Principles of Genetics.....4
BIOL F481—Principles of Evolution.....4
PHYS F103X and PHYS F104X—College Physics (8)
or PHYS F211X and PHYS F212X—General Physics 8
b. Complete biology electives** 20
4. Minimum credits required 130

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

** *A maximum of 6 credits of independent study (course numbers ending in 97) may be applied to this requirement. Students may petition to substitute chemistry courses (up to 10 credits for the biology electives required for the B.S. degree.)*

Note: A foreign language is encouraged by the department in meeting requirements of the core curriculum.

Note: Biology foundation courses may be used toward partial fulfillment of the natural science requirement for the B.S. degree with a major in biological sciences.

Note: Candidates for the bachelor of science degree in general science wishing to major in biological sciences must satisfy both the requirements of their major curriculum and those listed above for a B.A. degree with a major in biological sciences.

Requirements for Biology Teachers (grades 7 – 12)*

1. Complete all the requirements of the biological sciences B.A. or B.S. degree.
2. Complete the following:
BIOL F310—Animal Physiology (4)
or BIOL F111X and BIOL F112X—Human Anatomy and Physiology (8).....4 – 8
BIOL F239—Introduction to Plant Biology (4)
or BIOL F334—Structure and Function in Vascular Plants (4) 4
BIOL F342—Microbiology 4
3. Complete one of the following:
BIOL F305—Invertebrate Zoology (5)
or BIOL F406—Entomology (4)
or BIOL F425—Mammalogy (3)
or BIOL F426W,O/2—Ornithology (3)
or BIOL F427—Ichthyology (4) .....3 – 5
4. Complete the following:
PHIL F481—Philosophy of Science (3).....3

* *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. Above requirements apply to all candidates who apply to the UAF School of Education Spring 2006 or later, for licensure in biology.

Minor*

1. Complete the following:
   BIOL F115X—Fundamentals of Biology I.....4
   BIOL F116X—Fundamentals of Biology II.....4
2. Complete three of the following:
   BIOL F310—Animal Physiology (4)
   or BIOL F111X and F112X—Human Anatomy and Physiology I and II (8).....4 – 8
   BIOL F271—Principles of Ecology.....4
   BIOL F303—Principles of Metabolism and Biochemistry.....4
   BIOL F334W—Structure and Function in Vascular Plants.....4
   BIOL F342—Microbiology.....4
   BIOL F362—Principles of Genetics.....4
   BIOL F481—Principles of Evolution.....4
3. Minimum credits required.....20

BUSINESS ADMINISTRATION

School of Management
Department of Business Administration
907-474-7461
www.uaf.edu/som/programs/ba/

B.B.A. Degree

Minimum Requirements for Degree: 120 credits

The business administration department offers professional education to students interested in management, finance, human resource management, international business, marketing and travel industry management.

Competent management practices require an education that is both broad and deep. The business administration program prepares graduates to meet complex technical, economic and social problems and enables them to apply imaginative and responsible leadership to the needs of industry and government.

The undergraduate and graduate programs are accredited by the Association to Advance Collegiate Schools of Business.

Major — B.B.A. Degree

Concentrations: Finance, General Business, Management and Organizations, Marketing

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: BA F323X*; and MATH F262X*.)
2. Complete the B.B.A. degree requirements. (See page 137. As part of the Common Body of Knowledge, complete AIS F310.)
3. Complete the following:*
   BA F151—Introduction to Business.....3
   ENGL F314W,O/2—Technical Writing.....3
4. Complete the following program (major) requirements:*
   ACCT F352—Management Accounting.....3
   BA F307—Introductory Human Resource Management.....3
   ECON F321—Intermediate Microeconomics (3)
   or ECON F322—Managerial Economics (3).....3
   BA F460—International Business.....3
5. Complete an additional 3 credits from ACCT, BA or ECON.
6. Complete one of the following concentrations:*
   a. **Finance**
      Complete four of the following:
      BA F423W—Investment Analysis.....3
      BA F424—Real Estate and Alternative Investments.....3
      BA F454O—Student Investment Fund.....3
      BA F455—Portfolio Management.....3
      BA F461—International Finance.....3
   b. **General Business**
      Complete four School of Management courses (of which at least three must be BA courses) approved by the undergraduate director and of which at least 6 hours must be upper division.
      Note: At least one course must be designated writing intensive (W).
   c. **Management and Organizations**
      Complete four of the following:
      BA F317W—Employment Law.....3
      BA F447W,O—Compensation Management.....3
      BA F456W—Small Business Management.....3
      BA F457—Training and Management Development.....3
      BA F467—Current Topics in Management.....3
   d. **Marketing**
      Complete four of the following:
      BA F241—Advertising, Sales and Promotion.....3
      BA F436—Consumer Behavior.....3
      BA F445W—Marketing Research.....3
      BA F490—Services Marketing.....3
      BA F491—Current Topics in Marketing.....3
7. Minimum credits required.....120

* *Student must earn a C grade or better in each course.*
** *Business students may earn a minor as long as their business degree requirements are met first.*

Note: The B.B.A. degree requires 50 percent of the accounting, business administration and economics credits to be earned in residence at UAF.

Note: Only one bachelor of business administration degree may be earned with a concentration in general business, finance, management and organizations, or marketing.

Minor*

Finance

1. Complete the following:
   ACCT F261—Accounting Concepts and Uses I.....3
   BA F151—Introduction to Business.....3
   BA F325—Financial Management.....3
   ECON F200—Principles of Economics.....4
2. Complete one of the following with instructor permission:
   BA F423W—Investment Analysis.....3
   BA F424—Real Estate and Alternative Investments.....3
   BA F461—International Finance.....3
3. Minimum credits required.....16

General Business

1. Complete five School of Management courses (of which at least three must be B.A. courses) approved by the undergraduate director and of which at least 6 hours must be upper-division.
2. Minimum credits required.....15

Management and Organizations

1. Complete five of the following:
   BA F151—Introduction to Business.....3
   BA F307—Introductory Human Resource Management.....3
   BA F317W—Employment Law.....3
   BA F325—Financial Management.....3
   BA F330—The Legal Environment of Business.....4
   BA F343—Principles of Marketing.....3

BA F360—Operations Management 3
BA F390—Organizational Theory and Behavior 3
ECON F200—Principles of Economics 4

2. Minimum credits required 15

Marketing

1. Complete five courses from the following:
   STAT F200X—Elementary Probability and Statistics 3
   BA F151—Introduction to Business 3
   BA F241—Advertising, Sales and Promotion 3
   BA F343—Principles of Marketing 3
   BA F436—Consumer Behavior 3
   BA F490—Services Marketing 3
   BA F491—Current Topics in Marketing 3
2. Minimum credits required 15

Sports Management

1. Required:
   BA F280—Sports Leadership 3
   BA F281—Sports Management 3
2. Complete nine credit hours from the following:
   ACCT F261—Accounting Concepts and Uses I 3
   AIS F310—Management of Information Systems 3
   BA F151—Introduction to Business 3
   BA F253—Internship in Business 3
   BA F307—Introductory Human Resource Management 3
   BA F390—Organizational Theory and Behavior 3
   BA F457—Training and Management Development 3
   PSY F337W—Sports Psychology 3
   JRN F260—Sports Journalism 3
3. Minimum credits required 15

* *Minors applicable to a bachelor of arts or bachelor of science degree.*

CHEMISTRY

College of Natural Science and Mathematics
Department of Chemistry and Biochemistry
907-474-5510
www.uaf.edu/chem/

B.A., B.S. Degrees

Minimum Requirements for Degrees: 130 credits

Graduates qualify for employment as teachers of chemistry; supervisors in industry; technical sales personnel; research chemists in federal, state, municipal, academic or industrial laboratories; in pre-medicine; and as laboratory technicians. Graduates also find positions in the environmental sciences, oceanography and related interdisciplinary fields. Many chemistry graduates elect to pursue advanced M.S., Ph.D., pharmacology or M.D. degrees.

The chemistry curriculum meets the American Chemical Society standards of introducing the basics of general, organic, inorganic, physical and analytical chemistry, and biochemistry. Undergraduate research leading to publications is strongly encouraged and many of the laboratory-based courses have a research component built into them. There are also options for an ACS-accredited degree which provides students additional exposure to environmental chemistry, biochemistry or forensic chemistry. Limited teaching assistantships are often available for upper division students, which strengthens leadership and communication skills.

The Bachelors degree in Environmental Chemistry prepares students for public and private sector jobs related to Environmental Science and Technology, or for graduate programs in Environmental Chemistry and related disciplines. The degree program is designed to provide students with core training in the chemical sciences, while providing exposure to a broad range of related disciplines. Students work with a faculty advisor to select required elective courses that best meets their interests and academic goals.

Students are also required to enroll in research credits with a focus on an Environmental Chemistry topic. This provides an opportunity for students to gain first hand experience working on advanced topics that are generally outside of the scope of an undergraduate curriculum. For a description of the field of Environmental Chemistry, see the Environmental Chemistry graduate program.

The chemistry and biochemistry department is housed in the Natural Sciences Facility, which is equipped with research-grade instrumentation, including a high field nuclear magnetic resonance spectrometer, FT infrared spectrometers, atomic absorption spectrometer, UV-VIS diode array spectrometers, two gas chromatographs interfaced with mass spectrometers, a gas chromatograph with a flame ionization detector, high performance liquid chromatograph, capillary electrophoresis and a modern glove box for handling air sensitive chemicals. Equipment for specialized X-ray diffractometry, electron microscopy, liquid scintillation counting, atomic force-field microscopy, dynamic light scattering analyses, etc. is available in cooperation with other UAF departments and institutes. Two computer laboratories equipped with modern chemical software (HyperChem, ACD Labs, ChemDraw, Chem Sketch, Mestrec) and other software such as Word, Excel, PowerPoint and Endnote are available for all students enrolled in F200-level or above courses.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X; PHYS F103X and PHYS F104X, or PHYS F211X and PHYS F212X.)
2. Complete the B.A. degree requirements. (See page 135. As part of the B.A. degree requirements, complete: MATH F201X.)
3. Complete the following program (major) requirements:*
   CHEM F105X—General Chemistry 4
   CHEM F106X—General Chemistry 4
   CHEM F202—Basic Inorganic Chemistry 3
   CHEM F212—Chemical Equilibrium and Analysis 4
   CHEM F312—Instrumental Analysis 4
   CHEM F321—Organic Chemistry 3
   CHEM F322—Organic Chemistry 3
   CHEM F324W—Organic Laboratory 4
   CHEM F331—Physical Chemistry 4
   CHEM F332—Physical Chemistry 4
   CHEM F413W—Analytical Instrumental Laboratory 3
   CHEM F434W—Instrumental Methods in Physical Chemistry 3
   CHEM F481—Seminar 1
   CHEM F482O—Seminar 2
4. Complete the following:
   MATH F202X—Calculus 4
5. Minimum credits required 130

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

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X; PHYS F103X and PHYS F104X, or PHYS F211X and PHYS F212X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree, complete: MATH F201X. Chemistry foundation courses may be used toward partial fulfillment of the natural science requirement.)

3. Complete the program (major) requirements as listed under Chemistry — B.A. Degree.

4. Complete the following:*
CHEM F402—Inorganic Chemistry** 3
CHEM F450—General Biochemistry Macromolecules (3)
or CHEM F451—General Biochemistry Metabolism 3
CHEM F488—Undergraduate Chemistry and Biochemistry Research** 4

5. Minimum credits required 130

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

** *Advanced courses in the physical or biological sciences or mathematics may be substituted with permission of the head of the chemistry and biochemistry department. However, the student will not receive an ACS-certified degree.*

Note: Upon completing the recommended curriculum and fulfilling all general university requirements, the student will receive a bachelor's degree certified by the American Chemical Society.

Note: The electives must include at least 6 credits at the upper-division level (to satisfy the UAF general degree requirements for 39 upper-division.)

Concentrations: Biochemistry/Molecular Biology, Environmental Chemistry, Forensic Chemistry

Biochemistry/Molecular Biology

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X; PHYS F103X and PHYS F104X, or PHYS F211X and PHYS F212X.)

2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X. Chemistry foundation courses may be used toward partial fulfillment of the natural science requirement.)

3. Complete the following program (major) requirements:*
BIOL F115X—Fundamentals of Biology I 4
BIOL F116X—Fundamentals of Biology II 4
BIOL F342—Microbiology (4)
or BIOL F362—Principles of Genetics (4)
CHEM F105X—General Chemistry 4
CHEM F106X—General Chemistry 4
CHEM F212—Chemical Equilibrium and Analysis 4
CHEM F321—Organic Chemistry 3
CHEM F322—Organic Chemistry 3
CHEM F324W—Organic Laboratory 4
CHEM F331—Physical Chemistry 4
CHEM F332—Physical Chemistry 4
CHEM F413W—Analytical Instrumental Laboratory** (3)
or CHEM F434W—Instrumental Methods in Physical Chemistry (3) 3
CHEM F450—General Biochemistry Macromolecules (3)
or CHEM F451—General Biochemistry Metabolism 3
CHEM F481—Seminar 1
CHEM F482O—Seminar 2
CHEM F488—Undergraduate Chemistry and Biochemistry Research (3) 3
Major elective (approved by department head)*** 6

4. Complete the following:
MATH F202X—Calculus 4

5. Minimum credits required 130

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

** *Requires CHEM F312 as prerequisite.*

*** *CHEM F202, F402 required for ACS-accredited degree.*

Environmental Chemistry

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X; PHYS F103X and PHYS F104X, or PHYS F211X and PHYS F212X.)

2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree, complete: MATH F201X. Chemistry foundation courses may be used toward partial fulfillment of the natural science requirement.)

3. Complete the following:*
CHEM F105X—General Chemistry 4
CHEM F106X—General Chemistry 4
CHEM F202—Basic Inorganic Chemistry 3
CHEM F212—Chemical Equilibrium and Analysis 4
CHEM F312—Instrumental Analysis 4
CHEM F321, F322—Organic Chemistry 6
CHEM F324W—Organic Laboratory 4
CHEM F331, F332—Physical Chemistry 8
CHEM F413W—Analytical Instrumental Laboratory 3
CHEM F434W—Instrumental Methods in Physical Chemistry 3
CHEM F450—General Biochemistry Macromolecules (3)
or CHEM F451—General Biochemistry Metabolism 3
CHEM F481—Seminar 1
CHEM F482O—Seminar 2
CHEM F488—Undergraduate Chemistry and Biochemistry Research (Environmental Topic) 2

4. Complete the following:
MATH F202X—Calculus III 4
STAT F300—Statistics 3

5. Complete two of the following courses:*
BIOL F115X—Fundamentals of Biology I 4
BIOL F116X—Fundamentals of Biology II 4
GEOS F101X—The Dynamic Earth 4
GEOS F125X—Humans, Earth, and the Environment 4
ATM F101X—Weather and Climate of Alaska 4

6. Complete one of the following advanced courses:*
BIOL F271—Principles of Ecology 4
BIOL F342—Microbiology 4
BIOL F443W—Microbial Ecology 3
BIOL F483—Stream Ecology 3
ENVE F458—Energy and the Environment 3
NRM F380W—Soils and the Environment 3
ATM F401—Introduction to Atmospheric Science 3
CHEM F402—Advanced Inorganic Chemistry 3

7. Complete one of the following advanced courses:*
CHEM F406—Atmospheric Chemistry 3
CE F341—Environmental Engineering 4
GEOS F417—Introduction to Geochemistry 3

8. Minimum credits required 130

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

Forensic Chemistry

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X; PHYS F103X and PHYS F104X, or PHYS F211X and PHYS F212X.)

2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree, complete: MATH F201X. Chemistry foundation courses may be used toward partial fulfillment of the natural science requirement.)

3. Complete the program (major) requirements as listed under Chemistry — B.A. degree.
4. Complete the following chemistry requirements:*
   CHEM F402—Inorganic Chemistry 3
   CHEM F450—General Biochemistry Macromolecules (3)
   or CHEM F451—General Biochemistry Metabolism 3
   CHEM F488—Undergraduate Chemistry and Biochemistry Research 2
5. Complete the following justice requirements:*
   JUST F110—Introduction to Justice 3
   JUST F222—Research Methods 3
   JUST F251—Criminology 3
   JUST F300X—Ethics and Justice** 3
   JUST F354—Procedural Law 3
   JUST F454W—Advanced Problems in Procedural Law 3
6. Minimum credits required 130

* *Student must earn a C grade or better in each course.*
** *JUST F300X may not be used to fulfill core ethics requirement.*

Requirements for Chemistry Teachers (grades 7 – 12)

1. Complete all the requirements of the chemistry B.A. or B.S. degree you wish to seek.
2. All prospective chemistry teachers must complete the following:
   CHEM F450—General Biochemistry Macromolecules (3)
   or CHEM F451—General Biochemistry Metabolism 3
   CHEM F488—Undergraduate Chemistry and Biochemistry Research 4
3. All prospective science teachers must complete the following:
   PHIL F481—Philosophy of Science 3

Note: 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. Above requirements apply to all candidates who apply to the UAF School of Education Spring 2006 or later for licensure in chemistry.

Minor

Chemistry

1. Complete the following:
   CHEM F105X—General Chemistry 4
   CHEM F106X—General Chemistry 4
2. Complete the following approved electives:
   CHEM F212—Chemical Equilibrium and Analysis* 4
   CHEM F321 & CHEM F322—Organic Chemistry 6
   CHEM F331 & CHEM F332—Physical Chemistry 8
3. Complete one of the following additional chemistry lab courses:
   CHEM F202—Basic Inorganic Chemistry 3
   CHEM F324W—Organic Chemistry Lab 4
4. Minimum credits required ..... 29 – 30

Biochemistry

1. Complete the following foundation courses:
   CHEM F105X—General Chemistry 4
   CHEM F106X—General Chemistry 4
2. Complete the following:
   CHEM F321—Organic Chemistry 3
   CHEM F322—Organic Chemistry 3
   CHEM F331—Physical Chemistry 4
   CHEM F451—General Biochemistry — Metabolism 3
3. Complete two of the following chemistry lab courses:
   CHEM F202—Basic Inorganic Chemistry 3
   CHEM F212—Chemical Equilibrium and Analysis 4
   CHEM F324—Organic Chemistry Lab 4
4. Minimum credits required ..... 28 – 29

CHILD DEVELOPMENT AND FAMILY STUDIES

College of Rural and Community Development
Bristol Bay Campus 907-842-5109
Chukchi Campus 907-442-3400
Interior-Aleutians Campus 907-474-5439
Kuskokwim Campus 907-543-4500
Northwest Campus 907-443-2201
Tanana Valley Campus 907-455-2038
www.uaf.edu/rural/

B.A. Degree

Minimum Requirements for Degree: 129 credits

This program provides the necessary preparation for early childhood educators who wish to advance their professional knowledge and career opportunities with specialized study in curriculum, administration or family support. A strong desire to work in an early care and education setting with children and their families is important.

Students who have completed the A.A.S. in early childhood education program will have completed the first part of the B.A. program, although completion of the A.A.S. degree is not a requirement for entry to this program. Students majoring in this program must work closely with their advisors and be willing to work collaboratively within their concentration to fulfill the practicum components of the course of study.

This program is available through flexible course delivery methods to early childhood educators living in both rural and urban Alaska. Graduates are highly competitive candidates for positions of greater responsibility and compensation in the early care and education profession in Alaska.

Major — B.A. Degree

Concentrations: Administration, Curriculum and Teaching, Family Support

1. Complete the general university requirements. (Seepage 131. As part of the core curriculum requirements, BIOL F104X and GEOS F120X or GEOG F111X are recommended. LING F303W, O is recommended to fulfill one of the writing and oral intensive course requirements.)
2. Complete the B.A. degree requirements. (See page 135. As part of the B.A. social science degree requirements, complete PSY F101. Complete ECE F245 or ECE F107. The following courses are also recommended for the humanities/social science requirements: ECE F350, SOC F350W, ASLG F101 and ANS F330. Remaining course requirements should be chosen in consultation with your advisor.)
3. Complete the following program (major) requirements:*
   ECE F101—Overview of the Profession 3
   ECE F118—Nutrition, Health and Safety (3)
   or ECE F111—Nutrition (1)
   and ECE F112—Healthy Learning Environments for Young Children (1)
   and ECE F113—Safe Environments for Young Children (1) 3
   ECE F210—Child Guidance 3

ECE F220—Infant and Toddler Care (3)
or ECE F104—Child Development I: Prenatal Infants and Toddlers (3) 3
ECE F235—Screening, Assessment and Recording....2
ECE F240—Inclusion of Children with Special Needs....3
ECE F270—Practicum II....3
ECE F3420—Family Relationships....3
ECE F445W—Adolescence through the Lifespan....3
ECE F470—Advanced Practicum.... 3

4. Complete one of the following specialized areas:*

Administration

a. Complete the following 21 credits:
ECE F340—Financial Management....3
ECE F341—Personnel Management.... 3
CIOS F150—Computer Business Applications....3
ENGL F212—Business, Grant and Report Writing....3
BA S301—Principles of Management (UAS) (3)
or ABUS F301W—Leadership....3
BA S343—Principles of Marketing (UAS)....3
BA S490—Political and Social Environment of Business (UAS)....3
Note: This specialization is offered in collaboration with the University of Alaska Southeast. For course descriptions of UAS courses see current University of Alaska Southeast catalog. These courses are available by distance delivery.

Curriculum and Teaching

a. Complete the following 21 credits:
ECE F140—Social Development....3
ECE F120A—Curriculum I (3)
or ECE F127—Language and Creative Expression....3
ECE F310—Constructivist Curriculum.... .3
ECE F360—Assessment in Early Childhood.... 3
ECE F420W—Developing Literacy in the Early Years....3
ECE F430—Fine Arts in the Early Years....3
ECE F440—Exploring Math and Science in the Early Years....3

Family Support

a. Complete the following 21 credits:
ECE F132—Young Child and the Family....1
HUMS F265—Substance Abuse and the Family....2
ECE F242—Child and Family Ecology....3
or SOC F242—The Family: A Cross Cultural Perspective....3
SWK F350W—Women's Issues in Social Welfare and Social Work Practice....3
SWK F360—Child Abuse and Neglect....3
ANTH F407—Kinship and Social Organization....3
or RD F401—Cultural Knowledge of Native Elders....3
or RD F460—Women and Development....3
ECE F442—Family Resource Management....3

5. Minimum credits required....129

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

CIVIL ENGINEERING

College of Engineering and Mines
Department of Civil and Environmental Engineering
907-474-7241
www.uaf.edu/cem/cee/

B.S. Degree

Minimum Requirements for Degree: 134 credits

Civil engineers plan, design and supervise the construction of public and private structures such as space launching facilities, offshore structures, bridges, buildings, tunnels, highways, transit systems, dams, airports, irrigation projects, and water treatment and distribution facilities.

Civil engineers use sophisticated technology and employ computer-aided engineering during design, construction, project scheduling and cost control project phases. They are creative problem solvers involved in community development and the challenges of pollution, deteriorating infrastructure, traffic congestion, energy needs, floods, earthquakes and urban planning.

The civil engineering program at UAF began in 1922 and graduated its first major in 1931. Many of the more than 800 men and women who have graduated since then work in a wide range of positions all over Alaska. More than 60 percent of Alaska's professional engineers practice in civil engineering. The program at UAF has been accredited since 1940 and is currently accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. All engineering programs in the department give special attention to problems of northern regions.

The civil engineering program educational objectives are:

1. Graduates will have a strong fundamental scientific and technical knowledge base as well as strong critical thinking skills.
2. Graduates will apply their engineering skills to critically analyze and interpret data and be proficient in engineering design accommodating the total project environment.
3. Graduates will be able to communicate with the technical, professional and broader communities in written, verbal and visual formats, including interacting in interdisciplinary contexts.
4. Graduates will demonstrate high standards in ethical, legal and professional obligations to protect human health, welfare and the environment.
5. Graduates will be active in the professional civil engineering community, actively contribute to the profession and pursue life-long learning.

Graduate students may enter one of two programs: the master of civil engineering is for students whose goal is broad professional practice, and the master of science degree is for those who favor an emphasis on research and specialized study.

In addition to general civil engineering courses, the department offers specialties in transportation, geotechnical, structures, water resources, hydrology and environmental studies. These courses emphasize principles of analysis, planning and engineering design in northern regions.

A master's degree program can include courses in environmental engineering, engineering management and other areas. An advanced degree in environmental engineering administered within the civil engineering department is available.

For more information about the civil engineering program mission, goals and educational objectives, visit www.uaf.edu/cem/cee/about/.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X*, CHEM F105X* and CHEM F106X*.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X*; PHYS F211X* and PHYS F212X*.)
3. Complete the following program (major) requirements:*
CE F112—Elementary Surveying....3
CE F302—Introduction to Transportation Engineering....3
CE F326W—Introduction to Geotechnical Engineering....4

CE F331—Structural Analysis....3
CE F334—Properties of Materials....3
CE F344—Water Resources Engineering....3
CE F400—FE Exam....0
CE F432—Steel Design....3
CE F438W,O—Design of Engineered Systems....3
CE F441—Environmental Engineering....4
CE F490—Civil Engineering Seminar....0.5
CE F491—Civil Engineering Seminar....0.5
DRT F170—Beginning AutoCAD....3
ES F101—Introduction to Engineering....3
ES F201—Computer Techniques....3
ES F209—Statics....3
ES F210—Dynamics....3
ES F301—Engineering Analysis....3
ES F331—Mechanics of Materials....3
ES F341—Fluid Mechanics....4
ESM F422—Engineering Decisions....3
ESM F450W—Economic Analysis and Operations....3
GE F261—General Geology for Engineers....3
MATH F202X—Calculus III....4
MATH F302—Differential Equations....3
Technical electives**....12

4. Minimum credits required....134

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

** *Technical electives must include 3 credits in the field of environmental engineering or transportation, 6 credits of CE, ENVE, ESM courses or approved technical courses, and 3 credits of either ES F307 or ES F346. Students must earn a C grade or better in each technical elective course. Up to two graduate level courses may be used towards graduation. Graduate level courses must be approved by advisor and the students must be within two semesters of graduation and have at least a 3.0 GPA to take graduate level courses.*

Note: The ability to use computers for normal class work is expected in all engineering classes above the F100-level.

COMMUNICATION

College of Liberal Arts
Department of Communication
907-474-6591
www.uaf.edu/comm/

B.A. Degree

Minimum Requirements for Degree: 120 credits

The communication program teaches students to communicate effectively and ethically in a rapidly changing world characterized by diversity in gender, culture and belief. It offers a comprehensive background in the discipline in preparation for employment or further education. Students majoring in other disciplines find communication electives valuable additions to their programs.

The program is both theoretical and pragmatic, designed to prepare students for the professional workplace or for advanced study.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   a. Complete the following:
      COMM F180—Introduction to Human Communication....3
      COMM F330—Intercultural Communication....3
      COMM F351—Gender and Communication....3
      COMM F401—Communication Research Methods....3
      COMM F425W—Communication Theory....3
      COMM F482W,O—Capstone Seminar in Communication....3
   b. Complete four of the following:**
      COMM F300X—Communicating Ethics***....3
      COMM F320—Communication and Language....3
      COMM F321W—Nonverbal Communication....3
      COMM F322W—Communication in Interpersonal Relationships....3
      COMM F331O—Advanced Group Communication....3
      COMM F335O—Organizational Communication....3
      COMM F352—Family Communication....3
      COMM F353—Conflict, Mediation, and Communication....3
      COMM F380—Communication and Diversity....3
      COMM F432O—Professional Public Speaking....3
      COMM F441—Persuasion....3
      COMM F462W—Communication in Health Contexts....3
      COMM F475W—Applied Communication in Training and Development....3
4. Minimum credits required....120

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

** *With approval of advisor, an appropriate level special topics or independent studies course in communication may be used to meet this requirement.*

*** *If taken to meet the upper-division of baccalaureate core requirement for Ethics/Values and Choices in the Perspectives in the Human Condition, then the student must take an additional F300- or F400-level communication course to complete the major.*

Minor

1. Complete the following:
   COMM F180—Introduction to Human Communication....3
   COMM F330—Intercultural Communication (3)
   or COMM F351—Gender and Communication....3
2. Complete communication electives at the F300-level or above....9
3. Minimum credits required....15

Note: Courses designated as social science or humanities that are taken for the minor may also be used to fulfill social science and/or humanities distribution requirements for the B.A. degree.

COMPUTER ENGINEERING

College of Engineering and Mines
Department of Electrical and Computer Engineering
907-474-7137
www.uaf.edu/cem/ece/

B.S. Degree

Minimum Requirements for Degree: 135 credits

The mission of the UAF Electrical and Computer Engineering Department is to offer the highest quality, contemporary education in electrical and computer engineering at the undergraduate and graduate levels and to perform research appropriate to the technical needs of the state of Alaska, the nation and the world.

Computer engineering is a relatively new discipline. It lies somewhere in the middle between computer science, which covers theory, algorithms, software, networking, graphics and computer architecture — and electrical engineering, which covers microelectronics, electrical circuits and devices, networks, communications systems, computer architecture, hardware design and systems analysis. Computer engineers design, analyze, produce, operate, program and maintain computer and digital systems. They apply theories and principles of science and mathematics to the design of hardware, software, networks and processes to solve technical problems.

Over the past decade, computers have evolved into complex systems that may consist of single machines or many interconnected computers linked by a data network. In one form or another,

computers now control most telephone and communications systems, process control and manufacturing automation systems, management information systems, household appliances, automobiles, transportation systems and medical instrumentation. Computers also form the core of the Internet. To work in the constantly evolving discipline of computer systems engineering, the computer engineer must acquire competence in both digital computer hardware and the fundamentals of software engineering.

Careers in computer engineering are as wide and varied as computer systems themselves. Systems range from embedded computer systems found in consumer products or medical devices; control systems for automobiles, aircraft and trains; to more wide-ranging applications in telecommunications, financial transactions and information systems. The Bureau of Labor Statistics lists computer engineering as the fastest growing occupation in the U.S., with 299,000 jobs in 1998 to a predicted 622,000 jobs in 2008.

The faculty of the Electrical and Computer Engineering Department at UAF seek to provide a positive learning environment that enables students to pursue their goals in an innovative program that is rigorous and challenging, open and supportive. The B.S. program develops practical skills by emphasizing hands-on experience in the design, implementation, and validation of electrical systems in an environment that fosters and encourages innovation and creativity. This approach builds the foundation for the following program's educational objectives:

1. Breadth: Graduates will utilize their broad education emphasizing computer engineering to serve as the foundation for productive careers in the public or private sectors, graduate education, and lifelong learning.
2. Depth: Graduates will apply their understanding of the fundamental knowledge prerequisite for the practice of and/or advanced study in computer engineering, including its scientific principles, rigorous analysis, and creative design.
3. Professional Skills: Develop skills for clear communication and responsible teamwork, and cultivate professional attitudes and ethics, so that graduates are prepared for the complex modern work environment and for lifelong learning.

These objectives serve the department, college and university missions by insuring that all graduates of the program have received a high quality, contemporary education that prepares them for a rewarding career in computer engineering.

Candidates for the B.S. degree are required to take the state of Alaska Fundamentals of Engineering Examination in their general field.

For more information about the computer engineering program mission, goals and educational objectives, visit www.uaf.edu/cem/ece/about/.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X, CHEM F105X and CHEM F106X or PHYS F213X.)*
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X, PHYS F211X and PHYS F212X.)*
3. 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 Systems 3
   - CS F331—Programming Languages 3
   - EE F102—Introduction to Electrical Engineering 3
   - EE F203—Electrical Engineering Fundamentals I 4
   - EE F204— Electrical Engineering Fundamentals II 4
   - EE F333W—Physical Electronics 4
   - EE F334—Electronic Circuit Design 4
   - EE F311—Applied Engineering Electromagnetics 3
   - EE F331—High Frequency Lab 1
   - EE F343—Digital Systems Analysis and Design 4
   - EE F443—Computer Engineering Analysis and Design 4
   - EE F444W,O—Embedded Systems Design 4
   - EE F463—Communication Networks 3
   - ES F101—Introduction to Engineering 2
   - ESM F450W—Economic Analysis and Operations 3
   - MATH F202X—Calculus III 4
   - MATH F302—Differential Equations 3
   - MATH F307—Discrete Mathematics 3
   - Approved electives** 9
   - Approved engineering science elective*** 3
4. Complete State of Alaska Fundamentals of Engineering examination
5. Minimum credits required 135

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

** *Recommended electives are: EE F353, EE F354, EE F434, EE F451, EE F461, EE F464, CS F361, CS F381, CS F472, CS F411, CS F421, CS F431, CS F441, CS F471, CS F481*

*** *Engineering science elective to be chosen from ES F208, ES F331, ME F334, ES F341, ES F346.*

COMPUTER SCIENCE

College of Natural Science and Mathematics
Department of Computer Science
907-474-2777
www.cs.uaf.edu

B.S., B.S./M.S. Degrees

Minimum Requirements for Degrees: B.S.: 120 credits;
B.S./M.S.: 141 credits

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. The employment potential for computer science graduates is one of the highest of all majors in the College of Natural Science and Mathematics.

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 131. As part of the core curriculum requirements, complete: MATH F200X* and any approved ethics course.)
2. Complete the B.S. degree requirements. (See page 136. 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 F308W—Abstract Algebra 3
   MATH F310—Numerical Analysis 3
   MATH F314—Linear Algebra 3
   MATH F371—Probability 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 F411—Analysis of Algorithms (3)
   or CS F451—Automata and Formal Languages (3) 3
   CS F441—Systems Architecture (3)
   or EE F443—Computer Engineering (4) ..... 3 – 4
   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
   Electives in computer science at the F300- or F400-level
   or approved electives (such as EE F443) 9

6. Minimum credits required 120

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

Major — B.S./M.S. 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 B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X*, PHYS F211X* and PHYS F212X*.)

4. 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

5. Complete the following master core courses:
   CS F611—Complexity of Algorithms 3
   CS F631—Programming Language Implementation 3
   CS F641—Advanced Systems Architecture 3
   CS F671—Advanced Software Engineering 3
   CS F690—Graduate Seminar and Project 3
   CS F691—Graduate Seminar and Project 3
   CS upper-division/graduate level electives 3
   CS graduate level electives 6

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 for both degrees 141

* *Student must earn a C grade 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. The C grade 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 minor requirements:*
   CS F201—Computer Science I 3
   CS F202—Computer Science II 3
   Three electives at the F300- or F400-level from CS, EE F341, MATH F310, MATH F460; or electives approved by a computer science advisor 9

2. Minimum credits required 15

* *Student must earn a grade of C 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.

EARTH SCIENCE

College of Natural Science and Mathematics
Department of Geology and Geophysics
907-474-7565
www.uaf.edu/geology/

B.A. Degree

Minimum Requirements for Degree: 130 credits

This program provides broad training in various aspects of earth science. It is especially applicable to those wishing to teach earth science or who are entering a field such as resource management.

Basic course work is designed to meet the National Science Teachers Association requirements for teaching secondary school earth science. Students arrange additional required course work and specialization emphasis in consultation with an undergraduate advisor and a faculty member from the appropriate department. Students wishing to enroll in this degree program should contact the head of the geology and geophysics department.

The earth sciences B.A. degree meets the undergraduate requirements for prospective secondary earth science teachers (grades 7 – 12).

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: NRM F303X*, CHEM F103X and CHEM F104X or CHEM F105X and CHEM F106X or PHYS F103X and PHYS F104X).

2. Complete the B.A. degree requirements. (See page 135. As part of the B.A. degree requirements, complete: PHIL F481 for the humanities requirement.)

3. Complete the following program (major) requirements:*
   GEOG F339—Maps and Landscape Analysis (4)
   or GEOS F408—Photogeology (2) ..... 2 – 4
   GEOG F307—Weather and Climate 3
   GEOG F402—Resources and Environment 3
   GEOS F101X—The Dynamic Earth 4
   GEOS F112X—The History of Earth and Life 4
   GEOS F225—Field and Computer Methods In Geology 3
   GEOS F262—Rocks and Minerals 3
   GEOS F304—Geomorphology 3
   GEOS F315W—Paleobiology and Paleontology (4)
   or BIOL F328O—Biology of Marine Organisms (3) ..... 3 – 4
   GEOS F422—Remote Sensing (3)
   or NRM F338—Introduction to GIS (3) 3
   MSL F111X—The Oceans 4
   NRM F101—Natural Resource Conservation and Policy 3
   PHYS F175X—Introduction to Astronomy 3
   Complete an additional approved 9 credit specialization emphasis at the F300-level or above with emphasis in geology, geography, biology, natural resources management or other earth science-related field as approved by the undergraduate advisor 9

4. Complete any UAF minor except geology. If appropriate, courses used to satisfy the specialization emphasis requirement can also be applied towards the requirements for a minor.

5. Minimum credits required 130

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

Note: The following courses are recommended to fulfill the upper-division writing and oral intensive requirements (2 "W" courses and 1 "O" course): GEOS F475WO, GEOS F463O, GEOS F315W, GEOG F490WO, NRM F304WO, or NRM F380W.

Note: Geography courses taken to meet the B.A. social science requirement may also be used to fulfill the specialization emphasis and (or) minor requirements. GEOG F402, a major requirement, also satisfies the B.A. social science requirement.

Note: In consultation with an undergraduate advisor, students should prepare an undergraduate study plan that includes specific courses to satisfy the major and minor complexes. This should be completed by the end of the sophomore year.

Note: 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. The Earth Science B.A. degree requirements will apply to the UAF School of Education during spring 2006 or later for licensure in secondary earth science.

ECONOMICS

School of Management
Department of Economics
907-474-7461
www.uaf.edu/som/programs/econ/

B.A., B.B.A. Degrees

Minimum Requirements for Degrees: 120 Credits

Economics is the study of social activities concerned with the production, distribution and consumption of goods and services. Nearly all social phenomena and problems have economic aspects, and therefore, knowledge of economic systems and their relations with each other is essential to an understanding of the complex world in which we live.

The department has three undergraduate instructional goals: to provide students with basic tools of analysis and the factual, statistical and descriptive materials they will need to perform their duties as citizens; to introduce economics majors to the various fields of economics to prepare them for positions in business and government and for graduate study; and to offer a course of study suitable for a minor in economics.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F262X* or MATH F200X.*)

2. Complete the B.A. degree requirements. (See page 135. As part of the B.A. degree requirements, complete: MATH F161X*, ECON F201 and ECON F202, and 3 credits of a political science elective.)

3. Complete the following foundation requirements:*
   ACCT F261—Accounting Concepts and Uses I 3
   ECON F227—Intermediate Statistics for Economics and Business 3
   ECON F321—Intermediate Microeconomics 3
   ECON F324—Intermediate Macroeconomics 3
   ECON F463W—International Economics 3
   STAT F200X—Elementary Probability and Statistics 3
   Economics electives at the F300-level or above** 18

4. Minimum credits required 120

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

** *Up to 6 credits of the following courses may be included: BA F325, F343 and F360. At least 6 credits of electives must be courses designated writing intensive (W).*

Major — B.B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F262X* and BA F323X.*)

2. Complete the B.B.A. degree requirements. (See page 137. As part of the Common Body of Knowledge, complete AIS F310.)

3. Complete the following program (major) requirements:*
   ECON F321—Intermediate Microeconomics 3
   ECON F324—Intermediate Macroeconomics** 3
   ECON F350—Money and Banking II** 3
   ECON F463W—International Economics 3
   ECON F351—Public Finance (3)
   or ECON F451W—Public Expenditure Analysis (3) 3
   ECON F409W—Industrial Organization (3)
   or ECON F420W—Labor Markets and Public Policy (3) 3
   ECON F434W—Environmental Economics (3)
   or ECON F439W—Energy Economics (3) 3
   BA F460O—International Business 3

4. Complete a minor complex (optional) or free electives to meet minimum credits required.

5. Minimum credits required 120

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

** *If not taken in the B.B.A. Common Body of Knowledge (CBK).*

Note: At least 6 credits in the major must be courses designated writing intensive (W).

Minor

1. Complete the following:
   ECON F201—Principles of Economics I: Microeconomics 3
   ECON F202—Principles of Economics II: Macroeconomics 3
   Approved economics courses at the F300-level or above 12

2. Minimum credits required 18

EDUCATION

School of Education
907-474-7341
www.uaf.edu/educ/

B.A. Degree and Post-baccalaureate Licensures

Minimum Requirements for Degree: 130 credits;
Post-baccalaureate secondary licensure: 31 credits;
Music K – 12 licensure: 33 credits (Contact the music department at 907-474-7555.)
Art K – 12 licensure: 34 credits

The University of Alaska Fairbanks complies fully with the institutional reporting requirements mandated in Title II of the Higher Education Act Amendments of 1998. Please contact the School of Education for a copy of the report.

The UAF School of Education prepares students from across Alaska, as well as from other states and nations, to work in urban and rural Alaska and to work with multicultural and minority — especially Alaska Native — students. To fulfill our commitment to enhancing educational opportunities for the state's rural and Native populations, faculty actively and knowledgeably utilize educational technology to deliver all School of Education programs to students in most areas of the state.

The School of Education offers bachelor's degrees in arts and sciences and elementary education; and post-baccalaureate programs in elementary education, secondary education, counseling, curriculum and instruction, and reading, several of which lead to state endorsements.

The UAF School of Education is approved by the Alaska Department of Education and Early Development to recommend its students for Alaska licensure as elementary and secondary teachers, reading specialists, and school counselors. Courses are available on-site and by distance delivery through the Kuskokwim, Bristol Bay, Interior-Aleutians, Chukchi, and Northwest campuses, as well as on the Fairbanks campus. Faculty research in cross-cultural studies, curriculum and instruction, language and literacy, and small rural schools supports the mission of the School of Education.

Priority for enrollment in field-based courses is given to rural students formally admitted to degree and licensure programs. All inquiries should be addressed to one of the rural campuses or to the School of Education's Student Services Office.

Candidates for elementary and secondary licensures are required to have use of/own a laptop computer: elementary, before enrolling in ED 329 and 344; secondary, before the fall semester. Computers may be of any type but must have capacities that enable candidates to meet School of Education requirements. Candidates enrolled in School of Education courses at any level (with the exception of 500 level professional development courses) are eligible to purchase a Macintosh laptop computer at a special discount through the School of Education. Laptop requirements and purchase information can be viewed by accessing the "Technology Requirement" link at the website of the School of Education, www.uaf.edu/educ/. If you have questions about how a laptop purchase will fit in with your current financial aid package, please contact the UAF Financial Aid Office.

Licensure Information

UAF education programs are approved by the Alaska State Board of Education and accredited by the National Council for the Accreditation of Teacher Education. For information about these programs, contact one of the UAF School of Education academic advisors.

Certification is awarded by the Alaska Department of Education and Early Development in Juneau. Therefore, students must meet all requirements specified by EED at the time of their application for the teaching certificate. In addition to completing an approved teacher training program, the state of Alaska requires that all initial applicants provide evidence of passing scores on one of various state identified skills tests; the UAF School of Education requires Praxis I for this purpose. For additional information, see the Alaska State Department of Education and Early Development website.

B.A. Degree, Elementary Education

Students in the bachelor of arts in elementary education degree program are assessed relative to national and state standards, including National Council for Accreditation of Teacher Education standards, the Alaska Teacher Standards, the Alaska Student Content and Performance Standards, and the Alaska Standards for Culturally Responsive Schools. Course work provides students on the Fairbanks campus and in remote sites with the experience necessary to be eligible for an elementary teacher license. The integrated major/minor degree requirements are designed to prepare students to meet standards that recognize, respect and build upon Alaska's cultural, linguistic and geographic factors.

The interdisciplinary degree requirements provide breadth in the content areas necessary for successful teaching at an elementary level. They provide depth in the opportunities to connect theory and practice in real classroom, school, and community contexts. Students completing this degree benefit from collaborative efforts with academic departments across campus and from School of Education partnerships with a wide range of Alaska's rural and urban schools and districts.

The degree has four central components: (1) subject area course work in the designated UAF core requirements; (2) additional subject area course work in those areas important for successful teaching at an elementary level; (3) an integrated set of education courses and fieldwork in schools and the community to provide the foundation for a successful professional internship year; and (4) a capstone year-long school internship with a mentor teacher, with concurrent enrollment in professional course work that focuses on the integration and application of theory, research and practice in real school environments. Students follow the calendar of the school or district in which they complete their internship. Candidates serving internships are charged a $150 fee per semester.

Degree and program requirements include multiple types of ongoing assessments throughout the programs. There is a strong emphasis on performance assessment and portfolio development and evaluation relative to national and state standards.

Transition/Admission Requirements

B.A. in elementary education students should enroll in the School of Education's recommended sequence of core and major course requirements during their first two years. By following the sequence recommended in Transition One (see School of Education website), students will be knowledgeable about their status relative to their progress toward meeting the criteria for admission to the professional internship year. To make certain that students will be able to receive the support necessary to prepare for the internship year, all B.A. in Elementary Education students are required to submit Praxis I scores (passing scores are not required until applying to the internship year) to the School of Education prior to enrolling in EDSE F482, and Praxis II (test 0014) test scores must be submitted with the Intern Year Admission packet. Prior to enrollment in professional-year courses and prior to receiving an internship placement in a classroom, all students must submit the materials listed below and meet admission requirements as described in Transition Two. **Declaring a B.A. major in elementary education does not guarantee admission to the professional internship year.**

Internships begin in August or September on the date when teachers return to school (this varies across districts). Since internship placements are arranged with principals and mentor teachers in the spring, all materials necessary for determining admission to the School of Education must be submitted by Feb. 1. Faculty in the School of Education consider multiple criteria in making valid

and reliable judgments about each applicant's knowledge, skills, and professional characteristics prior to approval for the year-long internship in a classroom with elementary children.

Students must submit the following information to the School of Education by Feb. 1:

1. Copies of transcripts from all institutions attended.
2. Evidence of plan of completion of all B.A. degree in elementary education degree courses by August 1st (except for those required in the Professional Internship Year), with a minimum of a 2.75 overall GPA, a 2.0 in each major academic area, and a C or better in the UAF Core communication courses and in all required education and math courses. Students with less than a 2.75 overall GPA may be considered for conditional admission in special circumstances.
3. Alaska Passing scores from the Praxis I exams in reading, writing and math, and Praxis II exam (test 0014).
4. Two letters of reference that address qualifications and potential as a teacher.
5. A current and complete resume/curriculum vitae.
6. Two one-page essays on topics determined by the School of Education.
7. Completed Elementary Teacher Education Academic Analysis and Life/Work Form to provide information on breadth and depth of prior course work and/or documented life experiences relative to ten Alaska Student Content Standard areas.
8. A one-to-two-page autobiographical sketch (appropriate for presenting to prospective principals and mentor teachers).
9. Extemporaneous writing sample. Contact the School of Education advising office for date, time and location information.
10. Evidence of successful experiences in teaching and learning situations.
11. Evidence of ability to work collaboratively and respectfully in cross-cultural contexts.
12. Completed Alaska Student Teacher Authorization Packet (including fingerprint cards and criminal background check. Forms are available from the School of Education).
13. Complete an interview, when requested.
14. Some school districts may require interns to pass a general physical exam and require additional shot records.

Note: Students are admitted for a specific academic year and must reapply if they do not enroll in the year in which they were reviewed.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete the following*: ANTH/SOC F100X, HIST F100X, PS F100X, MATH F107X* or MATH F161X*, ART/MUS/THR F200X, BIOL F100X or BIOL F104X, CHEM F100X or PHYS F115X**. Students who choose the language option to meet core perspectives on the human condition requirements can submit their language credits only for the ENGL/FL F200X and the core ethics requirements.)
2. Complete the following B.A. degree and program (major) requirements:
   a. Complete the following mathematics requirements:*
      MATH F205—Mathematics for Elementary School Teachers I 3
      MATH F206—Mathematics for Elementary School Teachers II 3
   b. Complete one of the following:
      GEOS F100X—Introduction to Earth Science 4
      GEOS F101X—The Dynamic Earth 4
      GEOS F120X—Glaciers, Earthquakes and Volcanoes: Past, Present and Future 4
      PHYS F116X—Physical Science II ** 4
   c. Complete the following social sciences requirements:
      ANTH F242—Native Cultures of Alaska 3
      ED/PSY F245—Child Development 3
      GEOG F101—Expedition Earth: Introduction to Geography (3)
        or GEOG F203—World Economic Geography (3) 3
      HIST F131—History of the U.S. 3
      HIST F461W—History of Alaska (3)
        or HIST F115—Alaska, Land and Its People (3) 3
      PSY F101—Introduction to Psychology 3
   d. Complete the following humanities requirements:
      ENGL F271—Introduction to Creative Writing — Fiction (3)
        or ENGL F272—Introduction to Creative Writing — Poetry (3)
        or ENGL F314W,O/2—Technical Writing (3)
        or JRN F311W—Magazine Article Writing (3) 3
      ENGL F306—Survey of American Literature: Beginnings to the Civil War (3)
        or ENGL F307—Survey of American Literature: Civil War to Present (3)
        or ENGL F308—Survey of British Literature: Beowulf to the Romantic Period (3)
        or ENGL F309—Survey of British Literature: Romantic Period to the Present (3)
        or complete another literature-focus course (3) 3
      ED F486O/2—Media Literacy (3)
        or JRN F308—Film and TV Criticism 3
   e. ED/LING F100—Language, Linguistics and Education (3)
        or LING F101—Nature of Language (3)
        or LING F303W,O—Language Acquisition (3) 3
   f. ED F329—Teaching with Technology 3
   g. Complete the following education requirements:*
      ED F110—Becoming a Teacher in the 21st Century 1
      ED F201—Introduction to Education 3
      ED F204—Literature for Children 3
      ED F330—Assessment of Learning 3
      ED F350—Communication in Cross-Cultural Classrooms (3)
        or ED/ANS F420—Alaska Native Education (3)
        or ED/ANS F461—Native Ways of Knowing (3) 3
      ED F344W—Foundations of Literacy Development 3
      EDSE F422—Curriculum and Strategies II: High Incidence 3
      EDSE F482—Inclusive Classrooms for All Children 3
   h. Complete the following professional internship year with integrated course work (first semester):
      ED F411—Reading, Writing, Language Arts: Methods and Curriculum Development 3
      ED F412W—Integrated Social Studies and Language Arts: Methods and Curriculum Development 3
      ED F466—Internship and Collaborative Student Teaching 3
      ED F467—Synthesizing the Standards I 1
      ED F478—Math Methods and Curriculum Development 2
      ED F479—Science Methods and Curriculum Development 2
   i. Complete the following professional internship year with integrated course work (second semester):
      ED F414—Art, Music and Drama in Elementary Classrooms 2
      ED F415—Physical and Health Education for Elementary Teachers 2
      ED F468O—Internship and Student Teaching 6
      ED F469—Synthesizing the Standards II 2

3. Minimum credits required 130

* *Student must earn a C grade or better in each core communications, mathematics and education course.*

** *If PHYS F115X is completed for the core, a student cannot take PHYS F116X to fulfill the science requirement in the major.*

Minor — Education

Education — General

The General Education minor is designed for any student interested in education issues who does not intend to pursue a license in elementary or secondary education.

1. Complete the following:*
   - ED F110—Becoming a Teacher in the 21st Century 1
   - ED F201—Introduction to Education 3
   - ED F350—Communication in Cross-Cultural Classrooms (3) or ANS/ED F420—Alaska Native Education (3) 3
   - PSY F240—Lifespan Developmental Psychology (3) or ED/PSY F245—Child Development (3) 3
   - Approved education electives** 6
2. Minimum credits required 16

* *Practicum may be required in each education course.*

** *Contact the School of Education's Student Services Office for list of approved elective courses.*

Education Minor — Elementary*

The elementary education minor is designed for students who intend to pursue a license in elementary education. Students who complete ED F110, F201, F330, F344 and EDSE F482 with grades of C or better will be allowed to substitute this sequence for ED F624, F625 and F626 in the post-baccalaureate elementary licensure program available on the UAF campus.

1. Complete the following:
   - ED F110—Becoming a Teacher in the 21st Century 1
   - ED F201—Introduction to Education 3
   - ED F204—Literature for Children.....3
   - ED F330—Assessment of Learning 3
   - ED F344—Foundations of Literacy Development.....3
   - ED F350—Communication in Cross-Cultural Classrooms (3) or ANS/ED F420—Alaska Native Education (3) 3
   - EDSE F482—Inclusive Classrooms for All Children.....3
2. Minimum credits required 19

* *Practicum may be required in each education course.*

Education Minor — Secondary*

The secondary education minor is designed for students who are interested in pursuing careers as secondary education teachers. Students must complete all course work with grades of C (2.0) or better. Completion of EDSC F205 will meet the EDSC F415 requirement in the Secondary Licensure program requirement. Completion of EDSE F482 will meet the EDSC F414 requirement in the Secondary Licensure Program requirement.

1. Complete the following:
   - PSY F240—Lifespan Development Psychology 3
   - EDSC F205—Introduction to Secondary Education (3) or EDSC F415—Foundations of Modern Educational Practice (3) 3
   - EDSC F458—Classroom Organization and Management 3
   - EDSC F407—Developing Literacy in the Content Areas 3
   - EDSC F482—Inclusive Classrooms for All Children (3) or EDSC F414—Learning, Development and Special Needs Instruction (3).....3
2. Minimum credits required 15

* *Practicum may be required in each education course.*

Secondary Post-Baccalaureate Licensure Program

Program delivery is offered in Fairbanks and in areas served by the College of Rural and Community Development (CRCD) campuses and their service areas with the exception of the Aleutian-Pribilof Center.

This is an intensive, classroom-based secondary licensure program (31 credits) that prepares post-baccalaureate candidates for secondary (grades 7 – 12) teaching positions. The program is specifically designed to prepare candidates to teach in multicultural settings in Alaska. Content that addresses multicultural issues in general, and Alaska rural issues in particular, is contained specifically in EDSC F457—Multicultural Education and School-Community Relations, and is a fundamental component of the course work within the program. When funding is available, all secondary Fairbanks candidates participate in a rural practicum.

Student outcomes for the program are based on the Standards for Alaska's Teachers located at: www.eed.state.ak.us/standards/pdf/teacher.pdf.

At the end of the program, if students have successfully met all of the program requirements, they will be eligible to apply for an Alaska initial teaching license and will receive certificates of completion from UAF.

Candidates who enter the Secondary Post-Baccalaureate Licensure program are required to have use of/own a laptop computer before they begin their internships in the fall semester of their professional year.

Program Options

Fast Track Option

The Fast Track Option is an intensive three-semester program that allows candidates (one year unpaid interns) to complete the secondary licensure program as full-time students in 12 months. Candidates take classes "summer-fall-spring." The academic year-long internship is completed during the fall and spring semesters.

Two-Year Option

The Two-Year Option allows candidates (two year unpaid interns) to complete the secondary post-baccalaureate licensure program as part-time students over a period of 18 – 24 months. The last semester of the program requires full-time placement at a public school site.

Teaching While Training Option

The Teaching While Training Option is for candidates (teacher interns) who have secured a teaching position with an Alaskan School District. Generally, this option is available only to those candidates in areas of teacher shortage. Candidates complete the secondary post-baccalaureate licensure program over a period of 24 months.

Admissions Process and Requirements

Admission to the secondary post-baccalaureate licensure program includes meeting requirements of the UAF undergraduate admission process and of the School of Education. Students take their courses at the 400-level and will NOT be able to apply these courses towards a master of education degree.

Submit the following information to the UAF Office of Admissions:

1. UAF undergraduate application and application fee.
2. Official transcript of bachelor's degree from accredited institution, minimum GPA of 2.75. Applicants who have attended more than one university should include transcripts from all universities.

Submit the following information to the School of Education:

1. A personal statement of 500 – 800 words explaining your motivation for becoming a teacher. Describe how your

academic qualifications and work experiences have prepared you for a career in teaching. Elaborate on your personal strengths, including your ability to work collaboratively with others. Describe your experiences with adolescents in instructional and supervisory capacities. Explain why you believe you can help young people of all cultures be successful in school.

2. A vitae/resume.
3. Three current letters of reference that address qualifications and potential as a teacher.
4. Extemporaneous writing sample. Contact the School of Education Advising Office for date, time and location information.
5. Alaska Passing scores from the Praxis I exam in reading, writing and mathematics.
6. Academic Content Testing
   a. Content Area Exams: Candidates must submit a score report from the relevant content knowledge Praxis II Subject test for each content area the applicant expects to reach. The scores must meet the score set by the State of Alaska (www.eed.state.ak.us/TeacherCertification/pdf/Content_Area_Exams_2008.pdf). In addition, World Language applicants must complete the World Language Exams.
   b. World Language Exams: Applicants applying to teach a World Language are required to submit Praxis II scores in the target language **AND** are required to submit scores for the ACTFL Oral Proficiency Interview (OPic II) and Writing Proficiency Test (WPI). Applicants must meet the Advanced Low rating for both tests (www.languagetesting.com/).
7. Demonstrated evidence of content competency in one of the UAF approved secondary endorsement areas (www.uaf.edu/educ/secondary/endorsement_areas.html).
   a. The applicant holds a degre in an approved UAF secondary endorsement area **or**;
   b. Those applicants who do **not** hold a degree in the academic content area that they expect to teach, **must** have documentation of content competency reviewed by a Secondary Program faculty review team prior to application to program. Additional course work may be required to enter the program.
8. Initial Content Preparation complete checklist of each content area you expect to teach (www.uaf.edu/educ/secondary/admissions.html).
9. Demonstrated evidence of technology competence. Shown by successful completion of ED F237—Technology Tools, or by passing the School of Education's computer technology competency test. Applicants who have not met this requirement by the beginning of the summer program course work will be required to complete ED F237 during the summer program.
10. Applicants must submit a placement packet. Contact the School of Education for specific guidelines. The School of Education determines placement approval, change or termination.
11. All applicants will be required to interview with secondary faculty as part of the admission process.

Application Review Process

Applications are due March 1 and are reviewed thereafter for admission into the summer semester. Applications of outstanding candidates may be considered through spring semester. A candidate may be admitted, not admitted, or admitted with stipulations. Stipulations are specified when additional development in a particular area(s) is needed before beginning a secondary post-baccalaureate program.

The UAF School of Education coordinates with appropriate academic departments the review and evaluation of the candidate's qualifications, professional experiences and academic performance based on the contents of his/her application. The secondary post-baccalaureate program is a selective teacher education program. A comprehensive system including multiple measures is used to assess personal characteristics, communication skills and basic skills of candidates preparing to teach. Multiple assessment measures include a review of transcripts, content area strengths and/or Praxis II scores, personal statement and/or writing proficiency exams, Praxis I scores and letters of reference. A personal interview will be required as part of the admission process.

Upon Acceptance to the Program

The School of Education has a systematic procedure for monitoring the progress of education students from admission through completion of their professional education program to determine if they should continue the program, be advanced to the secondary teaching internship and eventually be recommended for a teaching license. In assessing candidate progress in knowledge, skills and disposition, faculty will review grades, observations, faculty recommendations, demonstrated academic competence and recommendations from the appropriate professionals in the schools. Systematic approaches are used to assist education candidates who are making unsatisfactory progress in their programs, but still maintain potential for successful completion.

Following are specific criteria for entry to the secondary teaching internship:

- successful completion of summer program courses;
- approval of faculty to enter the Secondary Education Internship;
- some school districts may require candidates to pass a general physical exam and require additional shot records; and
- State Alaska Certificate of Authorization, fingerprint cards and money order in the amount of $66 payable to the School of Education by June 1st (this fee is non-refundable once submitted to the state of Alaska). UAF School of Education provides these materials which will then be submitted to the state of Alaska for a criminal background check. Fees are subject to change.

Professional Field Experiences

The Secondary Post-Baccalaureate Licensure Program includes a comprehensive internship experience in an educational setting. Internship placements are arranged and supervised by university faculty in partnership with the principal and staff from the public school. University course work and classroom practice are closely linked and communication about performance in both the course work and classroom practice is shared among the partners. Internships follow the K – 12 school year calendar and not the university academic year calendar.

Performance in the internship must meet stated competencies and individual outcomes. Performance evaluations determine the candidate's progress toward meeting the State of Alaska Standards for Alaska's Teacher and the International Society for Technology in Education's National Education Technology Standards and Performance Indicators for All Teachers and performance guidelines of Specialty Performance Organizations.

It is expected that candidates will demonstrate appropriate professional characteristics with respect to their actions, attitudes and performance. Teacher candidates are required to adhere to the characteristics of professionalism as published in the Secondary Post-Baccalaureate Licensure Handbook, and to abide by the State of Alaska Code of Ethics of the Education Profession. Unacceptable academic performance, an unprofessional attitude, unsatisfactory field

reports, violation of professional ethics, or other factors may result in removal from the field experience and denial of the Institutional Recommendation for teacher certification.

Internship placements are made in partnership with participating school districts, which may request additional information and/or preparation from candidates according to the district's established policies and practices. Because cooperating districts also determine the number of placements available for candidates, placement may become competitive if the number of applicants exceeds the number of spaces. Districts also reserve the right to refuse or terminate placements when candidates do not meet a minimum standard of performance. Thus, while the University will make every effort to identify appropriate field experiences, admission to the Secondary Post-Baccalaureate Licensure program does not guarantee an internship placement.

Program Requirements

1. Complete the following for secondary licensure:
   EDSC F402—Methods of Teaching in the Secondary School....3
   EDSC F407—Reading Strategies for Secondary Teachers 3
   EDSC F414—Learning, Development and Special Needs Instruction 3
   EDSC F415—Foundations of Modern Educational Practices (3)
   or EDSC F205—Introduction to Secondary Education (3)
   EDSC F431—Secondary Instruction and Assessment in the Content Area (3)*
   or EDSC F432—English/Language Arts Secondary Instruction and Assessment (3)*
   or EDSC F433—Mathematics Secondary Instruction and Assessment (3)*
   or EDSC F434—Science Secondary Instruction and Assessment (3)*
   or EDSC F435—Social Studies Secondary Instruction and Assessment (3)*
   or EDSC F436—Art Secondary Instruction and Assessment (3) 3*
   or EDSC F437—World Language Secondary Instruction and Assessment (3)
   EDSC F442—Technology Applications in Education 3
   EDSC F457—Multicultural Education and School-Community Relations.....4
   EDSC F458—Classroom Organization and Management 3
   EDSC F471—Secondary Teaching: School Internship I and Seminar 3
   EDSC F472—Secondary Teaching: School Internship II and Seminar 3
2. Minimum credits required 31

* *Candidates must take the section or course that corresponds with their major teaching content areas.*

K – 12 Art Licensure Program

Offered on the Fairbanks campus only, this is an intensive, classroom-based K – 12 art licensure program (34 credits) that prepares post-baccalaureate candidates for K – 12 teaching positions. The program is specifically designed to prepare candidates to teach in multicultural settings in Alaska. The content will specifically identify and discuss current issues of art education and applying Alaska Content/Performance Standards and Frameworks as well as National Standards for Art Education.

At the end of the program, if students have successfully met all of the program requirements, they will be eligible to apply for an Alaska initial teaching license and will receive certificates of completion from UAF.

Candidates who enter the K – 12 Art Licensure program are required to have use of/own a laptop computer before they begin their internships in the fall semester of their professional year.

For program options and professional field experiences information, please see information listed in the catalog (page 158) for the Secondary Post-Baccalaureate Licensure program.

Admission Process and Requirements

Applicants will follow the admission process and requirements listed in the catalog (page 157) for the Secondary Post-Baccalaureate Licensure Program, with the exception that applicants must have a bachelor's degree in art from an accredited university or college. Applicants should be aware that additional content course work may be required, depending on content of degree. Additional course work, as determined by the appropriate departments, may mean a delay of program admission until requirements are fulfilled.

Program Requirements

1. Complete the following:
   a. Summer:
      EDSC F415—Foundations of Modern Educational Practices ...3
      EDSC F414—Learning, Development and Special Needs Instruction 3
      PSY F240—Lifespan Development (3)
      or (preferred) PSY F245—Child Development (3).....3
   b. Fall:
      EDSC F402—Methods of Teaching in the Secondary School....3
      EDSC F436—Secondary Art Instruction and Assessment.....3
      ED F453/ART F459—Secondary Internship 3
      EDSC F458—Classroom Organization and Management 3
   c. Spring:
      ED F449—Elementary Art Methods.....3
      ED F452/ART F458—Elementary Internship.....3
      EDSC F457—Multicultural Education and School-Community Relations.....4
      EDSC F442—Technology Applications in Education 3
2. Minimum credits required 34

ELECTRICAL ENGINEERING

College of Engineering and Mines
Department of Electrical and Computer Engineering
907-474-7137
www.uaf.edu/cem/ece/

B.S. Degree

Minimum Requirements for Degree: 135 credits

The mission of the UAF Electrical and Computer Engineering Department is to offer the highest quality contemporary education at the undergraduate and graduate levels and to perform research appropriate to the technical needs of the state of Alaska, the nation and the world.

Electrical and computing engineering encompasses telecommunications, electrical power generation, transmission and distribution, control systems, and computer applications and design. Electrical engineers can typically expect gainful employment in one or more of these areas after graduation.

Communication engineers design, build and operate communication devices and systems, including satellites, antennas, wireless devices and computer networks. Electric power engineers design and oversee the construction, installation and maintenance of electrical systems that provide light, heat and power. Power engineers are also instrumental in the development of systems using modern power electronic devices to control power generation and distribution and build electric drives. People trained in computer engineering automate businesses, factories, pipelines and refineries. They design control systems and computers that guide trains, planes and

space vehicles. Electrical engineers design the integrated circuits and automatic control systems used in many areas of science and engineering. Process controls in the mining and petroleum industries are also largely the responsibility of the electrical and computer engineer.

Undergraduate research and design project opportunities are available at UAF in the areas of communications, radar, sonar and lidar remote sensing, instrumentation and microwave circuit design, electric power and energy systems, digital and computer engineering and nanotechnology. The Student Rocket Project brings electrical and computer engineering and mechanical engineering students together to build and launch rockets at the Poker Flat Research Range, the only university-affiliated rocket range in the country. This program offers real engineering experience as well as fellowships, paid internships and scholarships.

The curriculum is designed to ensure that fundamentals and specialized skills are acquired by the student. The program prepares engineers to enter practice upon graduation and provides the theoretical background for students entering graduate studies. Candidates for the B.S. degree are required to take the state of Alaska Fundamentals of Engineering Examination in their general field.

The faculty of the Electrical and Computer Engineering Department at UAF seek to provide a positive learning environment that enables students to pursue their goals in an innovative program that is rigorous and challenging, open and supportive. The BSEE program develops practical skills by emphasizing hands-on experience in the design, implementation, and validation of electrical systems in an environment that fosters and encourages innovation and creativity. This approach builds the foundation for the following program educational objectives:

1. Breadth: Graduates will utilize their broad education emphasizing electrical engineering to serve as the foundation for productive careers in the public or private sectors, graduate education, and lifelong learning.
2. Depth: Graduates will apply their understanding of the fundamental knowledge prerequisite for the practice of and/or advanced study in electrical engineering, including its scientific principles, rigorous analysis, and creative design. The BSEE program offers depth concentration areas in communications, computer engineering, and power and control.
3. Professional Skills: Develop skills for clear communication and responsible teamwork, and cultivate professional attitudes and ethics, so that graduates are prepared for the complex modern work environment and for lifelong learning.

These objectives serve the department, college and university missions by insuring that all graduates of the BSEE program have received a high quality, contemporary education that prepares them for rewarding careers in electrical engineering.

For more information about the Electrical Engineering Program mission, goals and educational objectives, visit www.uaf.edu/cem/ece/about/.

Major — B.S. Degree

Concentrations: Communications, Computer Engineering, Power and Control

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X, CHEM F105X and CHEM F106X or PHYS F213X.)*
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X, PHYS F211X and PHYS F212X.)*
3. Complete the following program (major) requirements:*
   EE F102—Introduction to Electrical Engineering 3
   EE F203—Electrical Engineering Fundamentals I.....4
   EE F204—Electrical Engineering Fundamentals II.....4
   EE F303—Electrical Machinery 4
   EE F311—Applied Engineering Electromagnetics.....3
   EE F331—High Frequency Lab.....1
   EE F333W—Physical Electronics.....4
   EE F334—Electronic Circuit Design 4
   EE F343—Digital Systems Analysis and Design.....4
   EE F353—Circuit Theory.....3
   EE F354—Engineering Signal Analysis.....3
   EE F471—Fundamentals of Automatic Control 3
   ES F101—Introduction to Engineering.....3
   ES F201—Computer Techniques 3
   ES F208—Mechanics.....4
   ESM F450W—Economic Analysis and Operations.....3
   MATH F202X—Calculus.....4
   MATH F302—Differential Equations 3
   Approved EE elective.....3 – 4
   Approved EE design elective .....3 – 4
   Approved engineering science elective** 3
   Approved mathematics elective*** 3
4. Complete state of Alaska Fundamentals of Engineering examination.
5. Complete one of the following concentrations:*

Communications

a. Complete the following:
   EE F412—Electromagnetic Waves and Devices.....3
   EE F432—Electromagnetics Laboratory 1
   EE F461—Communication Systems 4
   Approved engineering science elective** 3
b. Minimum credits required.....135

Computer Engineering

a. Complete the following:
   EE F443—Computer Engineering Analysis and Design 4
   EE F451—Digital Signal Processing.....4
   EE F461—Communication Systems 4
b. Minimum credits required.....135

Power and Control

a. Complete the following:
   EE F404—Electric Power Systems 4
   EE F406—Electrical Power Engineering.....4
   Approved engineering science elective** 3
b. Minimum credits required.....135

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

** *Engineering science elective to be chosen from ES F331, ME F334, ES F341 or ES F346.*

*** *Mathematics elective to be chosen from the following advanced topics: linear algebra and matrices, probability and statistics, partial differential equations, numerical analysis, advanced calculus or complex variables.*

Note: Students must plan their elective courses in consultation with their electrical engineering faculty advisor, and all elective courses must be approved by their electrical engineering faculty advisor.

EMERGENCY MANAGEMENT

School of Management
Department of Business Administration
907-474-7461
www.uaf.edu/som/programs/bem/

B.E.M. Degree

Minimum Requirements for Degree: 129 – 131 credits

There is an ever-increasing demand for fire department and emergency services administrators educated in fire science, emergency

medical services, rescue practices, hazardous materials, terrorism threats and business management practices. The business administration department offers students the opportunity to combine technical expertise derived from the associate of applied science degree in emergency services with a curriculum in business management to become highly competitive candidates for job openings and promotion to chief officer or administrator positions within fire departments and other related fields of emergency services.

Fire chiefs and emergency services administrators of the future will need a combination of knowledge and experience covering fire science, EMS, government and politics, accounting, business practices, personnel management, employment law, organizational theory and behavior, training and management development, organizational communications, technical writing, public policy, and leadership and civic engagement offered in the emergency management degree curriculum.

Major — B.E.M. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F107X* or MATH F161X* and STAT F200X.*)
2. Complete the B.E.M. degree requirements (page 137)*.
3. Complete 33 credits of major requirements from the UAF emergency services A.A.S. degree or any regionally accredited institution fire science A.A.S. degree with a cumulative GPA of 2.25 or higher.
4. Complete the following*:
   ACCT F261—Accounting Concepts/ Uses 3
   BA F151—Introduction to Business 3
   BA F307—Personnel Management 3
   BA F317W—Employment Law 3
   BA F390—Organizational Theory and Behavior 3
   BA F452W—Internship in Emergency Management 3
   BA F457—Training and Management Development 3
   COMM F335O—Organizational Communications.....3
   ECON F200—Principles of Economics.....4
   ENGL F314 W, O/2—Technical Writing 3
   PS F101—Introduction to American Government/ Politics.....3
   PS F321—International Politics 3
   PS F403W—Public Policy 3
5. Complete 15 credits in the Leadership and Civic Engagement minor as follows:
   a. Complete the following:
      NORS F205—Leadership, Citizenship and Choice.....3
      NORS F486—Senior Seminar/ Leadership and Civic Engagement 3
   b. Complete 9 credits from the following. At least one course must be a PS elective and one course must be a HIST elective:
      PS F202—Democracy and Global Society.....3
      PS F263—Alaska Native Politics 3
      PS F301—American Presidency 3
      PS F315—American Political Thought.....3
      PS F462—Alaska Government and Politics.....3
      HIST F131—History of the U.S. 3
      HIST F132—History of the U.S. 3
      HIST F361—Early American History 3
      HIST F364—History of the U.S. 1945- Present 3
      RD F300W—Rural Development in a Global Perspective 3
      RD F325—Community Development Strategies.....3
6. Minimum credits required .....129 – 131

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

Note: Of the above, at least 39 credits must be taken in upper-division (F300-level or higher) courses.

Note: Must take two upper-division writing intensive and one upper-division oral intensive course(s).

ENGLISH

College of Liberal Arts
Department of English
907-474-7193
www.uaf.edu/english/

B.A. Degree

Minimum Requirements for Degree: 120 credits

The English department offers core courses in writing and literature, and upper-division courses in literature, linguistics, creative writing, technical writing and literary criticism. The department also offers a two-year M.A. degree in literature and a three-year M.F.A. degree in creative writing. Teaching assistantships are available for both programs. The M.A. degree offers advanced study of literature and literary theory as preparation for teaching or for entering a Ph.D. program. The M.F.A. is a terminal degree, culminating in the production of a publication-quality thesis manuscript of poetry, fiction, drama or creative non-fiction.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following:*
   a. ENGL F310—Literary Criticism 3
   b. Complete one of the following:
      ENGL F301—Continental Literature in Translation: The Ancient World.....3
      ENGL F302—Continental Literature in Translation: Medieval and Renaissance.....3
   c. Complete three of the following:
      ENGL F306—Survey of American Literature: Beginnings to the Civil War.....3
      ENGL F307—Survey of American Literature: Civil War to the Present.....3
      ENGL F308—Survey of British Literature: Beowulf to the Romantic Period.....3
      ENGL F309—Survey of British Literature: Romantic Period to the Present 3
   d. Complete one of the following:
      ENGL F422W,O/2—Shakespeare: History Plays and Tragedies 3
      ENGL F425W,O/2—Shakespeare: Comedies and Non-Dramatic Poetry.....3
   e. Complete one of the following:
      ENGL F317—Traditional English Grammar 3
      ENGL F318—Modern English Grammar.....3
      ENGL F462—Applied English Linguistics.....3
      ENGL F472—History of the English Language 3
   f. Complete 5 ENGL F300- and F400-level courses (at least 3 at the F400-level).
4. Minimum credits required 120

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

Recommended courses for students interested in creative writing:

ENGL F313W—Writing Non-Fiction Prose 3
ENGL F371W,O—Intermediate Creative Writing.....3
ENGL F471W—Undergraduate Writer's Workshop.....3

Requirements for English Teachers (Grades 7 – 12)*

1. Complete all the requirements for the English B.A. degree.
2. All prospective English teachers must complete the following:
   ENGL/FL F200X—World Literature 3
   LING F101—Nature of Language 3

ED F486O—Media Literacy 3
ENGL F317—Traditional English Grammar (3)
or ENGL F318—Modern English Grammar (3).....3
ENGL F472—History of the English Language 3
ENGL F485—Teaching Composition in the Schools 3
A writing course — see list of approved electives 3
Two multicultural literature courses, including one Alaska Native literature course, from list of approved electives 6

Note: above courses can also be used as Humanities electives for B.A. degree requirements. If ENGL/FL F200X is used to meet core requirements, it may not meet the B.A. humanities electives requirement.

* *Please ask your advisor for an advising sheet for teaching majors. We strongly recommend that prospective secondary English teachers seek advising from the UAF School of Education early in their undergraduate degree program, so that they can be appropriately advised of the State of Alaska requirements for teacher licensure. They will apply for admission to the UAF School of Education's post-baccalaureate one-year intensive teacher preparation program during their senior year. These new English degree requirements apply to all candidates who apply to the UAF School of Education for spring 2006 or later.*

Minor

1. Complete two of the following:
ENGL F301—Continental Literature in Translation: The Ancient World (3)
or ENGL F302—Continental Literature in Translation: Medieval and Renaissance (3) 3
ENGL F306—Survey of American Literature: Beginnings to the Civil War.....3
ENGL F307—Survey of American Literature: Civil War to the Present.....3
ENGL F308—Survey of British Literature: Beowulf to the Romantic Period.....3
ENGL F309—Survey of British Literature: Romantic Period to the Present 3
2. Complete the following:
ENGL F422W,O/2—Shakespeare: History Plays and Tragedies (3)
or ENGL F425W,O/2—Shakespeare: Comedies and Non-Dramatic Poetry (3).....3
ENGL electives at the F300- or F400-level.....9
3. Minimum credits required 18

ENVIRONMENTAL POLITICS

College of Liberal Arts
Department of Political Science
907-474-7609
www.uaf.edu/polisci/

Minor only

Students in the minor program in environmental politics explore the local, national and international contexts within which key decisions about the environment are made. Courses examine philosophical and theoretical perspectives on the environment; ways in which different countries address issues of resource development and environmental regulations; international environmental laws, treaties, and institutions; relationships between environmental protection and national security; relationships between politics and environmental science; and the effects of environmental concerns on the international political economy.

The minor may be used in conjunction with any B.A. degree program, including political science, or as an optional addition to any B.S. degree program. For further information, contact the Department of Political Science.

Minor

1. Complete the following*:
PS F101—Introduction to American Government and Politics 3
2. Complete 12 elective political science credits from the following:
PS F447—U.S. Environmental Politics.....3
PS F454—International Law and the Environment 3
PS F455O—Political Economy of the Global Environment.....3
PS F456O—Science, Technology and Politics 3
PS F458—Comparative Environmental Politics.....3
3. Minimum credits required 15

* *PS F100X is recommended to fulfill the political economy requirement of the core curriculum.*

ESKIMO

College of Liberal Arts
Department of Alaska Native Languages
907-474-7874
www.uaf.edu/anlc/classes.html

B.A. Degree

Minimum Requirements for Degree: 120 credits

Eskimo languages are spoken by far northern people from the northeastern tip of Siberia, across Alaska and Canada, to East Greenland. The Eskimo languages include the four Yupik languages of Alaska and Siberia as well as Inuit, the Alaska sector of which is called Inupiaq. In terms of population and numbers of speakers, Central Alaskan Yup'ik is by far the largest Alaska Native language; Inupiaq is the second largest. Eskimo languages are the linguistic heritage of more than half of Alaska's Native population.

Students who obtain a B.A. in Central Yup'ik or Inupiaq Eskimo may be employed as Native language instructors or language specialists for school districts or Native organizations. No other university in the United States offers a B.A. in Eskimo.

Students in linguistics or anthropology may want to complete a minor in Eskimo to add a distinctly Alaska emphasis to their education.

Inupiaq Eskimo — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
ANL F315—Alaska Native Languages: Eskimo-Aleut.....3
ESK F111—Elementary Inupiaq Eskimo 5
ESK F112—Elementary Inupiaq Eskimo 5
ESK F211—Intermediate Inupiaq Eskimo 3
ESK F212—Intermediate Inupiaq Eskimo 3
ESK F417—Advanced Inupiaq Eskimo.....3
LING F101—Nature of Language (3)
or ANS F320W—Language and Culture: Applications to Alaska (3) 3
4. Complete three of the following:*
ANL F287—Teaching Methods for Alaska Native Languages...3
ANL F316—Alaska Native Languages: Indian Languages 3
ANS/ENGL F349—Narrative Art of Alaska Native Peoples (in English Translation).....3
ANTH F242—Native Cultures of Alaska.....3
ESK F417—Advanced Inupiaq Eskimo.....3
HIST F110—History of Alaska Natives 3
LING/ED F303W,O—Language Acquisition 3
LING F318—Introduction to Phonetics and Phonology 3
LING F320—Introduction to Morphology.....3

LING F410O—Theory and Methods of Second Language Teaching....3
LING F430—Historical Linguistics....3
LING F450O—Language, Policy and Planning....3
MUS F223—Alaska Native Music....3
PS F263—Alaska Native Politics....3
Yup'ik Eskimo course or approved course....3

5. Minimum credits required....120

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

Yup'ik Eskimo — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
ANL F315—Alaska Native Languages: Eskimo-Aleut....3
ESK F101—Elementary Central Yup'ik Eskimo....5
ESK F102—Elementary Central Yup'ik Eskimo....5
ESK F201—Intermediate Central Yup'ik....3
ESK F202—Intermediate Central Yup'ik....3
ESK F301—Advanced Central Yup'ik Eskimo....3
ESK F415—Additional Topics in Advanced Yup'ik Eskimo....3
LING F101—Nature of Language (3)
or ANS F320W—Language and Culture: Applications to Alaska (3)....3
4. Complete two of the following:*
ANL F287—Teaching Methods for Alaska Native Languages...3
ANL F316—Alaska Native Languages: Indian Languages....3
ANS/ENGL F349—Narrative Art of Alaska Native Peoples (in English Translation)....3
ANTH F242—Native Cultures of Alaska....3
HIST F110—History of Alaska Natives....3
LING/ED F303W,O—Language Acquisition....3
LING F318—Introduction to Phonetics and Phonology....3
LING F320—Introduction to Morphology....3
LING F430—Historical Linguistics....3
LING F450O—Language, Policy and Planning....3
MUS F223—Alaska Native Music....3
PS F263—Alaska Native Politics....3
Inupiaq Eskimo course or approved course....3
5. Minimum credits required....120

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

Minor

1. Complete Eskimo electives....15
2. Minimum credits required....15

FILM STUDIES

College of Liberal Arts
Department of Theatre
907-474-6590
www.uaf.edu/theatre/

Minor only

The interdisciplinary film studies program combines courses in theatre, English and journalism to give students a broad understanding of the role of film and video in modern society. Independent study courses are available, and students can tailor their program to meet particular needs and career objectives.

Minor

1. Complete the following:
THR/FLM F271—Let's Make a Movie....2
THR/FLM F331—Directing Film/Video....3
THR/FLM F334W—Movies and Films....3
2. Complete a minimum of 9 credits from:
ENGL/FLM F217—Introduction to the Study of Film....3
JRN/FLM F105—History of the Cinema....3
THR F121—Fundamentals of Acting....3
THR/FLM F215—Dramatic Literature....3
THR/FLM F310—Acting for the Camera....3
THR/FLM F347O—Lighting Design....3
THR F348—Sound Design in the Entertainment Industry....3
THR/FLM F470—Advanced Film and Video Directing....3
3. Minimum credits required....17

FISHERIES

School of Fisheries and Ocean Sciences
Fisheries Program
907-474-7289
www.sfos.uaf.edu/academics/

B.A., B.S. Degree

Minimum Requirements for Degrees: B.A.: 126 credits; B.S.: 126 credits

The undergraduate programs in fisheries offer students broad education and training, preparing graduates to work as professionals in fisheries management, research, conservation, education, policy, harvest and marketing organizations. The programs also provide a solid foundation for graduate study for students contemplating careers in advanced research and management, administration or teaching.

The B.S. degree in fisheries provides students with the knowledge base, skill sets and hands-on experience to obtain positions within state, federal and non-governmental fisheries and natural resources conservation and management agencies in Alaska and throughout North America. Graduates with this degree will be particularly qualified to work for traditional state, provincial, federal, Alaska Native, and Native American agencies in the areas of marine and freshwater fisheries biology and management and fisheries social science.

The B.A. degree in fisheries provides students with the knowledge base, skill sets, and hands-on experience to obtain positions within the fishing and seafood processing industries in Alaska and throughout North America. Graduates with this degree will be qualified to work for traditional fisheries governmental agencies in the areas of business administration, policy development, fisheries education and outreach, or as social scientists.

The minor gives students who are majoring in other areas (i.e. wildlife biology, natural resources management, business, rural and community development, journalism, etc.) a solid introductory background in fisheries.

Fisheries students have opportunities to work with professionals from federal, state, local, tribal and private groups during their required internship or research project. These organizations often hire fisheries students for summer internships, which can turn into full-time jobs after graduation.

The undergraduate fisheries program is administered through the UAF Fairbanks campus. Students have the option of completing their program in Fairbanks or Juneau, with many fisheries courses offered via distance education for students in other outlying areas. The undergraduate fisheries program is designed as a 2+2 program in which students may complete their first two years at UAF, UAS or UAA (or other local UA campus) and their last two years in either Fairbanks or Juneau as a UAF student. Students who are interested in the 2+2 option must contact the UAF fisheries program.

Fairbanks offers an excellent location for the study of Interior Alaska aquatic habitats with a number of subarctic streams and lakes

within easy reach. The Juneau Center has ready access to both marine and freshwater habitats and freshwater and seawater wet labs. The Fishery Industrial Technology Center, located in Kodiak, has facilities for work in harvest technology, seafood technology, seafood biochemistry and microbiology.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following:*
   - ACCT F261—Accounting Concepts and Uses I....3
   - ACCT F262—Accounting Concepts and Uses II....3
   - AIS F101—Effective Personal Computer Use....3
   - ANTH F403W/O—Political Anthropology (3)
     or ANTH F428—Ecological Anthropology and Regional Sustainability....3
   - BA F307—Introductory Human Resources Management....3
   - BA F343—Principles of Marketing....3
   - BA F390—Organizational Theory and Behavior (3)
     or BA F330—The Legal Environment of Business (4)....3-4
   - ECON F200—Principles of Economics (4)
     or ECON F235—Introduction to Natural Resources (3)....3-4
   - ENGL F314 W,O—Technical Writing....3
   - FISH F101—Introduction to Fisheries....3
   - FISH F261—Introduction to Fisheries Utilization....3
   - FISH F288—Marine and Freshwater Fishes of Alaska....3
   - FISH F490—Experiential Learning Internship....1
   - MSL F111X—The Oceans....4
   - NRM F407—Environmental Law (3)
     or PS F447—U.S. Environmental Politics (3)
     or HIST F411—Environmental History (3)....3
   - RD F300W—Rural Development in a Global Perspective (3)
     or RD F350O—Indigenous Knowledge and Community Research (3)
     or RD F430—Indigenous Economic Development and Entrepreneurship (3)....3
   - Upper division fisheries elective....3
4. Minimum credits required....126

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

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X or F272X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete STAT F401 or STAT F402.)
3. Complete the following fisheries core requirements:*
   - BIOL F115X—Fundamentals of Biology I**....4
   - BIOL F116X—Fundamentals of Biology II**....4
   - BIOL F271—Principles of Ecology....4
   - BIOL F310—Animal Physiology....4
   - BIOL F362—Principles of Genetics....4
   - BIOL F473W—Limnology (4)
     or MSL F411—Current Topics in Oceanographic Research (3)
     or BIOL F476—Ecosystem Ecology (3)
     or BIOL F483—Stream Ecology (3)....3 – 4
   - CHEM F105X—General Chemistry**....4
   - CHEM F106X—General Chemistry**....4
   - ECON F200—Principles of Economics (4)
     or ECON F235—Introduction to Natural Resource Economics (3)
     or ECON F201—Principles of Economics I: Microeconomics (3)
     and ECON F202—Principles of Economics II: Macroeconomics (3)
   - ENGL F414W—Research Writing (3)....3 – 4
   - FISH F101—Introduction to Fisheries....3
   - FISH F288—Marine and Freshwater Fishes of Alaska....3
   - FISH F315—Freshwater Fisheries Techniques....3
   - FISH F425—Fish Ecology....3
   - FISH F427—Ichthyology....4
   - FISH F490—Experiential Learning Internship....1
   - FISH F487W,O—Fisheries Management....3
   - MSL F111X—The Oceans**....4
   - PHYS F103X—College Physics**....4
   - STAT F200X—Elementary Probability and Statistics....3
   - STAT F401—Regression and Analysis of Variance....4
     or STAT F402—Scientific Sampling....3
4. Complete 12 credits of electives* from Fisheries, Biology or Natural Resource Management (of which 7 credits must be upper division).
5. Complete 4 credits of electives* from Chemistry, Geology or Physics.
6. Complete 5 upper-division credits of other electives*.
7. Minimum credits required....126

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

** *Courses completed in the fisheries core may be used to meet the core natural sciences or B.S. degree natural science requirements but not both.*

Note: Fisheries majors are encouraged to reinforce their fisheries qualifications by earning a minor in a program related to fisheries. Some examples are biology, business management, chemistry, economics, mathematics, natural resources management (animal science), northern studies, statistics or wildlife.

Minor

1. Complete the following:
   - FISH F101—Introduction to Fisheries (3)
     or NRM F101—Natural Resources Conservation and Policy (3)....3
   - FISH F288—Marine and Freshwater Fishes of Alaska....3
2. Complete at least 6 credits from the following:
   - FISH F261—Introduction to Fisheries Utilization....3
   - FISH F336—Introduction to Aquaculture....3
   - FISH F421—Fish Population Dynamics....4
   - FISH F425—Fish Ecology....3
   - FISH F436—Salmon Culture....3
   - FISH F487—Fisheries Management....3
3. Complete at least 3 credits from one of the following concentrations:

Fisheries Science

- BIOL F305—Invertebrate Zoology....5
- BIOL F310—Animal Physiology....3
- BIOL F328—Biology of Marine Organisms....3
- BIOL F441—Animal Behavior....3
- BIOL F471—Population Ecology....3
- BIOL F472W—Community Ecology....3
- BIOL F473W—Limnology....4
- BIOL F476—Ecosystem Ecology....3
- BIOL F483—Stream Ecology....3
- NRM F370—Introduction to Watershed Management....3

Fisheries Business Administration and Economics

ACCT F261—Accounting Concepts and Uses I.....3
ACCT F262—Accounting Concepts and Uses II 3
BA F151—Introduction to Business 4
BA F307—Introductory Human Resources Management 3
BA F325—Financial Management.....3
BA F343—Principles of Marketing.....3
BA F390—Organizational Theory and Management.....3
ECON F200—Principles of Economics.....3
ECON F235—Introduction to Natural Resources Economics..3
ECON F335—Intermediate Natural Resource Economics.....3
ECON F434—Environmental Economics.....3

Fisheries Policy and Rural Development

ANTH F242—Native Cultures of Alaska.....3
ANTH F403W/O—Political Anthropology.....3
ANTH F428—Ecological Anthropology and Regional Sustainability 3
HIST F411—Environmental History.....3
NRM F407—Environmental Law.....3
NRM F430—Resource Management Planning.....3
PS F101—Introduction to American Government and Politics 3
PS F447—U.S. Environmental Politics.....3
RD F200—Community Development in the North 3
RD F245—Fisheries Development in Rural Alaska.....3
RD F265—Perspectives on Subsistence in Alaska.....3
RD F350O—Indigenous Knowledge and Community Research.....3

4. Minimum credits required.....15

FOOD SCIENCE AND NUTRITION

School of Fisheries and Ocean Sciences
School of Natural Resources and Agricultural Sciences
907-474-7824
907-474-7083
www.sfos.uaf.edu
www.uaf.edu/snras/

Food science is the study of the chemical, biological and engineering aspects of food and its components. Knowledge from diverse scientific disciplines is integrated to develop new methods for processing and fabricating foods while assuring safe, nutritious and acceptable products.

From a chemical, microbiological and physical standpoint, food is the most complex of all natural products. Food science is a high-technology field; the results of research and development reach people and animals daily as safe, nutritious and acceptable foods.

This program emphasizes the food uses of fish, game and other traditional foods. It provides students majoring in a natural science, engineering, northern agriculture or management with a strong emphasis area in food science and nutrition. The food industry is the largest employer in the United States, and job openings are available for people trained as food technologists.

The following courses are part of the food science and nutrition program:

FISH F261—Introduction to Seafood Science and Nutrition.....3
FISH/FSN F460—Food Science and Technology Internship.....3 – 6

FOREIGN LANGUAGES

College of Liberal Arts
Department of Foreign Languages and Literatures
907-474-7396
faforei@uaf.edu
www.uaf.edu/language/

B.A. Degree

Minimum Requirements for Degree: 120 credits

Language is the embodiment of culture and an expression of a people's way of thinking, feeling and viewing the world. We have an increasing need to communicate directly with other peoples to achieve mutual understanding. To learn a new language opens new avenues of thought, new modes of expression and new models of understanding. The study of foreign languages and literatures liberates the student from the confines of one culture.

Foreign language majors are encouraged to spend one or both semesters of their junior year in an exchange program appropriate to their language focus.

Major — B.A. Degree

Concentrations: Two Languages, Single Language (French, German, Spanish)

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete one of the two following concentrations:*

Two Languages Concentration

a. Complete a minimum of 18 credits at the F200-level or above in the first language: French, German, Japanese, Russian or Spanish. These must include two F400-level courses in the target language taken in residence at UAF.
b. Complete a minimum of 15 credits at the F200-level or above in the second language: French, German, Japanese, Russian or Spanish.

French, German or Spanish Concentration

a. Complete a minimum of 30 credits in the target language at the F200-level or above. These may include target language courses and/or courses taken in the target language on an approved study abroad program and up to 6 credits of advisor-approved electives from Education or Linguistics, but must include two F400-level courses in the target language taken in residence at UAF.

Japanese: see requirements under Japanese Studies major
Russian: see requirements under Russian Studies major

4. Minimum credits required.....120

* *Student must earn a C grade or better in each course.*
** *Students may repeat any F400-level language course for credit if the topics vary.*
*** *F400-level course from another discipline appropriate to the major language may be accepted if approved by your foreign language advisor.*
**** *The second language does not satisfy the minor requirements.*
Note: In addition to a first and second language, students should complete a well-defined minor related to their career goals. When choosing a minor it is highly recommended that students see an advisor as early as possible.
Note: Recommended background courses: LING F101 and LING F216.
Note: F100-level language courses (which are preparatory to, but not part of the foreign language degree) may be counted toward fulfillment of requirements specified under Perspectives on the Human Condition and/or Humanities. Each language counts as a separate discipline.

Minor

1. Complete the following:
   Foreign language credits at the F100-level or above 3
   Foreign language credits at the F200-level or above 12
2. Minimum credits required 15

GENERAL SCIENCE

College of Natural Science and Mathematics
Department of Physics
907-474-6108
www.uaf.edu/physics/

B.S. Degree

Minimum Requirements for Degree: 130 credits

The B.S. degree program in general science provides a broad background in the natural sciences. The program allows specialization in at least two disciplines within the natural sciences as well as an additional area of associated interest. This degree offers more breadth in the natural sciences than other degree programs and may be classified as an interdisciplinary degree.

Major — B.S. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.S. degree requirements (page 136).
3. Complete the following program (major) requirements:*
   BIOL F115X—Fundamentals of Biology I.....4
   BIOL F116X—Fundamentals of Biology II.....4
   CHEM F105X—General Chemistry*** 4
   CHEM F106X—General Chemistry*** 4
   GEOS F101X—The Dynamic Earth 4
   GEOS F112X—The History of Earth and Life.....4
   MATH F107X—Functions for Calculus 4
   MATH F108—Trigonometry.....3
   MATH F200X—Calculus** 4
   PHYS F103X—College Physics***.....4
   PHYS F104X—College Physics***.....4
4. Select one of the following by the start of the junior year:****
   a. Two majors.
   b. One major and two minors.
5. Complete one major from the following: biological sciences, chemistry, geosciences or physics. The major requires the completion of at least 20 credits in addition to the foundation courses in the discipline.* 20
6. Complete one of the following*:
   a. Complete a second major from the following: biological sciences, chemistry, geosciences, physics or mathematics. The major requires the completion of at least 20 credits in addition to the foundation courses in the discipline. 20
   b. Complete two minors, one of which must be in the natural sciences or mathematics, while the other may be selected from the following disciplines: anthropology, English, French, German, Spanish, Russian, history, political science or economics. The minor must include 12 or more credits in addition to the foundation courses in that discipline.....24
7. Minimum credits required 130

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

** *A student does not need to take MATH F107X and MATH F108 if the student completes MATH F200X with a C or better. Complete a B.S. degree mathematics elective for 3 credits if MATH F107X and MATH F108 are not taken.*

*** *PHYS F211X, F212X and F213X may substitute for PHYS F103X and F104X. CHEM F212 may substitute for CHEM F105X and F106X.*

**** *A general science student, after meeting with his/her general science advisor, should contact the head of the major/minor department as early as possible to determine course requirements in that discipline. These courses will be determined by the department head of the discipline and will reflect the student's needs as well as the intent of the general science program.*

Requirements for General Science Teachers (grades 7 – 12)

1. Complete all the requirements of the general science B.S.
2. If the student opts for one major and two minors, all must represent science or mathematics disciplines:
3. All prospective science teachers must complete the following:
   PHIL F481—Philosophy of Science (3).....3

Note: 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. Above requirements apply to all candidates who apply to the UAF School of Education Spring 2006 or later for licensure in General Science.

GEOGRAPHY

School of Natural Resources and Agricultural Sciences
UA Geography Program
907-474-7494
www.uaf.edu/snras/geography/

B.A., B.S. Degrees

Minimum Requirements for Degrees: 120 credits

Geography provides a holistic view of the earth as a whole, its distinct and varied regions, as well as the types of and interaction between human activities and the physical world. Geography is the two-way bridge between the physical and social sciences as it explores the interrelationships between the earth's physical and biological systems and how these environmental systems provide a natural resource base for human societies. Geography also provides the framework for the integration of new and emerging technologies such as GIS and remote sensing with studies in a broad range of academic disciplines.

Geographers are interested in patterns and processes of physical and social change, including climate change, geographic information science and technologies, human settlement patterns, natural resources distribution and management, environmental studies, and in the inherent "sense of place" among peoples throughout the world. Geographic methodologies include observation, measurement, description and analysis of places including likenesses, differences, interdependence and importance.

The geography B.A. degree provides broad cultural training and background in the liberal arts with an emphasis on the circumpolar North and Pacific Rim. The B.A. also provides a geographic perspective based on these regions and prepares students for careers in management, policy, teaching, field-based research, regional planning and private sector careers. The B.A. also provides an excellent foundation for advanced studies in a wide range of academic disciplines.

Three emphasis options are available to students pursuing the B.S. degree: environmental studies, landscape analysis and climate change studies, and geographic information science and technology.

Environmental studies provides the foundation necessary for understanding the natural and social environment, analysis of environmental issues from an interdisciplinary geographic perspective, a diverse technical and scientific approach to environmental issues, and the ability to find balanced solutions to environmental problems.

Landscape analysis and climate change studies integrate and synthesize courses in geography, climate change, physical and biological sciences, and geographic information sciences and technology.

Students will gain a sound and interdisciplinary understanding of how environmental change influences landscape patterns and humans on both spatial (e.g. latitude, altitude) and temporal (e.g. past, future) scales. Senior practicum courses serve as integrating "capstone experiences" enabling students to apply what they have learned in real-world settings.

Geographic information science and technology emphasizes skills and practices in geographic information science, systems, technology and analytical aspects of geography. Courses in statistics, computer programming, GIS, GPS and remote sensing are integrated with the geography core curriculum and courses in natural sciences.

A minor in geography is also available.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following required foundation courses:*
   GEOG F101—Expedition Earth: Introduction to Geography...3
   GEOG F111X—Earth and Environment: Elements of Physical Geography....4
   GEOG F312—People, Places, and Environment: Principles of Human Geography 3
   GEOG F338—An Introduction to GIS 3
   GEOG F490W,O—Geography Seminar....3
4. Complete the following program (major) requirements. Students will tailor their program through course selection from the categories below in consultation with their advisor to focus on a subspecialty in the Circumpolar North and/or the Pacific Rim.
   a. Regional Geography: Complete two of the following:
      GEOG F302—Geography of Alaska....3
      GEOG F303—Geography of United States and Canada 3
      GEOG F305W—Geography of Europe 3
      GEOG F306—Geography of Russia 3
      GEOG F311W—Geography of Asia....3
      GEOG F410—Geography of the Pacific Rim 3
      GEOG F427—Polar Geography 3
   b. Physical Geography: Complete one of the following:
      GEOG F339—Maps and Landscape Analysis....3
      GEOG F307—Weather and Climate 3
      GEOG F412—Geography of Climate Change....3
      GEOG F418—Biogeography 3
   c. Human Geography: Complete one of the following:
      GEOG F203—World Economic Geography....3
      GEOG F402—Resources and Environment 3
      GEOG F404—Urban Geography....3
      GEOG F405—Political Geography....3
   d. Technique: Complete one of the following:
      GEOG F301—Geographic Field Studies....3
      GEOG F309—Cartography 4
      GEOG F458—Geoscience Applications of GPS and GIS 3
   e. Electives: Complete two courses (six credits) from any of the above categories, or other courses appropriate to the student's chosen program of study. Both courses must be at F300-level or higher and approved by the student's advisor.
5. Complete approved electives....open
6. Minimum credits required....120

Note A: Geography majors are encouraged to reinforce their program focus with a minor in one of the following areas:
Alaska Native Studies, Anthropology, Asian Studies, Economics, Environmental Politics, Foreign Languages, Geology, Geophysics, Global Studies, History, Journalism, Natural Resource Management, Northern Studies, Political Science, Rural Development, Russian Studies

Note B: Students and faculty advisors should review carefully, prerequisites for courses outlined in each required and/or optional area. In some instances, courses, either in geography or other fields require successful completion of anywhere from 1 – 3 prerequisite courses. Therefore, students and faculty should note minimum degree credit hours are 120, but the actual number of required course credits may exceed that number.

Major — B.S. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.S. degree requirements (page 136).
3. Complete the following required foundation courses:*
   GEOG F101—Expedition Earth: Introduction to Geography...3
   GEOG F111X—Earth and Environment: Elements of Physical Geography....4
   GEOG F312—People, Places, and Environment: Principles of Human Geography 3
   GEOG F338—An Introduction to GIS 3
   GEOG F490W,O—Geography Seminar....3
4. Complete one of the following options:*

Geography Option I — Environmental Studies

   a. Complete the following:
      GEOG F207—Research Methods and Statistics in Geography .3
      GEOG F307—Weather and Climate 3
      GEOG F339—Maps and Landscape Analysis....3
      GEOG F402—Resources and Environment 3
   b. Complete 6 credits from the following environmental studies electives:
      GEOG/NRM F463—Wilderness Concepts....3
      NRM F303X—Environmental Ethics and Actions** 3
      NRM F407—Environmental Law....3
   c. Complete 9 credits from the following environmental system electives:
      ANTH F428—Ecological Anthropology and Regional Sustainability***....3
      BIOL F271—Principles of Ecology***....4
      BIOL/NRM F277—Introduction to Conservation Biology*** 3
      GEOS F304—Geomorphology 3
      NRM F375—Forest Ecology***....3
      NRM F380W—Soils and the Environment*** 3
   d. Complete 3 credits from the following environmental management electives:
      FISH F487W,O—Fisheries Management*** 3
      NRM F365—Principles of Outdoor Recreation Management ...3
      NRM F430—Resource Management Planning....3
      NRM/WLF F431—Wildlife Law and Policy*** 3
      NRM F450—Forest Management*** 3
      NRM F480—Soil Management for Quality and Conservation***....3
   e. Complete one of the following techniques courses:
      GEOG F301—Geographic Field Studies....3
      GEOG F309—Cartography 4
      GEOG F435—GIS Analysis....4
      GEOS F458—Geoscience Applications of GPS and GIS*** 3

Geography Option II — Landscape Analysis and Climate Change Studies:

   a. Complete B.S. degree options, STAT F200X or 300, and prerequisite courses BIOL F115X, BIOL F116X, and CHEM F105X.
   b. Complete the following Processes requirements (geomorphology, climate, ecology, systems):
      GEOG F307—Weather and Climate 3
      GEOG F412—Geography of Climate and Environmental Change....3
      GEOG F418—Biogeography 3
      BIOL F271—Principles of Ecology***....4
      GEOS F304—Geomorphology*** 3

c. Complete one of the following Processes electives:
BIOL F467—Ecosystems of Alaska*** 3
or BIOL F469 O—Landscape Ecology and Wildlife Habitat (3)***
or NRM F370—Watershed Management (3)***
or NRM F380 W—Soils and the Environment(3)***
or a processes-oriented content course approved by Geography faculty advisor.

d. Complete the following Patterns requirements (Field Methods, GIS/Remote Sensing Tools):
GEOG F309—Cartography 4
GEOG F339—Maps and Landscape Analysis.....3
GEOG F435—GIS Analysis 4
GEOS F458—Geoscience Applications*** 3

e. Complete at least one of the following Patterns electives:
GE F471—Remote Sensing for Engineering*** 3
or GEOS F422—Geoscience Applications of Remote Sensing*** 3
or GEOS F434—Remote Sensing of the Cryosphere*** 3
or NRM F641—Remote Sensing Applications in Natural Resources***.....4

f. Complete the following Senior Practicum requirements (program synthesis):
GEOG F488—Geographic Assessment and Prediction of Natural Hazards 3
GEOG F489W—Senior Practicum: Field Studies in Landscape Analysis and Climate Change 4

Geography Option III — Geographic Information Science and Technology (GIS&T)

a. Complete B.S. degree options, including prerequisite course, PHYS F103X.

b. Complete the following GIS&T breadth:
CS F103—Introduction to Computer Programming*** 3
STAT F200X—Elementary Probability and Statistics***.....3
GEOG F339—Maps and Landscape Analysis.....3
GEOG F341—GIS Analysis 3
NRM/GEOG F300—Internship in Natural Resources Management and Geography 3

c. Complete at least two courses of remote sensing electives:
GE F471—Remote Sensing for Engineering***.....3
GEOS F422—Geoscience Applications of Remote Sensing***.....3
GEOS F434—Remote Sensing of Cryosphere*** 3
NRM F641—Remote Sensing Applications in Natural Resources 4

d. Complete at least two courses of GIS electives:
GE F376—GIS in Geological and Environmental Engineering***.....3
GEOG F309—Cartography 4
GEOS F458—Geoscience Applications of GPS and GIS*** 3
NRM F638—GIS Programming◊.....3

e. Complete at least two courses in Landscape electives:
BIOL F469O—Landscape Ecology and Wildlife Habitat***.....3
GEOS F304—Geomorphology*** 3
GEOS F408—Photogeology***.....3
GEOS F430—Statistics and Data Analysis in Geology*** 3

5. Minimum credits required.....120

* *Student must earn a C grade or better in each course.*
** *If used to fulfill core requirements, NRM F303X may not also count towards geography major.*
*** *Prerequisites required.*
◊ *Graduate level credit used to complete this undergraduate degree program may NOT be applied towards future graduate degree programs.*

Note: Students and faculty advisors should review carefully, prerequisites for courses outlined in each required and/or optional area. In some instances, courses, either in geography or other fields require successful completion of anywhere from 1 – 3 prerequisite courses. Therefore, students and faculty should note minimum degree credit hours are 120, but the actual number of required course credits may exceed that number.

Minor

1. Complete the following:
GEOG F101—Expedition Earth: Introduction to Geography (3)
or GEOG F203—World Economic Geography (3) 3
GEOG F111X—Earth and Environment: Elements of Physical Geography 4
GEOG electives.....8 – 9

2. Minimum credits required.....15

GEOLOGICAL ENGINEERING

College of Engineering and Mines
Department of Mining and Geological Engineering
907-474-7388
www.uaf.edu/cem/ge/

B.S. Degree

Minimum Requirements for Degree: 134 credits

The mission of the geological engineering program is to advance and disseminate knowledge related to mineral and energy exploration, evaluation, development and production; engineering site selection, construction and construction material production; and groundwater and geo-environmental engineering including geologic hazards assessment, through creative teaching, research and public service with an emphasis on Alaska, the North and its diverse peoples.

Geological engineering deals with the application of geology. Geological engineers work with the environment in the true sense of the word. Properties of earth materials exploration activities, geophysical and geochemical prospecting, site investigations and engineering geology are all phases of geological engineering.

The program prepares students for employment with industry, consulting companies and government agencies.

The educational objectives of the geological engineering program are:

1. To prepare graduates for employment in one of the following professional areas: mineral and energy exploration and development; geotechnical engineering; groundwater engineering; or geo-environmental engineering.
2. To prepare graduates to meet the unique challenges of geological engineering problems germane to cold regions, especially Alaska.
3. To prepare graduates for graduate studies and the pursuit of lifelong learning.

For more information about the Geological Engineering Program mission, goals and educational objectives, visit www.uaf.edu/cem/ge/about/.

Major — B.S. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.S. degree requirements (page 136).
3. Complete the following program (major) requirements:*
CHEM F105X—General Chemistry** 4
CHEM F106X—General Chemistry** 4
ES F201—Computer Techniques 3
ES F208—Mechanics.....4
ES F331—Mechanics of Materials.....3
ES F341—Fluid Mechanics 4

GE F101—Introduction to Geological Engineering.....1
GE F261—General Geology for Engineers.....3
GE F365—Geological Materials Engineering.....3
GE F375—Principles of Engineering Geology and Terrain Analysis 3
GE F381W—Field Methods and Applied Design I 2
GE F382W—Field Methods and Applied Design II.....4
GE F405—Exploration Geophysics.....3
GE F420—Subsurface Hydrology.....3
GE F471—Remote Sensing for Engineering 3
GE F480W—Senior Design 3
GEOS F213—Mineralogy 4
GEOS F214—Petrology and Petrography.....4
GEOS F322—Stratigraphy and Sedimentation.....4
GEOS F332—Ore Deposits and Structure.....3
MATH F200X—Calculus I**.....4
MATH F201X—Calculus II**.....4
MATH F202X—Calculus III** 4
MATH F302—Differential Equations 3
MIN F202—Mine Surveying 3
MIN F370—Rock Mechanics 3
MIN F408O—Mineral Valuation and Economics.....3
PHYS F211X—General Physics** 4
PHYS F212X—General Physics** 4
STAT F200X—Elementary Probability and Statistics 3
Technical electives***.....6

4. Minimum credits required.....134

* *Student must earn a C grade or better in each ES, GE, GEOS, MIN and technical elective courses.*

** *Satisfies core or B.S. degree requirements but not both.*

*** *Technical elective credits must contain engineering design and be selected by the student from a list of approved technical electives from the geological engineering program in conference with his or her advisor and approved by the department.*

Note: Candidates for the B.S. degree in geological engineering are required to take the state of Alaska Fundamentals of Engineering examination, which is a first step toward registration as professional engineers.

Note: Students may initiate their geological engineering program in Anchorage and transfer to Fairbanks upon completion of the freshman and sophomore years. Students intending to transfer to UAF should communicate with a faculty member of the UAF mining and geological engineering department.

GEOLOGY

College of Natural Science and Mathematics
Department of Geology and Geophysics
907-474-7565
www.uaf.edu/geology/

B.S. Degree

Minimum Requirements for Degree: 130 credits

Graduates in geology have broad backgrounds in the earth sciences and firm foundations in mathematics, physics and chemistry. There are many concentrations available in the geological sciences, and the suggested curricula are intended to be flexible enough to allow students to pursue their own emphasis in the junior and senior years. The bachelor's degree prepares students for positions with industry or government or for graduate studies.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X, CHEM F105X and F106X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree, complete: STAT F200X or F300; PHYS F103X and F104X, or PHYS F211X and F212X.)
3. Complete the following program (major) requirements:*
   GEOS F101X—The Dynamic Earth 4
   GEOS F112X—The History of Earth and Life.....4
   GEOS F213—Mineralogy 4
   GEOS F214—Petrology and Petrography.....4
   GEOS F225—Field and Computer Methods in Geology 2
   GEOS F304—Geomorphology 3
   GEOS F314—Structural Geology 4
   GEOS F315W—Paleobiology and Paleontology 4
   GEOS F322—Stratigraphy and Sedimentation.....4
   GEOS F351W—Field Geology** 8
   GEOS F430—Statistics and Data Analysis in Geology 3
   MATH F201X—Calculus II 4
   Electives.....open
4. Complete 15 credits of upper-division GEOS courses or upper-division courses as approved by the undergraduate advisor.*
5. Minimum credits required.....130

* *Student must earn a C grade or better in each GEOS course and in all courses that fulfill requirement 4.*

** *GEOS F351 is offered at UAF when there is sufficient demand. In years when GEOS F351 is not offered (decision made early in fall semester), students are required to take a 6-credit field geology class at another institution. The geology and geophysics undergraduate advisor will assist students in placement in a field geology class.*

Studies in geophysics: Students interested in pursuing a program in geophysics are encouraged to pursue a major in geology which includes GEOS F418 and F416 with a minor in physics. Students should consult with the geology department regarding constructing a plan of study.

Minor

1. Complete the following:
   GEOS F101X—The Dynamic Earth 4
   Approved GEOS electives 12
2. Minimum credits required.....16

GLOBAL STUDIES

College of Liberal Arts
907-474-7231
www.uaf.edu/cla/

Minor Only

The minor in global studies is an interdisciplinary program whose purpose is to enhance students' understanding of issues resulting from an increasingly interdependent world. The global studies program provides students pursuing a bachelor's degree an opportunity to broaden their intellectual horizon beyond their chosen major and achieve a more integrated vision of contemporary global problems, alternative conceptions of global society and relevant strategies for moving toward a more just and humane world order.

Minor

1. Complete one entry level course from among the following:
   ANTH F245—Culture and Global Studies.....3
   GEOG F203—World Economic Geography.....3
   ENGL F280—Colonial and Post-Colonial Literature.....3
   PS F202—Democracy and Global Society 3
2. Complete four different courses (12 credits) from one of the following concentrations:
   Global Economic and Political Dynamics
   ANTH F446—Economic Anthropology 3
   PS F201—Comparative Politics.....3
   PS F323—International Political Economy 3
   RD F300W—Rural Development in a Global Perspective 3
   SOC F460—Global Issues in Sociological Perspective.....3

Culture and Global Society

ANTH/RD F315—Tribal People and Development 3
ANTH/WMS F445—Gender in Cross-Cultural Perspective.....3
COMM F330—Intercultural Communication.....3
ENGL F218—Themes in Literature: Colonial and Post-Colonial Literature 3
ENGL F360—Multi-Ethnic Literatures of the United States.....3
LING F216—Languages of the World.....3
PHIL F482—Comparative Philosophy and Religions 3

Science Policy and the Environment

ANTH F428—Ecological Anthropology and Regional Sustainability 3
BIOL F476—Ecosystem Ecology.....3
GEOG/NRM F338—Introduction to Geographic Information Systems.....3
HIST F411—Environmental History.....3
NRM/NORS F432—Literature and the Environment.....3
PS F454—International Law and the Environment 3
PS F455O—Political Economy of the Global Environment.....3
PS F456O—Science, Technology and Politics.....3

Peace, Human Rights and Global Society

ENGL F280—Introduction to Colonial and Post-Colonial Literature 3
ENGL F380—Topics in Colonial and Post-Colonial Literature 3
HIST F316—Europe since 1945.....3
PHIL/PS F472—Ethics and International Affairs 3
PS F203—Peace, War and Security 3
PS F322O—International Law and Organization.....3
SOC F405O—Social Movements and Social Change 3

3. Complete a civic engagement/internship project .....1 – 3
4. Minimum credits required.....16 – 18

HISTORY

College of Liberal Arts
Department of History
907-474-7126
www.uaf.edu/history/

B.A. Degree

Minimum Requirements for Degree: 120 credits

The history department seeks to make students aware of human cultural heritage, the great problems that have faced humans throughout history and how we have sought to solve them.

The department also trains students to apply the historical method which offers analysis based on the dimension of time. Discussion, focused on concrete, specific events, persons and judgments, explains why things are as they are. Students learn effective historical research and writing.

Through the study of history, students prepare for careers in public service agencies; as members of management teams, particularly in the area of policy analysis; for careers in teaching; or for advanced work in history and other social sciences.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete HIST F100X.)*
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   a. Complete three of the following:
      HIST F101—Western Civilization.....3
      HIST F102—Western Civilization.....3
      HIST F121—East Asian Civilization 3
      HIST F122—East Asian Civilization 3
      HIST F131—History of the U.S. 3
      HIST F132—History of the U.S. 3
   b. Complete the following:
      HIST F275—Perspectives on History.....3
   c. Complete 5 HIST courses at the F300- or F400-level, at least 2 of which must be at the F400-level. 15
   d. Of the courses for the major, at least two (at any level) must be taken in each of the following three fields. These courses must be approved by an advisor.
      1. United States history
      2. European history
      3. Other areas, such as
         Northern history (including Alaska)
         World or non-western (non-U.S., non-European) history
         Women's history
   e. Complete the following:
      HIST F475W—Historiography.....3
      HIST F476W/O—Senior Thesis.....3
4. Minimum credits required.....120

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

Note: Students who are considering graduate work in history are strongly urged to take at least two years of a foreign language.

Note: History majors are strongly urged to consult with the history department regarding the selection of a minor.

Minor

1. Complete HIST electives at the F300-level or above.....6
2. Complete HIST electives.....12
3. Minimum credits required.....18

INTERDISCIPLINARY STUDIES

Office of Interdisciplinary Programs
907-474-7716
fyinds@uaf.edu
www.uaf.edu/gradsch/classes/interdisciplinary-program/

B.A., B.S., B.T. Degrees

Minimum Requirements for Degrees: 130 credits

The UAF interdisciplinary program provides flexibility to students who have well-defined goals that do not fit into one of the established majors offered by the university. Two tracks are available for students. First, programs with well-defined interdisciplinary goals that do not fit into established majors, and second, a general studies degree completion option. The program, with well-defined goals, is available to undergraduate and graduate students (see page 233 for graduate information). Interdisciplinary studies, both graduate and undergraduate programs, are administered by the Graduate School office. Help with the application process, contact information for faculty advisors and assistance for interdisciplinary students is available at 907-474-7716 or see www.uaf.edu/gradsch/classes/interdisciplinary-program/.

Interdisciplinary Goals Option

Students may submit a proposal for an interdisciplinary program after completing 15 credits at UAF as long as they have at least 30 credits remaining in the proposed degree program. The proposed curriculum must differ significantly from established degree

programs at UAF and will require evidence that the necessary facilities and faculty are available to ensure an approximation of a normal undergraduate degree. All general requirements for the B.A., B.S. or B.T. degree must be met.

In developing an interdisciplinary proposal, the student should specify the degree (B.A., B.S. or B.T.), include an explanation of how the proposed program differs substantially from established UAF programs, and include a discussion showing that current UAF resources are adequate to meet the requirements of the proposed program. (A minimum of two disciplines is required for the interdisciplinary degree.) The student then obtains an advisory committee of at least three faculty members from the appropriate disciplines and holds at least one formal meeting with the full committee to review the proposal. The committee will appoint a chair, review the proposed program, select a degree title in concert with the student and make its recommendation. Applicants then submit the proposal for the program they wish to pursue to the Dean of the Graduate School, specifying the degree, proposed curriculum work sheet and rationale. The degree is awarded through the school or college of the chair of the committee, subject to approval by the Dean of the Graduate School.

Students interested in pursuing an undergraduate interdisciplinary degree can contact the Office of the Graduate School and Interdisciplinary Programs for help in finding faculty advisors and developing their curriculum proposal.

General Studies Degree Completion Option (may not be used as a double major)

Students may not declare this major until they have accumulated at least 100 credits.

B.A., B.S. or B.T. degree

1. Contact the UAF Office of the Graduate School and Interdisciplinary Programs for materials and procedures. Prepare and submit a rationale/justification letter.
2. Three faculty members serving in the Academic Advising Center or at Rural Campuses will serve as the degree completion interdisciplinary studies committee.
3. Prepare rationale/justification letter explaining the need for the degree completion program.
4. Conduct committee meeting to finalize degree proposal.
5. Submit to the dean of the Graduate School for final approval.
6. Complete all the requirements for the baccalaureate program including
   a. Completing the Core curriculum
   b. Completing the residency requirement
   c. Completing 39 upper-division credits
   d. Completing the PRAXIS I pre-professional skills test. This test should be completed when Core requirements are satisfied but may be taken the last semester in the program.
7. Minimum credits required.....130

JAPANESE STUDIES

College of Liberal Arts
Department of Foreign Languages and Literatures
907-474-7396
www.uaf.edu/language/

B.A. Degree

Minimum Requirements for Degree: 120 credits

Students majoring in Japanese studies are required to successfully complete at least one semester on an exchange program in Japan. Spending a full academic year abroad is strongly encouraged.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following Japanese Studies core requirements (all courses in this category are taught in Japanese):* (15)
   JPN F301—Advanced Japanese**.....3
   JPN F302O—Advanced Japanese**.....3
   JPN F431—Studies in Japanese Culture**.....3
   JPN F432—Studies in Japanese Language**.....3
   JPN F475—Seminar on Contemporary Japan.....3
4. Complete 6 credits from the following Japanese Studies electives:*
   JPN F330—Classical Japanese Literature.....3
   JPN F331W—Women's Voices in Japanese Literature.....3
   JPN F332—Japanese Cultural Traditions and Arts.....3
   JPN F333—Twentieth Century Japanese Prose Fiction.....3
   JPN F482—Selected Topics in Japanese.....3
5. Complete 12 additional credits from the following Japan-related electives as approved by an advisor:* *** ****
   JPN F210—Beginning Kanji.....2
   JPN F310—Intermediate Kanji.....2
   JPN F311—Advanced Kanji.....2
   JPN F330—Classical Japanese Literature.....3
   JPN F331W—Women's Voices in Japanese Literature.....3
   JPN F332—Japanese Cultural Traditions and Arts.....3
   JPN F333—Twentieth Century Japanese Prose Fiction.....3
   JPN F482—Selected Topics in Japanese.....3
   HIST F121—East Asian Civilization.....3
   HIST F122—East Asian Civilization.....3
   HIST F331—Modern Japan.....3
   HIST F333—Foundations of Japanese History.....3
   HIST F414—Women and Gender in East Asian History.....3
   GEOG F311W—Geography of Asia.....3
   PS F321—International Politics.....3
   PS F464W—East Asian Governments and Politics.....3
6. Completion of semester exchange in Japan or written departmental approval.**
7. Minimum credits required.....120

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

** *After completion of language training through the 202-level, students may study in Japan as long as they complete a minimum of 15 credits of Japanese language study at the upper-division level to fulfill the Japanese Studies core requirements. JPN F475 must be taken in residence at UAF.*

*** *Instructor-approved Japan-related courses taken during time abroad may count toward this requirement.*

**** *Courses taken to satisfy requirement 4 may not be retaken or otherwise counted to satisfy requirement 5.*

Note: Students planning a double major for a single B.A. may double count a maximum of 9 credits from the major requirements toward a second major. Students earning two degrees (B.A./B.B.A.) are not subject to double counting restrictions.

Minor

1. Complete the following:
   Japanese course credits at the 100-level or above.....3
   Japanese course credits at the 200-level or above.....12
2. Minimum credits required.....15

JOURNALISM

College of Liberal Arts
Department of Journalism
907-474-7761
www.uaf.edu/journal/

B.A. Degree

Minimum Requirements for Degree: 123 – 124 credits

The journalism program offers a solid curriculum designed to prepare students to leave the classroom and be ready to take their places in the nation's newsrooms.

In addition to the solid academic background they receive in the classroom, students get practical experience by working with media on and off campus. On campus, these include public television and public radio stations, a student-owned FM station and the campus newspaper. Off campus, students have opportunities to intern with a variety of radio and television stations, newspapers and other media-related businesses and organizations, both in and out of Alaska.

The department runs several laboratory facilities including a news writing/digital photography lab, a multimedia lab, a digital audio production lab, a digital video editing lab, two photography labs and a photography studio, and an electronic newsroom. The department is accredited by the Accrediting Council on Education in Journalism and Mass Communication.

Major — B.A. Degree

Concentrations: Broadcast Journalism, New Media, News-Editorial, Photojournalism

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements. (See page 135. As part of the B.A. degree requirements, complete HIST F132*.)
3. Complete the following program (major) requirements:*
   JRN F101—Introduction to Mass Communications.....3
   JRN F202—News Reporting and Writing.....3
   JRN F400—Professional Media Internship.....3
   JRN F413—Mass Media Law and Regulation.....3
   JRN F421—Journalism in Perspective.....3
   JRN F490—Online Publication: "Extreme Alaska".....3
4. Complete credits outside of journalism**.....80
5. Complete one of the following concentrations:*

Broadcast Journalism

a. Complete the following:
   JRN F215—Radio Production.....3
   JRN F251—Television Production.....4
   JRN F452W—Radio and Television News Writing.....3
   JRN F453O—Television News Reporting.....3
b. Complete two courses from the list of approved journalism electives.
c. Minimum credits required.....124

New Media

a. Complete the following:
   JRN F250—Website Design.....3
   JRN F323—Editing for Journalists.....3
   JRN F390—New Media Toolkit.....3
   JRN F484—Multimedia Theory and Practice.....3
b. Complete two courses from the list of approved journalism electives.***
c. Minimum credits required.....123

News-Editorial

a. Complete the following:
   JRN F311—Magazine Article Writing.....3
   JRN F323—Editing for Journalists.....3
   JRN F401—Beat Reporting (or another beat course as approved by advisor).....3
   JRN F444W—Investigative Reporting.....3
b. Complete two courses from the list of approved journalism electives.
c. Minimum credits required.....123

Photojournalism

a. Complete the following:
   JRN F203—Basic Photography.....3
   JRN F404—Photojournalism I.....3
   JRN F406—Photojournalism II.....3
   JRN F407—Inkjet Printing.....3
b. Complete two courses from the list of approved journalism electives.
c. Minimum credits required.....123

Approved journalism electives:*

JRN F203—Basic Photography.....3
JRN F215—Radio Production.....3
JRN F220—Adobe Photoshop.....3
JRN F240—Foreign Corresponding.....3
JRN F250—Website Design.....3
JRN F251—Television Production.....4
JRN F280—Video Storytelling.....3
JRN F311W—Magazine Article Writing.....3
JRN F323—Editing for Journalists.....3
JRN F324—Typography and Publication Design.....3
JRN/THR/FLM F347O—Lighting Design.....3
JRN/WMS F380O—Women, Minorities and the Mass Media...3
JRN F390—New Media Toolkit.....3
JRN F401—Beat Reporting.....3
JRN F402—Advanced Photography.....3
JRN F404—Photojournalism I.....3
JRN F405—Advanced Photography Seminar.....3
JRN F406—Photojournalism II.....3
JRN F407—Inkjet Printing.....3
JRN F411W—Writing for a Living.....3
JRN F440—Ethics and Reporting in the Far North.....3
JRN F444W—Investigative Reporting.....3
JRN F452—Radio and Television News Writing.....3
JRN F453O—Television News Reporting.....3
JRN F454—Advanced TV News Production.....3
JRN F456W—Science Writing for Magazines and Newspapers.....3
JRN F480—Documentary Filmmaking.....3
JRN/ART F484—Multimedia Theory and Practice.....3
JRN F493—Special Topics.....3
JRN F497—Independent Study.....3

* *Student must earn a C grade or better in each course in the major requirements and any course offered through the Department of Journalism .*

** *To assure the journalist a broad liberal arts education, 80 credits must be outside of journalism, 65 of which should be from traditional liberal arts courses offered by any of these departments: AKNP, ALST, ANL, ANS, ANTH, ART, ASLG, ATM, BIOL, CHEM, COMM, ECON, ENGL, ENVE, ESK, FISH, FL, FREN, FSN, GEOG, GEOS, GER, HIST, HONR, HUM, JPN, JUST, LING, LS, MATH, MSL, MUS, NORS, NRM, PHIL, PHYS, PS, PSY, RUSS, SOC, SPAN, STAT, THR, WMS.*

*** *Either JRN F471O or F472O may be used as approved JRN electives in the New Media concentration.*

Note: In order to earn a B.A. degree in journalism, at least 39 credits must be taken in upper-division (F300-level or higher) courses.

Minor*

1. Complete the following:
   JRN F101—Introduction to Mass Communications 3
   JRN F202—News Reporting and Writing.....3
   Approved JRN electives 9
2. Minimum credits required.....15

* *Student must earn a C grade or better in all department courses used to satisfy minor requirements.*

JUSTICE

College of Liberal Arts
Justice Program
907-474-5500
www.uaf.edu/justice/

B.A. Degree

Minimum Requirements for Degree: 120 credits

The justice discipline represents a melding of theoretical and applied concepts, and the B.A. degree in justice, as well as the M.A. degree in administration of justice, reflects that dichotomy. Consequently, students explore theoretical models associated with different aspects of the criminal justice system, but also study the structure and administration of the criminal justice system.

The applied science nature of the discipline results in graduates with a B.A. degree in justice being able to favorably compete for professional positions within various justice employment fields. This also creates opportunities for internships with various justice agencies for justice juniors and seniors.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   JUST F110—Introduction to Justice.....3
   JUST F125—Introduction to Addictive Processes.....3
   JUST F222—Research Methods.....3
   JUST F251—Criminology 3
   JUST F300X—Ethics and Justice** 3
   JUST F340—Rural Justice in Alaska.....3
   JUST F358—Juvenile Delinquency 3
   JUST F460O—American Crime Control 3
4. Complete 18 credits from the following:*
   a. Justice electives.....12
   b. Six credits from the following:
      ANTH F242—Native Cultures of Alaska.....3
      ANTH F320W—Language and Culture: Applications to Alaska (3)
         or COMM F330—Intercultural Communications (3).....3
      HUMS F205—Basic Principles of Group Counseling 3
      PSY F330—Social Psychology 3
      PSY F370—Drugs and Drug Dependence 3
      SOC F201—Social Problems 3
      SOC F301—Rural Sociology.....3
      SOC F335—Deviance and Social Control 3
      JUST electives .....3 – 6
5. Minimum credits required.....120

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

** *If taken to meet the upper-division of baccalaureate core requirement for ethics/values and choices in the Perspectives on the Human Condition, then student must take an additional upper-division justice elective for 3 credits to complete the major.*

Minor

1. Complete the following:
   JUST F110—Introduction to Justice.....3
   JUST electives 12
2. Minimum credits required.....15

LAW AND SOCIETY

College of Liberal Arts
Department of Political Science
907-474-7609
www.uaf.edu/polisci/

Minor only

This program helps students understand law in relationship to the larger society. It is based firmly on the view that the law is a rich humanistic tradition and study of legal ideas and institutions will promote sustained reflection on such fundamental concepts and values as equality, freedom, privacy, justice and human rights.

While the program is of special interest to students who plan graduate studies in law or careers in government service, it is recommended for any student who desires to understand the role of law in society. The program provides students with tools for reasoned appraisal of how the law works, ideas and policies that underlie it, and the ability to think clearly and analyze arguments critically.

Minor

1. Complete the following 9 credits:
   PS F303—Politics and the Judicial Process 3
   PS F435W—Constitutional Law I: Federalism.....3
   PS F436W—Constitutional Law II: Civil Rights and Liberties 3
2. Complete 6 credits from the following:
   ANS F425—Federal Indian Law and Alaska Natives 3
   BA F317W—Employment Law 3
   BA F330—The Legal Environment of Business.....4
   JRN F413—Mass Media Law and Regulation.....3
   JUST F352—Criminal Law.....3
   JUST F354—Procedural Law.....3
   PS F322O—International Law and Organization.....3
   PS F450—Comparative Aboriginal Rights and Policies 3
   SOC F435—Sociology of Law 3
3. Minimum credits required.....15

LEADERSHIP AND CIVIC ENGAGEMENT

College of Liberal Arts
Northern Studies Program
907-474-7126
www.uaf.edu/northern/

Minor only

The minor in leadership and civic engagement is administered by the northern studies program. Its purpose is to strengthen the abilities of UAF graduates to lead and contribute effectively in both the public and private spheres, especially in the Alaska public policy context.

Minor

1. Complete the following:
   NORS F205—Leadership, Citizenship and Choice 3
   NORS F486—Senior Seminar in Leadership and Civic Engagement 3
2. Complete three courses from the following. At least one course must be a PS elective and one course must be a HIST elective.
   PS F202—Democracy and Global Society 3
   PS F263—Alaska Native Politics 3
   PS F301—American Presidency 3
   PS F315—American Political Thought.....3
   PS F462—Alaska Government and Politics.....3
   HIST F131—History of the United States 3
   HIST F361—Early American History 3
   HIST F364—History of the U.S. 1945 – Present 3
   RD F300W—Rural Development in a Global Perspective 3
   RD F325—Community Development Strategies.....3
3. Minimum credits required 15

LINGUISTICS

College of Liberal Arts
Linguistics Program
907-474-6585
www.uaf.edu/linguist/

B.A. Degree

Minimum Requirements for Degree: 120 credits

Linguistics is the study of language and covers a variety of subjects from theories of grammar and how we produce language to applications of linguistic knowledge in areas such as language teaching. The undergraduate degree program seeks to give an overview of the discipline to raise students' awareness of the many aspects of that uniquely human phenomenon, language.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   a. Complete the following background-related requirements:**
      Foreign or Native language (four semesters or equivalent) and a second language (two semesters).***.....12 – 16
      LING F101—Nature of Language 3
   b. Complete the following:*
      ENGL F318—Modern English Grammar.....3
      LING F318—Introduction to Phonetics and Phonology 3
      LING F320—Introduction to Morphology.....3
      LING F430—Historical Linguistics (3)
      or LING F420—Semantics (3).....3
      LING F482—Seminar in Linguistics 3
   c. Complete six of the following:*
      ANL F251—Introduction to Athabascan Linguistics 3
      ANL F315—Alaska Native Languages: Eskimo-Aleut.....3
      ANL F316—Alaska Native Languages: Indian Languages 3
      ANS F320W—Language and Culture: Applications of Alaska..3
      ANTH/WMS F308W,O—Language and Gender.....3
      COMM F320—Communication and Language.....3
      ENGL F462—Applied English Linguistics.....3
      ENGL F472—History of the English Language 3
      LING F410O—Theory and Methods of Second Language Teaching.....3
      LING F420—Semantics.....3
      LING F430—Historical Linguistics.....3
      LING F431—Field Methods in Descriptive Linguistics I.....3
      LING F434— Field Methods in Descriptive Linguistics II.....3
      LING F450O—Language, Policy and Planning.....3
      or other upper-division LING electives.
4. Minimum credits required 120

Minor

1. Complete the following:
   LING F101—Nature of Language 3
   LING F318—Introduction to Phonetics and Phonology 3
   LING F320—Introduction to Morphology (3)
   or ENGL F318—Modern English Grammar (3).....3
2. Complete two LING electives. **** 6
3. Minimum credits required 15

* *Student must earn a C grade or better in each course.*
** *Where appropriate, these courses may be counted toward fulfillment of core requirements or B.A. degree requirements, but not both.*
*** *It is recommended that at least one of the languages be other than an Indo-European language.*
**** *Three of these credits may be from related courses in other departments listed in the linguistics major under 3c.*

MATHEMATICS

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

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 number of service courses in support of other programs within the university. 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 assistance 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:
   a. 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 135 or 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:*
   MATH F200X—Calculus I**.....4
   MATH F201X—Calculus II**.....4
   MATH F202X—Calculus III 4
   MATH F215—Introduction to Mathematical Proofs.....2
   MATH F314—Linear Algebra.....3
   MATH F401W—Introduction to Real Analysis.....3
   MATH F405W—Abstract Algebra 3
   MATH F490O—Senior Seminar 1

5. Complete 21 additional credits of electives.* Acceptable elective courses include any MATH course at the F300-level or above, any STAT course at the F300-level or above, and CS F201. At least 15 credits must be MATH courses. [For exceptions see below.***] The following are some suggested elective packages:

a. Pure math electives:
MATH F305—Geometry....3
MATH F320—Topics in Combinatories....3
MATH F422—Introduction to Complex Analysis....3
MATH F404—Topology....3
Additional elective credits....9

b. 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
STAT F300—Statistics....3
Additional elective credits....3

c. Requirements for mathematics teachers (grades 7 – 12):****
CS F201—Computer Science I....3
MATH F305—Geometry....3
MATH F306—Introduction to the History and Philosophy of Mathematics....3
STAT F300—Statistics (3) or MATH F371—Probability and MATH F408—Mathematical Statistics (6)....3 – 6
Two courses chosen from:
MATH F302—Differential Equations (3)
MATH F320—Topics in Combinatories (3)
MATH F321—Number Theory (3)
MATH F310—Numerical Analysis (3)
MATH F460—Mathematical modeling (3)....6
Additional elective credits....3

d. Statistics concentration electives:
MATH F371—Probability....3
MATH F408—Mathematical Statistics....3
MATH F460—Mathematical Modeling....3
STAT F300—Statistics....3
STAT F401—Regression and Analysis of Variance....4
Additional elective credits....6

6. Minimum credits required....120

* *Student 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 disciplines may be used as electives. Such an elective package must be approved by an advisor in the Department of Mathematics and Statistics. The requirement that at least 15 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 Department of Mathematics and Statistics.*

Note: At least 12 approved mathematics credits at the F300-level or above must be taken while in residence on the Fairbanks campus.

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

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

MECHANICAL ENGINEERING

College of Engineering and Mines
Department of Mechanical Engineering
907-474-7136
www.uaf.edu/cem/me/

B.S., B.S./M.S. Degrees

Minimum Requirements for Degree: B.S.: 131 credits; B.S./M.S.: 151 credits

The mission of the mechanical engineering department at UAF is to offer the highest quality contemporary education at undergraduate and graduate levels, and to perform research appropriate to the technical needs of the state of Alaska, the nation and the world.

Mechanical engineers conceive, plan, design and direct the manufacturing, distribution and operation of a wide variety of devices, machines and systems for energy conversion, environmental control, materials processing, transportation, materials handling and other purposes. Mechanical engineers are engaged in creative design, applied research, development and management. A degree in mechanical engineering also frequently forms the base for entering law, medical or business school, as well as for graduate work in engineering.

The objectives of the mechanical engineering program are to produce graduates who are able to compete successfully on the world stage at the professional level; deal with the significant local, regional, national and global issues facing humankind; continue to develop as engineers through lifelong learning; and serve as resources of technical knowledge for the state as well as the nation, especially with respect to northern issues. The Engineering Accreditation Commission of ABET has accredited the B.S. degree program in mechanical engineering since 1980.

Because engineering is based on mathematics, chemistry and physics, students are introduced to the basic principles in these areas during their first two years of study. The third year encompasses courses in the engineering science — extensions to the basic sciences forming the foundation to engineering synthesis and design. The design project course draws on much of the student's previous learning through a simulated industrial design project. Throughout the four-year program, courses in communication, humanities and social sciences are required because mechanical engineers must be able to communicate effectively in written, oral and graphical form.

Students may choose an emphasis in aerospace or petroleum engineering. Because of UAF's unique location, special emphasis is placed on cold regions engineering problems. This fact is highlighted in the technical elective, arctic engineering. Candidates for the B.S. degree in mechanical engineering are required to take the state of Alaska Fundamentals of Engineering examination in their general field.

Undergraduate students who plan to pursue graduate studies in engineering may also choose an accelerated degree for a master's in mechanical engineering. This program speeds the process and allows qualified mechanical engineering students to complete both a bachelor of science and a master of science degree in five years.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X, CHEM F105X and CHEM F106X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete MATH F201X, PHYS F211X and PHYS F212X.)
3. Complete the following program (major) requirements:*
   - ES F101—Introduction to Engineering....3
   - ES F201—Computer Techniques....3
   - ES F209—Statics....3
   - ES F210—Dynamics....3
   - ES F301—Engineering Analysis....3
   - ES F307—Elements of Electrical Engineering....3
   - ES F331—Mechanics of Materials....3
   - ES F341—Fluid Mechanics....4
   - ES F346—Basic Thermodynamics....3
   - ESM F450W—Economic Analysis and Operations....3
   - MATH F202X—Calculus III....4
   - MATH F302—Differential Equations....3
   - ME F302—Dynamics of Machinery....4
   - ME F308—Measurement and Instrumentation....3
   - ME F313—Mechanical Engineering Thermodynamics....3
   - ME F321—Industrial Processes....3
   - ME F334—Elements of Material Science/Engineering....3
   - ME F403—Machine Design....3
   - ME F408—Mechanical Vibrations....3
   - ME F415W—Thermal Systems Laboratory....3
   - ME F441—Heat and Mass Transfer....3
   - ME F487W,O—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 F101.*

** *Mechanical engineering course at F400-level or above.*

*** *Engineering course at F400-level or above.*

Note: Students electing to complete an emphasis in aerospace engineering must complete the sequence of aerospace courses (ME F450, F451, F452 and F453) 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 F409 and F416 or equivalent, plus two F400-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.

Major — B.S./M.S. Degree

1. Complete the following admission requirements:
   a. ME major (junior preferred) or senior standing.
   b. GPA 3.25 or above (based on minimum of 24 credits in ME major requirements). Students must maintain a cumulative GPA of 3.0 to remain in the program.
   c. Submit three letters of reference.
   d. Submit GRE (general) scores.
   e. Submit a study goal statement.
   f. Submit a UAF graduate application for admission.
2. Complete the general university requirements (page 131).
3. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X, PHYS F211X and PHYS F212X.)
4. Complete the master's degree requirements (page 205).
5. Complete the following B.S. program (major) requirements:
   - ES F101—Introduction to Engineering....3
   - ES F201—Computer Techniques....3
   - ES F209—Statics....3
   - ES F210—Dynamics....3
   - ES F301—Engineering Analysis....3
   - ES F307—Elements of Electrical Engineering....3
   - ES F331—Mechanics of Materials....3
   - ES F341—Fluid Mechanics....4
   - ES F346—Basic Thermodynamics....3
   - ESM F450W—Economic Analysis and Operations....3
   - MATH F202X—Calculus....4
   - MATH F302—Differential Equations....3
   - ME F302—Dynamics of Machinery....3
   - ME F308—Measurement and Instrumentation....3
   - ME F313—Mechanical Engineering Thermodynamics....3
   - ME F321—Industrial Processes....3
   - ME F334—Elements of Materials Science/Engineering....3
   - ME F403—Machine Design....3
   - ME F408—Mechanical Vibrations....3
   - ME F415W—Thermal Systems Laboratory....3
   - ME F441—Heat and Mass Transfer....3
   - ME F487W/O— Design Project....3
6. Complete the following M.S. program (major) requirements:
   - ME F608—Advanced Dynamics....3
   - ME F631—Advanced Mechanics of Materials....3
   - ME F634—Advanced Materials Engineering....3
   - ME F641—Advanced Fluid Mechanics....3
   - ME F642—Advanced Heat Transfer....3
7. Complete the thesis or non-thesis requirements:

   Thesis
   - ME F699—Thesis....6
   - Electives....9

   (Electives approved by student's advisory committee with at least 3 credits at the graduate level)

   Non-Thesis
   - ME F698—Project....3
   - Electives....12

   (Electives approved by student's advisory committee with at least 6 credits at the graduate level)
8. Minimum credits required for both degrees....151

Note: This degree program must be completed in seven years or the student will be disqualified from the program. If a student is disqualified for exceeding the seven year limit, a Mechanical Engineering B.S. degree will be awarded if: 1) course work is completed in 10 years, and 2) the student meets all ME B.S .requirements.

MILITARY SCIENCE AND LEADERSHIP

College of Liberal Arts
Department of Military Science and Leadership
907-474-7501
www.uaf.edu/rotc/

Minor only

The Army Reserve Officers' Training Program (ROTC) is America's primary officer training program. The Nanook Battalion is a cooperative effort agreed to by the Army and UAF as a means of providing

junior officer leadership in the interest of national security. The goal of the program is to assist young men and women with leadership potential in obtaining commissions in the Army Reserve, National Guard or Regular Army.

Military science and leadership is an approved minor for the B.A. degree. Army instructors train students in leadership, management and decision-making through academic instruction and practical experience laboratories. These instructors impart qualities necessary for the Army officer and civilian executive.

ROTC is divided into the basic course for freshmen and sophomores and the advanced course for juniors and seniors. Programs and courses can be adjusted to meet specific needs of individual students who desire to enroll but are past their freshman year.

Basic military science courses are open to all students regardless of whether or not they intend to seek an Army commission. There is no military obligation incurred by enrolling in any of the basic courses.

Students who complete the basic course and desire to pursue the program for a commission may apply for enrollment in the advanced course. A special basic camp, two-year program is available for transfer students and others who were unable to take ROTC prior to their last two years in school. This program allows immediate acceleration into the advanced course. Students should consult the professor of military science prior to June 1 annually for information concerning the basic camp. Students with prior military service may also apply for immediate enrollment as an advanced course student. Applicants must be physically qualified and be selected by the professor of military science. The criterion for selection is based on both academic proficiency and leadership potential. Students who wish to enroll in advanced classes but do not desire to earn a commission may do so with the approval of the department head.

There are many activities sponsored by the Nanook Battalion. The ROTC Color Guard team opens UAF hockey, basketball and other sporting and communal events. They provide a recognized trained and dedicated guard for the national colors during the national anthem and opening ceremony. The Ranger Challenge team represents the Nanook Battalion and UAF in an annual military skill-based competition in Hawaii. The Nanook Battalion has a complete set of match grade rifles and pistols for marksmanship training. Army training such as Airborne School, Air Assault School, Northern Warfare Training and Mountaineering School are also offered to students.

At an annual UAF ceremony, awards are presented for outstanding academic, athletic and leadership achievement, as well as excellence in ROTC skills.

Completion of the advanced program will lead to service in the Army as a commissioned officer. Students who compete for a commission are provided a monthly stipend. Advanced course students receive a monthly subsistence allowance during the school year. This allowance is tax free. Students enrolled in military science are furnished uniforms and texts by the department. Army ROTC scholarships are available for tuition and lab fees, and provide a book allowance in addition to the stipend. Scholarships are awarded for two, three or four years on a competitive basis. Interested students should contact the military science department for further details.

Minor

1. Complete the following:
   MILS electives* 19
2. Minimum credits required 19

* *Electives must be approved by the department.*

MINING ENGINEERING

College of Engineering and Mines
Department of Mining and Geological Engineering
907-474-7388
www.uaf.edu/cem/min/

B.S. Degree

Minimum Requirements for Degree: 132 credits

As the nation's northernmost accredited mining engineering program, our mission is to advance and disseminate knowledge for exploration, evaluation, development and efficient production of mineral and energy resources with assurance of the health and safety of persons involved and protection of the environment, through creative teaching, research and public service with an emphasis on Alaska, the North and its diverse peoples.

The mining engineering program emphasizes engineering as it applies to the exploration and development of mineral resources and upon the economics of the business of mining. The program offers specializations in exploration, mining or mineral beneficiation.

Students are prepared for job opportunities with mining and construction companies, consulting and research firms, equipment manufacturers, investment and commodity firms in the private sector, as well as with state and federal agencies.

The mining engineering program educational objectives are to graduate competent engineers who are prepared for employment in the mineral and energy industries in temperate and arctic regions, are prepared to solve problems germane to Alaska, and are prepared for graduate studies at the masters or doctoral level.

Mining engineers may aspire to, and achieve, the highest positions in the industry: operating or engineering management, government agency director or entrepreneur. Starting salaries are among the highest in the engineering profession.

Students may initiate their mining engineering program in Anchorage and transfer to Fairbanks upon completion of their freshman or sophomore year. Anchorage students intending to transfer to Fairbanks should contact faculty of the UAF mining engineering department.

Candidates for the B.S. degree in mining engineering must take the state of Alaska Fundamentals of Engineering examination. The Fundamentals of Engineering examination is a first step toward registration as a professional engineer.

The minor in mining engineering provides non-mining engineering students with an opportunity to acquire employable skills in the mining profession. Students in the mining engineering minor will be trained in a broad variety of topics such as mine ventilation, ground control, mine operation, economics, environmental law and labor management. Students will have the choice of other mining topics to make up the minor requirements.

For more information about the Mining Engineering Program mission, goals and educational objectives, visit www.uaf.edu/cem/min/about/.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: CHEM F105X, CHEM F106X, LS F101X and MATH F200X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X, PHYS F211X and PHYS F212X.)
3. Complete the following program (major) requirements:*
   ES F208—Mechanics 4
   ES F307—Elements of Electrical Engineering 3
   ES F331—Mechanics of Materials 3
   ES F341—Fluid Mechanics 4

ES F346—Basic Thermodynamics....3
GE F261—General Geology for Engineers....3
GEOS F262—Rocks and Minerals....3
GEOS F332—Ore Deposits and Structure....3
MIN F103—Introduction to Mining Engineering....1
MIN F104—Mining Safety and Operations Lab....1
MIN F202—Mine Surveying....3
MIN F225—Quantitative Methods in Mining Engineering....2
MIN F226—Introduction to Mine Development....2
MIN F301—Mine Plant Design....3
MIN F302—Underground Mine Environmental Engineering....3
MIN F313—Introduction to Mineral Preparation....3
MIN F370—Rock Mechanics....3
MIN F407W—Mine Reclamation and Environmental Management....2
MIN F408O—Mineral Valuation and Economics....3
MIN F409—Operations Research and Computer Applications in Mineral Industry....3
MIN F443—Principles and Applications of Industrial Explosives....3
MIN F454—Underground Mining Methods....3
MIN F482—Computer Aided Mine Design-VULCAN....3
MIN F484—Surface Mining Methods II....2
MIN F489W—Mining Design Project I....1
MIN F490W—Mining Design Project II....2
MIN F485—Mining Engineering Exit Exam....0

4. Complete the following program (major) requirements:
MATH F202X—Calculus....4
MATH F302—Differential Equations....3

5. Complete 3 credits* from the following recommended technical electives:**
GE F440—Slope Stability....3
MIN F401—Mine Site Field Trip....2
MIN F447—Placer Mining....3
MIN F472—Ground Control....3
MIN F481—Computer Aided Mine Design-TECHBASE....3
MIN F415—Coal Preparation....3
MIN F646—Mining Engineering in the Arctic....3
CE F603—Arctic Engineering....3
Approved technical electives....3 – 6

6. Minimum credits required....132

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

** *Students must plan their elective courses in consultation with their mining engineering faculty advisor. Technical electives are selected from the list of the approved technical electives for mining engineering program and other programs course listing. All elective courses must be approved by the department head.*

Minor

1. Complete 15 credits from the following:*
MIN F301—Mine Plant Design....3
MIN F313—Introduction to Mineral Preparation....3
MIN F370—Rock Mechanics....3
MIN F407W—Mine Reclamation and Environmental Management....2
MIN F409—Operations Research/Computer Applications....3
MIN F370—Rock Mechanics....3
MIN F407W—Mine Reclamation and Environmental Management....2
MIN F408O—Mineral Valuation and Economics....3
MIN F409—Operations Research/Computer Applications....3
MIN F443—Principles and Applications of Industrial Explosives....3
MIN F482—Computer-Aided Mine Design....3
Advisor approved mining elective....1

2. Minimum credits required....15

**Students must earn a C grade or better in each course.*

MUSIC

College of Liberal Arts
Department of Music
907-474-7555
www.uaf.edu/music/

B.A., B.M. Degrees

Minimum Requirements for Degrees: B.A.: 130 credits;
B.M.: 120 – 144 credits

The music curriculum is designed to satisfy cultural and professional objectives. The B.A. degree in music provides a broad, liberal education with a concentration in music. The B.M. degree in music education offers thorough preparation in teacher training with sufficient time to develop excellence in performance areas. The B.M. degree in performance offers intensive specialization for those desiring professional training in music performance.

Recitals and concerts provide students with a variety of musical experiences which expand their regular curriculum.

The music department of UAF is a full member of the National Association of Schools of Music, the national accrediting organization.

Notes for All Undergraduate Music Degrees

The various music organizations maintained by the department offer participation for students in all academic divisions of the university. Music majors will be required to earn a minimum of 8 credits in large ensembles: MUS F101 (University Chorus), MUS F203 (Fairbanks Symphony Orchestra), MUS F205 (Wind Symphony), MUS F211 (Choir of the North). Wind and percussion instrumentalists are required to take a minimum of 4 credits in MUS F205 (Wind Symphony). Piano majors may substitute up to 2 credits of MUS F307—Piano Accompanying.

Each student (major or non-major) who enrolls in private applied lessons must be currently enrolled in a large ensemble. Requirements for students registered for class lessons vary with disciplines and are at the discretion of the instructor.

Attendance at recitals and concerts provides students with a variety of musical experiences which expand their regular curriculum; therefore, registration for MUS F190 (Recital Attendance) is mandatory until majors have passed eight semesters and minors have passed two. All applied music students enrolled in MUS F261 or higher are required to perform in at least one student recital during each semester of study.

At the end of each semester, all music majors must demonstrate a satisfactory level of proficiency of performance (Performance Juries) in their applied major in order to advance to the next level of study. A student may elect to continue study at the 200-level to prepare to pass requirements for admission to upper-division study. The performance jury at the end of the first semester of study serves as an audition for students wishing to enter a B.M. program in music education or performance. Competency levels required for each degree must be achieved in one performance area.

A piano proficiency jury examination must be successfully completed by the end of the student's second year in the program. See the Music Department Handbook for details.

Students who desire to enroll in music theory or ear training courses will complete a placement examination and be allowed to enter at their appropriate level.

Students must earn a C grade or better in each course of their major concentration. MUS F493 is repeatable up to 6 credits. MUS F153, F307, F313, F317 are repeatable for credit. MUS F161–F162, F261–F262, F361–F362, F461–F462 are repeatable up to 6 credits.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete a piano placement test during the first week of classes.
4. Complete the following program (major) requirements:
   a. Complete the following:
      MUS F131 and F132—Basic Theory 4
      MUS F133 and F134—Basic Ear Training 4
      MUS F161–F362—Private Lessons (major area) 12
      MUS F190—Recital Attendance 0
      MUS F221 and F222—History of Music 6
      MUS F231 and F232—Advanced Theory 4
      MUS F233 and F234—Advanced Ear Training 2
      MUS F253—Piano Proficiency 0
      MUS F331—Form and Analysis 3
      MUS F332—Introduction to Music Technology 3
   b. Large ensembles 6
   c. Complete 6 credits from the following:
      MUS F421W—Music before 1620 3
      MUS F422W—Music in the Seventeenth and Eighteenth Centuries 3
      MUS F423W—Music of the Nineteenth Century 3
      MUS F424W—Music in the Twentieth Century 3
      MUS F410W—Women in Music 3
5. Minimum credits required 130

Major — B.M. Degree (Performance)

1. Complete the following B.M. degree admission requirement:
   a. Audition on the major instrument.
2. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, voice performance majors must complete one year of language study. Selection of the language will be made in consultation with the voice advisor.)
3. Complete a piano placement test during the first week of classes.
4. Complete the following degree and program (major) requirements:
   a. Complete the following:
      MUS F161–F462—Private Lessons (major) 24
      MUS F131 and F132—Basic Theory 4
      MUS F133 and F134—Basic Ear Training 4
      MUS F221 and F222—History of Music 6
      MUS F231 and F232—Advanced Theory 4
      MUS F233 and F234—Advanced Ear Training 2
      MUS F331—Form and Analysis 3
      MUS F332—Introduction to Computer-based Music Technology 3
      MUS F351O—Conducting 3
      MUS F390—Junior Recital 0
      Large ensembles 8
      MUS F190—Recital Attendance 0
      MUS F490—Senior Recital 0
   b. Complete 6 credits from the following:
      MUS F431—Counterpoint 3
      MUS F432—Orchestration and Arranging 3
      MUS F433—Seminar in Musical Composition 3
      MUS F434—Advanced Harmonic Analysis 3
      MUS F435—Private Lessons in Music Composition ....2 – 4
   c. Complete 6 credits from the following:
      MUS F421W—Music before 1620 3
      MUS F422W—Music in the Seventeenth and Eighteenth Centuries 3
      MUS F423W—Music of the Nineteenth Century 3
      MUS F424W—Music in the Twentieth Century 3
   d. Complete 9 credits from the following secondary area:*
      MUS F124—Music in World Cultures 3
      MUS F153—Functional Piano 1
      MUS F161–F162, F261–F262, F361–F362, F461–F462—Private Lessons (secondary performance area) .... 2 or 4
      MUS F223—Alaska Native Music 3
      MUS F253—Piano Proficiency 0
      MUS F307—Chamber Music 1
      MUS F313—Opera Workshop ....1 – 3
      MUS F317—Arctic Chamber Orchestra 1
      MUS F493—Special Topics ....1 – 6
5. Minimum credits required ....123 – 124

* *Courses from 4b and 4c not already applied to program requirements may also meet this requirement.*

Major — B.M. Degree (Music Education)

Concentrations: Elementary, Secondary, K – 12

1. Complete the following B.M. degree admission requirement:
   a. Audition on the major instrument.
2. Complete the general university requirements (page 131).
3. Complete a piano placement test during the first week of classes.
4. Complete the following degree and program (major) requirements:
   Large ensembles 8
   MUS F131 and F132—Basic Theory 4
   MUS F133 and F134—Basic Ear Training 4
   MUS F161 – F461—Private Lessons (major) 14
   MUS F190—Recital Attendance 0
   MUS F221 and F222—History of Music 6
   MUS F231 and F232—Advanced Theory 4
   MUS F233 and F234—Advanced Ear Training 2
   MUS F253—Piano Proficiency 0
   MUS F331—Form and Analysis 3
   MUS F332—Introduction to Music Technology 3
   MUS F351O—Conducting 3
   MUS F390—Junior Recital 0
   MUS F432—Orchestration and Arranging 3
5. Complete the following education requirements:
   a. Contact the School of Education for application procedures for admission to the teacher education program.*
   b. Complete the following:
      MUED F110—Becoming a Music Teacher in the 21st Century 2
      MUED F201—Introduction to Music Education 2
      MUED F315—Music Methods and Techniques 10
      MUED F316—Practicum in Middle School Classroom Techniques 1
      EDSE F482—Inclusive Classrooms for All Children 3
      ANS/ED F420—Alaska Native Education (3) or ED F350—Communication in Cross-Cultural Classrooms (3) 3
      PSY F240—Lifespan Developmental Psychology 3
   c. Complete a multicultural elective** 3
6. Complete one of the following concentrations:
   Elementary
   a. Complete the following:
      MUED F309—Elementary School Music Methods 3
      ED F452O—Elementary Internship ....3 – 12
   b. Minimum credits required 138

Secondary

a. Complete the following:
MUED F405W—Secondary School Music Methods 3
ED F453O—Secondary Internship .....3 – 12
b. Minimum credits required 138

K – 12

a. Complete the following:
MUED F309—Elementary School Music Methods 3
MUED F405W—Secondary School Music Methods 3
ED F454O—Student Teaching K – 12 15
b. Minimum credits required 144

* *Music education majors must have completed the necessary prerequisites and have been admitted to the teacher education program prior to acceptance for placement in student teaching.*

** *Contact the Office of Certification and Advising (School of Education) for a list of approved courses that meet this requirement.*

Minor

1. Students must select from one of the options defined below:

Option A

a. Select twelve credits from the following courses:
MUS F103—Fundamentals of Music 3
MUS F124—Music in World Cultures 3
MUS F131—Basic Theory 2
MUS F132—Basic Theory 2
MUS F133—Basic Ear Training 2
MUS F134—Basic Ear Training 2
MUS F221—History of Music 3
MUS F222—History of Music 3
MUS F223—Alaska Native Music 3
MUS F231—Advanced Theory 2
MUS F232—Advanced Theory 2
MUS F421W—Music before 1620 3
MUS F422W—Music in the Seventeenth and Eighteenth Centuries 3
MUS F423W—Music in the Nineteenth Century 3
MUS F424W—Music since 1900 3
b. Select two credits from the following music large ensemble courses:
MUS F101—University Chorus 1
MUS F203—Orchestra 1
MUS F205—Wind Ensemble 1
MUS F207—UAF Jazz Ensemble 1
MUS F211—Choir of the North 1
MUS F319—Alaska Chamber Chorale 1
c. Select four credits from the following courses in private lessons or class lessons:
MUS F151—Class Lessons 1
MUS F161-F462—Private Lessons 2
d. MUS F190—Recital Attendance (two semesters) 0
e. Total credits 18

Option B

a. Select six credits from the following courses:
MUS F103—Fundamentals of Music 3
MUS F124—Music in World Cultures 3
MUS F131—Basic Theory 2
MUS F132—Basic Theory 2
MUS F133—Basic Ear Training 2
MUS F134—Basic Ear Training 2
MUS F221—History of Music 3
MUS F222—History of Music 3
MUS F223—Alaska Native Music 3
MUS F231—Advanced Theory 2
MUS F232—Advanced Theory 2
MUS F421W—Music before 1620 3
MUS F422W—Music in the Seventeenth and Eighteenth Centuries 3
MUS F423W—Music in the Nineteenth Century 3
MUS F424W—Music since 1900 3
b. Select four credits from the following music ensemble courses:
MUS F101—University Chorus 1
MUS F203—Orchestra 1
MUS F205—Wind Ensemble 1
MUS F207—UAF Jazz Band 1
MUS F211—Choir of the North 1
MUS F319—Alaska Chamber Chorale 1
c. Select eight credits from the following courses in private lessons or chamber music:
MUS F161-F362—Private Lessons 2
MUS F307—Chamber Music 1
d. MUS F190—Recital Attendance (two semesters) 0
e. Total credits 18

Note: No substitutions permitted between options. It is recommended that students contact the Music Department for advisement on appropriate course selections before selecting courses. All performance courses are subject to course enrollment studio space limitations. Large ensemble courses are available subject to currently available vacancies for different instrumental areas. Private lessons and large ensemble courses may require passing of a performance audition. Prerequisite requirements apply.

NATURAL RESOURCES MANAGEMENT

School of Natural Resources and Agricultural Sciences
907-474-7083
www.uaf.edu/snras/

B.S. Degree

Minimum Requirements for Degree: 130 credits

Natural resources management is making and implementing decisions to develop, maintain or protect ecosystems to meet human needs and values. The core natural resources management curriculum provides students with a broad education in the various natural resources and their related applied fields. Programs can be tailored to enhance a student's depth or breadth in a given field of interest. The program is designed for students desiring careers in resources management or in other fields requiring knowledge of resources management and students planning advanced study, as well as those wishing to be better informed citizens.

The B.S. degree has three concentrations: forestry; high latitude agriculture; and resources. The forestry concentration offers students the opportunity to focus on the multi-resource management of forests and associated ecosystems for the sustained production of goods and services and to prepare for forestry related employment.

The natural resources management/forestry program is the only accredited four-year forestry program in Alaska.

The goals of UAF's forestry program are to produce graduates who are highly competitive in obtaining professional employment, who have the knowledge to perform well on the job and who are valued for work in Alaska and the circumpolar North; maintain close student interaction with faculty and provide opportunity for students to obtain practical professional experience as part of their education; and to prepare students for lifelong learning and responsible participation in decision-making about the use of natural resources.

The university provides students with a foundation in the biological, social and physical sciences and a blend of classroom, laboratory and field work to develop skills for a career in forestry. The forestry program leads to a professional degree in forestry. The program is accredited by the Society of American Foresters (SAF).

The high latitude agriculture concentration offers opportunities for scientific study and education in areas such as field and

greenhouse plant production, domestication and propagation of native plants, revegetation, domestic and native animal production, and agricultural and ecological aspects of soil science. The resources concentration emphasizes responsible stewardship in the management of multiple resources that occur in natural systems. Field and laboratory activities and applications of knowledge gained are stressed throughout the program. Internships and work-study arrangements are often available for qualified students.

State and federal agencies such as the Alaska Department of Natural Resources, Agricultural Research Service, U.S. Forest Service, Bureau of Land Management, Natural Resource Conservation Service and U.S. Fish and Wildlife Service contribute significantly to the instructional program by providing guest lecturers and internship and field work opportunities for students.

Major — B.S. Degree

Concentrations: Forestry; High Latitude Agriculture; Resources

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete a MATH—Calculus course.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete STAT F200X*.)
3. Complete the following (major) requirements:*
   BIOL F115X—Fundamentals of Biology I** 4
   BIOL F116X—Fundamentals of Biology II** 4
   BIOL F271—Principles of Ecology 4
   CHEM F105X—General Chemistry*** 4
   CHEM F106X—General Chemistry*** 4
   ECON F235—Introduction to Natural Resource Economics 3
   NRM F101—Natural Resources Conservation and Policy 3
   NRM F106—Orientation to Natural Resource Management 1
   NRM F304WO—Perspectives in Natural Resources Management 3
   NRM F380W—Soils and the Environment 3
   NRM F405W—Senior Thesis in Natural Resources Management I 2
   NRM F406W—Senior Thesis in Natural Resources Management II 2
4. Complete one of the following concentrations:*

Forestry

a. Complete the following:
   BIOL F239—Introduction to Plant Biology (4)
   or NRM F211—Introduction to Applied Plant Science (3) ....3 – 4
   ECON F335O—Intermediate Natural Resource Economics 3
   GEOS F101X—The Dynamic Earth 4
   NRM F204—Public Lands Law and Policy 3
   NRM F251—Silvics and Dendrology 4
   NRM F290—Resource Management Issues at High Latitudes 2
   NRM F338—Introduction to Geographic Information Systems 3
   NRM F340—Natural Resources Measurement and Inventory 3
   NRM F365—Principles of Outdoor Recreation Management 3
   NRM F370—Introduction to Watershed Management 3
   NRM F430—Resource Management Planning 3
   NRM F450—Forest Management 3
   NRM F440—Silviculture 3
   NRM F452—Forest Health and Protection 3
   NRM F453—Harvesting and Utilization of Forest Products 3
   WLF F201—Wildlife Management Principles (3)
   or FISH F487W,O—Fisheries Management (3) 3

b. Complete three of the following to total at least 8 credits:****
   i. Complete at least one of the following non-measurements courses:
      BIOL F331—Systematic Botany 4
      FIRE—Any course on wildland fire control/management 3
      GEOS F408—Photogeology 2
      NRM F277—Introduction to Conservation Biology 3
      NRM F300—Internship in Natural Resources Management***** ....1 – 6
      NRM F303X—Environmental Ethics and Actions****** 3
      NRM F312—Introduction to Range Management 3
      WLF F201—Wildlife Management Principles (3)
      or FISH F487W,O—Fisheries Management (3) 3
   ii. Complete at least one of the following measurements courses:
      CE F112—Elementary Surveying 3
      GEOS F422—Geoscience Applications of Remote Sensing 3
      NRM F435—GIS Analysis 4
      STAT F401—Regression and Analysis of Variance 4
      STAT F402—Scientific Sampling 3

* *Student must earn a C grade or better in each course.*
** *Satisfies core natural science requirement.*
*** *Satisfies B.S. degree natural science requirement.*
**** *Courses other than those listed must be approved by student's advisor.*
***** *Must be forestry related.*
****** *If used to fulfill the baccalaureate core requirement for ethics/values and choices in the perspectives on the human condition, NRM F303X may not also count toward a natural resources management major. However, in this case, only two courses that total at least 5 credits are required from this list, exclusive of NRM F303X.*

High Latitude Agriculture

a. Complete the following:
   BIOL F331—Systematic Botany (4)
   or BIOL F310—Animal Physiology (4)
   or BIOL F317—Comparative Anatomy of Vertebrates (4) 4
   NRM F211—Introduction to Applied Plant Science 3
   NRM F290—Resource Management Issues at High Latitudes 2
   NRM F312—Range Management 3
   NRM F320—Animal Science 3
   NRM F480—Soil Management for Quality Conservation (3)
   or NRM F485—Soil Biology* (3) 3
   or NRM F466—Environmental Soil Chemistry (3)
b. Complete at least 8 credits in biology, botany, physics, chemistry, geosciences and/or mathematics, in addition to the above basic courses. Courses must be approved for science majors.
c. Complete at least 9 credits in natural resources management electives:
   NRM F102—Practicum in Natural Resources Management (1 – 2)
   and any other NRM course at the F200-level or above that has not been used to meet other requirements.
d. Complete at least 12 credits beyond those taken to fulfill categories above in a support field which is a group of courses selected for its clear pertinence to a cohesive program. Support fields may include but are not limited to: animal science, chemistry, communications, education, engineering, forestry, geography, marketing, natural resources management, nutrition, plant science, rural development or soils. The courses must be approved by the student's academic advisor prior to attaining senior standing.

* *The same course cannot be used to satisfy requirements in both sections a and c.*

Resources

a. Complete the following:
ECON F335O—Intermediate Natural Resource Economics.....3
GEOS F101X—The Dynamic Earth 4
NRM F204—Public Lands Law and Policy 3
NRM F251—Silvics and Dendrology.....4
NRM F290—Resource Management Issues at High Latitudes 2
NRM F312—Introduction to Range Management (3) or NRM F480—Soil Management for Quality and Conservation (3).....3
NRM F338—Introduction to Geographic Information Systems 3
NRM F340—Natural Resources Measurement and Inventory 3
NRM F365—Principles of Outdoor Recreation Management ...3
NRM F370—Introduction to Watershed Management 3
NRM F430—Resource Management Planning 3
WLF F201—Wildlife Management Principles (3) or FISH F487W,O—Fisheries Management (3).....3

b. Complete at least 9 credits from the humans and the environmental electives category. Courses involve human effects on the environment and its products through management. Substitutions may be made only with the permission of the student's academic advisor and the department head.
ANTH F428—Ecological Anthropology and Regional Sustainability 3
ECON F437W—Regional Economic Development 3
FISH F261—Introduction to Fish Utilization 3
FISH F487W,O—Fisheries Management.....3
FIRE F256—Wildland Fire Planning and Multiple Use Management 3
GEOG F427—Polar Geography 3
MIN F101—Minerals, Man and the Environment 3
MIN F407W—Mine Reclamation and Environmental Management 3
NRM F277—Introduction to Conservation Biology 3
NRM F300—Internship in Natural Resources Management and Geography.....3
NRM F312—Introduction to Range Management 3
NRM/WLF F431—Wildlife Law and Policy.....3
NRM F450—Forest Management.....3
NRM F440—Silviculture 3
NRM F465—Outdoor Recreation Planning 3
NRM F480—Soil Management for Quality and Conservation.....3
RD F255—Rural Alaska Land Issues.....3
RD F265—Perspectives on Subsistence in Alaska.....3
RD F350O—Indigenous Knowledge and Community Research.....3
WLF F201—Wildlife Management Principles.....3
WLF F419O/2—Waterfowl and Wetlands Ecology and Management 4

c. Select at least 9 credits in an approved support field. Selections may include courses listed within the humans and the environmental elective category, and need not be limited to those with NRM designators. Courses are selected for their clear pertinence to a cohesive program and must be approved by the student's academic advisor prior to attaining senior standing. Examples include but are not limited to: communications, data management, economics, marketing, recreation or resources policy. Support fields may also include subject areas in forest and plant, animal, and soil sciences.

5. Minimum credits required.....130

Note: Courses required for the major may also be used to satisfy the general university and B.S. degree requirements as appropriate.

Minor

1. Complete the following:
NRM F101—Natural Resources Conservation and Policy 3
NRM electives* 15

2. Minimum credits required.....18

* *At least 6 credits must be upper-division. The minor program must be approved by an NRM advisor.*

NORTHERN STUDIES

College of Liberal Arts
907-474-7126
www.uaf.edu/northern/

B.A. Degree

Minimum Requirements for Degree: 130 credits

The northern studies program offers an interdisciplinary study of northern problems and policy issues. The purpose of the northern studies program is to give interested students a broader study of the northern region — its environment, peoples and problems.

The geographic location of UAF is outstanding for the study of northern issues. Students examine the countries and regions throughout the circumpolar North and their distinctive problems, such as the survival of indigenous populations, environmental and wilderness issues, high rates of alcoholism and suicide, fragile environments, adaptation to extreme cold and cycles of light and darkness and adult development in small frontier societies.

The northern studies curriculum is centered around an interdisciplinary course (NORS F484W—Seminar in Northern Studies) which is taken in the senior year.

For information on studying at McGill University, Montreal, Canada; the University of Copenhagen, Denmark; or opportunities for study in the former U.S.S.R., see Exchange Programs and Study Abroad Programs, page 78.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following northern studies core requirements:*
ANL F315—Alaska Native Languages: Eskimo-Aleut.....3
ANTH F242—Native Cultures of Alaska.....3
BIOL F104—Natural History of Alaska.....3
GEOG F427—Polar Geography 3
HIST F483W—20th Century Circumpolar History 3
NORS F484W—Seminar in Northern Studies.....3
PS F263—Alaska Native Politics (3) or PS F462—Alaska Government and Politics (3) 3
4. Complete 15 credits* from 2 of the following groups:**

a. Anthropology
ANTH F302—Ethnography of Siberia (s) 3
ANTH F309—Circumpolar Archaeology 3
ANTH F313—Ethnography of Alaska (s) 3
ANS/ANTH F320W—Language and Culture: Applications to Alaska 3
ANTH F383—Athabascan Peoples of Alaska and Adjacent Canada 3
ANTH F472—Culture and History of the North Atlantic.....3

b. Geography
GEOG F302—Geography of Alaska 3
GEOG F303—Geography of United States and Canada 3
GEOG F306—Geography of Russia 3
c. History
HIST F404—Modern Scandinavia 3
HIST F461W—History of Alaska 3
HIST F463—Foundations of Russian History 3
HIST F464—History of Russia 3
HIST F481—Polar Exploration and Its Literature 3
d. Political Science
PS/ANS F325—Native Self-Government 3
PS/ANS F450—Comparative Aboriginal Rights and Policies 3
PS F452—International Relations of the North 3
PS F454—International Law and the Environment 3
PS F460W—Government and Politics of Canada 3
PS F468W—Government and Politics of Russia 3
e. Humanities
ART F365—Native Art of Alaska 3
ART F367—Eskimo Art 3
ENGL F349—Narrative Art of Alaska Native Peoples (in English Translation) 3
ENGL F350—Literature of Alaska and the Yukon Territory 3
Northern language*** 10

5. Minimum credits required 130

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

** *Students are encouraged to use the major in conjunction with a discipline-based major. Double majors linking northern studies with, for example, Alaska Native studies, anthropology, geography, history or political science majors may double count a maximum of 9 credits from the above groupings toward the second major. Other majors may double count a maximum of 9 credits toward their university distribution requirements.*

*** *Two semesters of a northern language, such as Eskimo or Russian.*

Minor

1. Complete the following:
ANL F315—Alaska Native Languages: Eskimo-Aleut 3
ANTH F242—Native Cultures of Alaska 3
BIOL F104—Natural History of Alaska 3
GEOG F427—Polar Geography 3
HIST F483W—20th Century Circumpolar History 3
PS F263—Alaska Native Politics (3)
or PS F462—Alaska Government and Politics 3

2. Minimum credits required 18

PETROLEUM ENGINEERING

College of Engineering and Mines
Department of Petroleum Engineering
907-474-7734
www.uaf.edu/cem/pete/

B.S. Degree

Minimum Requirements for Degree: 134 credits

The mission of the petroleum engineering program is to provide its students with quality education and training in the field of petroleum engineering through effective teaching, research and public service, with emphasis on Alaska petroleum resources.

Petroleum engineering offers a unique look at the challenging problems confronting the petroleum industry. This program requires an understanding of many disciplines including mathematics, physics, chemistry, geology and engineering science. Courses in petroleum engineering deal with drilling, formation evaluation, production, reservoir engineering, computer simulation and enhanced oil recovery.

The curriculum prepares graduates to meet the demands of modern technology while emphasizing, whenever possible, the special problems encountered in Alaska. Located in one of the largest oil-producing states in the nation, the UAF petroleum engineering department offers one of the most modern and challenging degree programs available.

The petroleum engineering program educational objectives are:

1. Provide students with a broad knowledge of the principles of petroleum engineering and their application.
2. Provide students with the knowledge and skills required to design and analyze petroleum engineering problems, taking into account, safety, environmental and societal impacts.
3. Provide students with the skills necessary to perform in the multi-disciplinary environment of the 21st century.
4. Provide students with appreciation for the value of continuing professional development in maintaining their professional competence.
5. Assure that graduates from the program are well-prepared to succeed in their professional careers, whether they pursue graduate studies or enter the work force in industry, academia or government.

For more information about the Petroleum Engineering Program mission, goals and educational objectives, visit www.uaf.edu/cem/pete/about/.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X, CHEM F105X and F106X, and LS F101X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X, PHYS F211X and F212X.)
3. Complete the following program (major) requirements:*
ES F201—Computer Techniques 3
ES F208—Mechanics 4
ES F331—Mechanics of Materials 3
ES F341—Fluid Mechanics 4
ES F346—Basic Thermodynamics 3
GE F261—General Geology for Engineers (3)
or GEOS F101X—The Dynamic Earth (4) ....3 – 4
GEOS F370—Sedimentary and Structural Geology for Petroleum Engineers 4
PETE F103—Survey of Energy Industries 1
PETE F104—Fundamentals of Petroleum 1
PETE F205—Fundamentals of Drilling Practices 1
PETE F206—Introduction to Petroleum Production 1
PETE F301—Reservoir Rock and Fluid Properties 4
PETE F302—Well Logging 3
PETE F303W—Reservoir Rock and Fluid Properties Laboratory 1
PETE F407—Petroleum Production Engineering 3
PETE F411W—Drilling Fluids Laboratory 1
PETE F421—Reservoir Characterization 3
PETE F426—Drilling Engineering 3
PETE F431—Natural Gas Engineering 2
PETE F456—Petroleum Evaluation and Economic Decisions ..3
PETE F466—Petroleum Recovery Methods 3
PETE F476—Petroleum Reservoir Engineering 3
PETE F478—Well Test Analysis 2
PETE F481W—Well Completions and Stimulation Design 3
PETE F487A—Petroleum Project Design** 1
PETE F487BW,O—Petroleum Project Design 1
PETE F489—Reservoir Simulation 2

Engineering elective*** 3
Technical elective**** 3

4. Complete the following program (major) requirements:
MATH F202X—Calculus III 4
MATH F302—Differential Equations 3
MATH F310—Numerical Analysis (3)
or ES F301—Engineering Analysis 3

5. Complete the Fundamentals of Engineering Exam (as approved by the Board of Architects, Engineers and Land Surveyors).

6. Minimum credits required 134

* *Student must earn a C grade or better in each course.*
** *PETE F487A is prerequisite for PETE F487B. Must take both courses to meet the oral communication and writing intensive requirements.*
*** *As approved by advisor (e.g. ME F416 or ES F307).*
**** *As approved by advisor (e.g. CE F603).*

PHILOSOPHY

College of Liberal Arts
Department of Philosophy and Humanities
907-474-7343
www.uaf.edu/philo/

B.A. Degree

Minimum Requirements for Degree: 130 credits

The courses in philosophy are designed to confront the student with the fundamental problems of both Western and non-Western philosophical heritages and introduce the student to independent reflection on them, thus broadening his/her perspectives for the various areas of specialization in science, the social sciences and humanities.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete two semester-length courses of non-English language study at the college level.*
4. Complete the following program (major) requirements:**

a. Complete the following:
PHIL F102—Introduction to Philosophy 3
PHIL F104—Logic and Reasoning 3
PHIL F202—Introduction to Eastern Philosophy 3
PHIL F351—History of Ancient Greek Philosophy 3
PHIL F352—History of Modern Philosophy:
Descartes to Kant 3
PHIL F471—Contemporary Philosophical Problems 3

b. Complete six of the following electives:
PHIL F108—Science, Critical Thinking and Pseudoscience 3
PHIL F110—Introduction to Political Philosophy 3
PHIL F322X—Ethics*** 3
PHIL F341O—Theories of Knowledge 3
PHIL F342—Theories of Reality 3
PHIL F353—Survey of Buddhist Thought 3
PHIL F361—Philosophy in Literature 3
PHIL F362—Feminist Philosophy 3
PHIL F381—Topics in Logics 3
PHIL F402—Biomedical Ethics 3
PHIL F411W,O—Classical Political Theory 3
PHIL F412W—Modern Political Theory 3
PHIL F421—Aesthetics 3
PHIL F472—Ethics in International Affairs 3
PHIL F481—Philosophy of Science 3
PHIL F482—Comparative Philosophy and Religions 3
PHIL F485—Topics in Comparative Philosophies 3
PHIL F487—Conceptual Issues in Evolutionary Biology 3
PHIL F493—Special Topics 3
PHIL F499W—B.A. Thesis in Philosophy 3

5. Minimum credits required 130

Minor

1. Complete the following:
PHIL F102—Introduction to Philosophy 3
PHIL F351—History of Ancient Greek Philosophy 3
PHIL F352—History of Modern Philosophy:
Descartes to Kant 3
PHIL elective at the F400-level 3

2. Complete two of the following:
PHIL F104—Logic and Reasoning 3
PHIL F108—Science, Critical Thinking and Pseudoscience 3
PHIL F110—Introduction to Political Philosophy 3
PHIL F202—Introduction to Eastern Philosophy 3
PHIL F322X—Ethics*** 3
PHIL F341O—Theories of Knowledge 3
PHIL F342—Theories of Reality 3
PHIL F353—Survey of Buddhist Thought 3
PHIL F361—Philosophy in Literature 3
PHIL F381—Topics in Logics 3
PHIL F402—Biomedical Ethics 3
PHIL/PS F411W,O—Classical Political Theory 3
PHIL/PS F412W—Modern Political Theory 3
PHIL F421—Aesthetics 3
PHIL F472—Ethics in International Affairs 3
PHIL F481—Philosophy of Science 3
PHIL F482—Comparative Philosophy and Religions 3
PHIL F485—Topics in Comparative Philosophies 3
PHIL F487—Conceptual Issues in Evolutionary Biology 3

3. Minimum credits required 18

* *Non-English language may be used to meet general degree requirements.*
** *Student must earn a C grade or better in each course.*
*** *PHIL F322X may not be counted toward a philosophy major or minor if used to fulfill core requirements.*

PHYSICS

College of Natural Science and Mathematics
Department of Physics
907-474-7339
www.uaf.edu/physics/

B.A., B.S. Degrees

Minimum Requirements for Degrees: 120 credits

The science of physics is concerned with the nature of matter and energy in all physical systems, from elementary particles to the structure and origin of the universe. Physics, together with mathematics and chemistry, provides the foundation for work in all fields of the physical sciences and engineering, and contributes greatly to other disciplines such as the biosciences and medicine.

The undergraduate curriculum provides a solid foundation in classical and modern physics, with emphasis on both its experimental and theoretical aspects. A student completing this curriculum can be well prepared for advanced study in physics and related sciences, and for other careers that also require refined abilities in problem solving.

The physics department is also responsible for the bachelor's degree programs in general science and applied physics. These programs are also described in this catalog.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:
   a. Complete the following:*
      PHYS F211X—General Physics....4
      PHYS F212X—General Physics....4
      PHYS F213X—Elementary Modern Physics....4
      PHYS F301—Introduction to Mathematical Physics....4
      PHYS approved electives....20
   b. Complete the following:
      MATH F200X—Calculus I**....4
      MATH F201X—Calculus II**....4
      MATH F202X—Calculus III....4
      MATH electives at the F300-level or above....3
4. Minimum credits required....120

* *Student must earn a C grade or better in each course.*
** *Satisfies core curriculum or B.A. degree requirements, but not both.*

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, these courses are suggested: CHEM F105X and CHEM F106X; GEOS F101X; BIOL F115X.)
2. Complete the B.S. degree requirements (page 136).
3. Complete the following program (major) requirements:*
   PHYS F211X—General Physics....4
   PHYS F212X—General Physics....4
   PHYS F213X—Elementary Modern Physics....4
   PHYS F220—Introduction to Computational Physics....4
   PHYS F301—Introduction to Mathematical Physics....4
   PHYS F313—Thermodynamics and Statistical Physics....4
   PHYS F341—Classical Physics I: Particle Mechanics....4
   PHYS F342—Classical Physics II: Electricity and Magnetism...4
   PHYS F343—Classical Physics III: Vibration and Waves....4
   PHYS F381W,O—Physics Laboratory....3
   PHYS F382W—Physics Laboratory....3
   PHYS F421—Quantum Mechanics....4
   PHYS F462—Geometrical and Physical Optics....4
   PHYS F471—Advanced Topics in Physics I**....3
   PHYS F472—Advanced Topics in Physics II**....3
4. Complete the following program (major) requirements:
   MATH F200X—Calculus I***....4
   MATH F201X—Calculus II***....4
   MATH F202X—Calculus III....4
   MATH electives at the F300-level or above****....6
5. Minimum credits required....120

* *Student must earn a C grade or better in each course.*
** *Student must take at least three emphasis topics from F471 and at least three application topics from F472*
*** *Satisfies core curriculum or B.S. degree requirements, but not both.*
**** *Suggested electives: MATH F314, F421 and F422.*
Note: Other courses suggested to fulfill minimum credit requirements: ES F201, F307 and F308.

Requirements for physics teachers (grades 7 – 12)

1. Complete all the requirements of the B.A. or B.S. degree.
2. All prospective physics teachers must complete the following:
   CHEM F105X and CHEM F106X—General Chemistry....8
   PHYS F211X—General Physics....4
   PHYS F212X—General Physics....4
   PHYS F213X—Elementary Modern Physics....4
   PHYS F220—Introduction to Computational Physics....4
   PHYS F301—Introduction to Mathematical Physics....4
   PHYS approved electives....16
   MATH electives....3
3. All prospective science teachers must complete the following:
   PHIL F481—Philosophy of Science (3)....3
   Note: 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.

Minor

1. Complete the following:
   PHYS F103X – F104X—College Physics (8)
   or PHYS F211X – F212X—General Physics (8)....8
2. Complete the following:
   PHYS F213X—Elementary Modern Physics....4
   Electives at the F300 – F400-level....8
3. Minimum credits required....20

PHYSICS, APPLIED

College of Natural Science and Mathematics
Department of Physics
907-474-7339
www.uaf.edu/physics/

B.S. Degree

Minimum Requirements for Degree: 120 credits; 124 credits for concentration in Technical Management

The science of physics is concerned with the nature of matter and energy for all physical systems, from elementary particles to the structure and origin of the universe. Physics, together with mathematics and chemistry, provides the foundation for work in all fields of the physical sciences and engineering and contributes greatly to other fields such as the biosciences and medicine.

The field of applied physics encompasses those areas that have developed practical applications from fundamental research in physics in the last century, including space physics, plasma physics, condensed matter physics, device physics, surface physics, biophysics, laser physics and reactor physics.

The undergraduate curriculum provides a solid foundation in general physics. Students may study applied physics in one of three concentrations or may design a course of study appropriate for individual goals. Examples outside the approved concentrations could include engineering physics and biophysics. In all cases, the credits in applied physics (items "d" and "e" in each course outline) must be appropriate for the chosen subject area.

The concentration in Technical Management provides an opportunity to combine basic knowledge of physics with an aptitude for leadership in business. Declared physics majors in good standing with appropriate grades, department mentoring, and with approval for some courses are upon graduation welcome to apply to the M.B.A. program in UAF's School of Management. GMAT exam required.

Major — B.S. Degree with no concentration

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete MATH F201X, PHYS F211X* and PHYS F212X*.)

3. Complete the following program (major) requirements:
   a. Complete the following:
      MATH F202X—Calculus III 4
      PHYS F213X—Elementary Modern Physics* 4
      PHYS F220—Introduction to Computational Physics* 4
      PHYS F301—Introduction to Mathematical Physics* 4
      PHYS F341—Classical Physics I: Particle Mechanics* 4
      PHYS F342—Classical Physics II: Electricity and Magnetism* 4
   b. Complete mathematics credits at the F200-level or above 9
   c. Complete physics credits at the F300-level or above* 9
   d. Complete credits in applied physics*** 17
4. Minimum credits required 120

Concentrations: Atmospheric Physics, Computational Physics, Technical Management

Atmospheric Physics

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete: MATH F201X, PHYS F211X* and PHYS F212X*.)
3. Complete the following program (major) requirements:
   a. Complete the following:
      MATH F202X—Calculus III 4
      PHYS F213X—Elementary Modern Physics* 4
      PHYS F220—Introduction to Computational Physics* 4
      PHYS F301—Introduction to Mathematical Physics* 4
      PHYS F341—Classical Physics I: Particle Mechanics* 4
      PHYS F342—Classical Physics II: Electricity and Magnetism* 4
   b. Complete mathematics credits at the F200-level or above 9
   c. Complete physics credits at the F300-level or above* ** 9
   d. Complete the following:*
      ATM F401—Introduction to Atmospheric Science 3
      ATM F413—Atmospheric Radiation 3
      ATM F445—Atmospheric Dynamics 3
   e. Complete credits in other relevant upper-division courses* ** 8
4. Minimum credits required 120

Computational Physics

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete MATH F201X, PHYS F211X* and PHYS F212X*.)
3. Complete the following program (major) requirements:
   a. Complete the following:
      MATH F202X—Calculus III 4
      PHYS F213X—Elementary Modern Physics* 4
      PHYS F220—Introduction to Computational Physics* 4
      PHYS F301—Introduction to Mathematical Physics* 4
      PHYS F341—Classical Physics I: Particle Mechanics* 4
      PHYS F342—Classical Physics II: Electricity and Magnetism* 4
   b. Complete mathematics credits at the F200-level or above 9
   c. Complete credits in applied physics* ** 12
   d. Complete the following in the concentration:*
      MATH F310—Numerical Analysis 3
      CS F201—Computer Science I 3
      CS F202—Computer Science II 3
   e. Complete credits in other relevant upper-division courses* ** 5
4. Minimum credits required 120

Technical Management

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X.)
2. Complete the B.S. degree requirements. (See page 136. As part of the B.S. degree requirements, complete MATH F201X, PHYS F211X* and PHYS F212X*.)
3. Complete the following program (major) requirements:
   a. Complete the following:
      MATH F202X—Calculus III 4
      PHYS F213X—Elementary Modern Physics* 4
      PHYS F220—Introduction to Computational Physics* 4
      PHYS F301—Introduction to Mathematical Physics* 4
      PHYS F341—Classical Physics I: Particle Mechanics* 4
      PHYS F342—Classical Physics II: Electricity and Magnetism* 4
   b. Complete mathematics credits at the F200-level or above, which can include courses needed for the M.B.A. program, including:
      STAT F200X—Elementary Probability and Statistics or equivalent 9
   c. Complete physics credits at the F300-level or above* 12
   d. Complete the following in the concentration, which can be prerequisites for entrance into the UAF School of Management's M.B.A. program****.
      ACCT F261, F262—Accounting Concepts and Uses 6
      BA F325—Financial Management*** 3
      BA F330—The Legal Environment of Business*** 3
      BA F343—Principles of Marketing*** 3
      BA F360—Operations Management*** 3
      BA F390—Organizational Theory and Behavior*** 3
4. Minimum credits required 124

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

** *Note: These credits must be in a chosen subject area and approved before the beginning of the student's final semester by the head of the physics department.*

*** *Prerequisites are MATH F202X, STAT F200X, PHYS F220 or permission of the M.B.A. director.*

**** *Students can be required to earn a B grade or better if applying for the M.B.A. program.*

Note: Must exclude PHYS F103X and F104X from core curriculum natural science requirement.

See General Science.

POLITICAL SCIENCE

College of Liberal Arts
Department of Political Science
907-474-7609
www.uaf.edu/polisci/

B.A. Degree

Minimum Requirements for Degree: 120 credits

The Department of Political Science offers a B.A. degree as well as minors in law and society, environmental politics and political science. Graduate-level courses in political science are available through the

northern studies concentration in environmental politics and policy. Doctoral study in political science is available through the interdisciplinary studies program of the Graduate School.

The study of political science provides education for citizenship in a changing nation and world. Political science provides a sound preparation in the social sciences. As the study of power, political science explains who gets what, when, where and how. It examines the struggles over claims to authority that shape our lives and our world. As the study of values, it examines why citizens obey or rebel, the nature of just societies, and the ways individuals reconcile personal liberty with political authority. As the science of political behavior, it analyzes the actions of interest groups, political parties and public officials. Politics is an omnipresent force, not only in governments but in families, social organizations, schools and decision-making bodies of all types — from student councils to international institutions. A solid understanding of local, national and international politics will benefit any student throughout his or her career.

Courses are offered in the traditional fields of international and comparative politics, American government, political theory, public policy and public law. The department also offers classes in environmental policy and politics, Native American studies, the politics of science and women's studies. In addition to course offerings and faculty expertise, the department presents real world opportunities for political science students to apply their learning. Those include numerous internship and scholarship opportunities in Alaska and the rest of the United States. Students can participate in model United Nations simulations, join the political science honor society Pi Sigma Alpha, aid faculty as research assistants and take part in numerous other department projects such as bringing speakers to campus or hosting roundtables on important issues. Graduate students may also serve as teaching assistants.

The political science B.A. has led students to graduate work in the social sciences; employment in the media and public relations; teaching at high school and university levels; and careers in business corporations and non-profits at the state and national levels. Political science provides a broad understanding of the formation, application and change of the law, as well as research techniques and standards of argumentation essential to legal practice. The study of political science also prepares students for work in various fields of government. Alaska offers job prospects for political science graduates as managers in state and local governments and as legislators and legislative staff members. Graduates are also qualified to work outside of Alaska in numerous public and private sector jobs.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete PS F100X, PS F300X and HIST F100X.)
2. Complete the B.A. degree requirements (page 135).
3. Complete the following major (program) requirements:*
   PS F101—Introduction to American Government and Politics 3
   PS F222—Political Science Research Methods 3
   PS F499W or PS F475 or the Alaska Universities Legislative Internship Program or other approved internship earning at least 3 transferable upper-division credits 3
4. Complete 24 credits in political science. Include at least one course from four of the following sub-disciplinary groups:*
   a. Group A—American Government and Politics
      PS F212—Introduction to Public Administration 3
      PS F301—American Presidency 3
      PS F302—Congress and Public Policy 3
      PS F401W—Political Behavior 3
      PS F403W—Public Policy 3
      PS F462—Alaska Government and Politics 3
   b. Group B—Public Law
      PS F303—Politics and the Judicial Process 3
      PS/JUST F404—Introduction to Legal Research and Writing 3
      PS F435W—Constitutional Law I: Federalism 3
      PS F436W—Constitutional Law II: Civil Rights and Liberties 3
   c. Group C—Comparative Politics
      PS F201—Comparative Politics 3
      PS F202—Democracy and Global Society 3
      PS F460W—Government and Politics of Canada 3
      PS F464W—East Asian Governments and Politics 3
      PS/HIST F467W—Political Development in Latin America and the Caribbean 3
      PS F468W—Government and Politics of Russia 3
   d. Group D—International Politics
      PS F321—International Politics 3
      PS F322O—International Law and Organization 3
      PS F323—International Political Economy 3
      PS F437—United States Foreign Policy 3
   e. Group E—Political Theory
      PS F314W—Political Ideologies 3
      PS F315—American Political Thought 3
      PS/WMS F340—Women and Politics 3
      PS/PHIL F411W,O—Classical Political Theory 3
      PS/PHIL F412W—Modern Political Theory 3
5. Minimum credits required 120

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

Minor

1. Complete the following:
   PS F101—Introduction to American Government and Politics 3
   Complete at least four political science courses at the F200-, F300- or F400-level 12
2. Minimum credits required 15

PSYCHOLOGY

College of Liberal Arts
Department of Psychology
907-474-7007
www.uaf.edu/psych/

B.A., B.S. Degrees

Minimum Requirements for Degrees: 120 credits

The Department of Psychology offers B.A. and B.S. degrees in psychology. The department's focus is to provide breadth and depth in the science and profession of psychology with a commitment to honoring diversity and promoting human welfare. The curriculum develops cross-cultural knowledge, critical thinking, imagination, creativity, ethical principles and concern for social justice, as well as respect for and knowledge of diverse points of view that include feminist, multicultural, indigenous, and gay and lesbian perspectives.

In addition to active engagement in the classroom, students participate in research and community service. Programs in psychology facilitate an understanding of the human experience as an interaction of biological, psychological, social and cultural processes.

Graduates of the undergraduate program in psychology have been successful in gaining entrance to graduate school in a variety of fields including psychology, medicine, business and law. Graduation with an undergraduate psychology degree has allowed students to become employed in a variety of entry-level human services and business positions.

The Alaska Natives into Psychology (ANPsych) program helps train Alaska Natives and American Indians as psychologists or other behavioral health professionals to address the significant shortage of these professionals in Alaska, particularly rural Alaska. ANPsych supports native communities in building wellness in their villages. The ANPsych program is housed in the psychology departments at UAF and UAA and serves as a training pipeline to provide social, financial and academic support for students and behavioral health paraprofessionals who wish to continue their education. The program strives to attract Native high school and undergraduate students seeking a degree in psychology. In addition, a select group of Native students receive similar support for advanced training in psychology at the graduate level.

Major — B.A. or B.S. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. or B.S. degree requirements (page 135 or page 136).
3. Complete the following program (major) requirements:*
   a. Complete the following:
      PSY F101—Introduction to Psychology 3
      PSY F275—Introduction to Social Science Research Methods 3
      PSY F485—Senior Seminar.....3
   b. Complete one course from each of the following specialized areas:

      Research
      PSY/SOC F250—Introductory Statistics for Behavioral Sciences.....3
      PSY/SOC F480W—Qualitative Social Science Research.....3
      STAT F200X—Elementary Probability and Statistics 3

      Biological Perspectives
      PSY F335—Physiological Psychology 3
      PSY F370—Drugs and Drug Dependence 3
      PSY F470—Sensation and Perception 3

      Social Perspectives
      PSY/SOC F330—Social Psychology.....3
      PSY F390W,O—Industrial and Organizational Psychology 3
      PSY F445W—Community Psychology.....3

      Psychological Perspectives
      PSY F304—Personality.....3
      PSY F345—Abnormal Psychology.....3
      PSY F440—Learning and Cognition 3

      Multicultural/Diversity
      PSY F310O—Cross-Cultural Psychology 3
      PSY/SOC F333/WMS F332—Human Sexualities Across Cultures 3
      PSY/WMS F360O—Psychology of Women Across Cultures.....3
   c. Complete 12 additional PSY credits (you may also choose from the courses listed in the specialized areas above).
   d. Complete one community service course.**
4. Minimum credits required 120

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

** *Community service courses: PSY F310, F345, F445 and F470.*

Note: Student may not count more than 6 credits of any combination of PSY F497 and F498 toward the degree.

Note: Student may apply an unlimited number of PSY F392/F492 and PSY F393/F493 credits toward the degree provided the topics are different for each course.

Minor

1. Complete the following:
   PSY F101—Introduction to Psychology 3
   PSY electives 12
2. Minimum credits required 15

RURAL DEVELOPMENT

College of Rural and Community Development
Department of Alaska Native Studies and Rural Development
Fairbanks Campus 907-474-6528/1-888-574-6528 toll-free
Anchorage office 907-279-2700/1-800-770-9531 toll-free
Bristol Bay Campus 907-842-8316
Chukchi Campus 907-442-3400
Interior-Aleutians Campus 907-474-5439
Kuskokwim Campus 907-543-4500
Northwest Campus 907-443-2201
www.uaf.edu/danrd/

B.A. Degree

Minimum Requirements for Degree: 120 credits

Rural development degree programs are designed to educate a new generation of community leaders for rural Alaska. The B.A. degree can be earned either on the Fairbanks campus or through distance delivery.

Students in the rural development program gain a broad understanding of Alaska's relationship to the global economy and an appreciation for sustainable development strategies. Students also learn specific tools essential for community leadership, including business plan and grant proposal writing, community visioning and planning processes, computer business applications, and project management and evaluation techniques. Graduates typically take positions with tribal and municipal governments, fisheries, tourism and other private businesses, Native corporations, regional health corporations or non-profits, and state/federal agencies.

Undergraduate degree students develop a concentration in one of five areas: community business and economic development; community research and indigenous knowledge; land, resources and environmental management; rural health and human services management; or tribal and local government administration.

Special application requirements and deadlines apply for distance B.A. degree programs. For more information contact the department toll-free at 1-800-770-9531 or visit our website.

Major — B.A. Degree

Concentrations: Community Business and Economic Development; Community Research and Indigenous Knowledge; Land, Resources and Environmental Management; Rural Health and Human Services Management; Tribal and Local Government Administration

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following:*
   RD F300W—Rural Development in a Global Perspective 3
   RD F325—Community Development Strategies.....3
   RD F350O—Indigenous Knowledge and Community Research.....3
   RD F351—Strategic Planning for Rural Communities.....3
   RD F352—Rural Business Planning and Proposal Development.....3
   RD F400—Rural Development Internship 3
   RD F450—Managing Rural Projects and Programs.....3
   RD F475W—Rural Development Senior Project.....3

4. Complete the following elective courses:*
RD elective 3
RD, ANS or ED electives 6

5. Complete one of the following concentrations:**

Community Business and Economic Development

Complete 21 credits from the following:
ABUS F151—Village Based Entrepreneurship 2
ABUS F179—Fundamentals of Supervision 3
ABUS F232—Contemporary Management Issues*** 3
ABUS F233—Financial Management 3
ABUS F241—Applied Business Law I 3
ABUS F272—Small Business Planning 3
ABUS F273—Managing a Small Business 3
ACCT F261—Accounting Concepts and Uses I 3
ACCT F262—Accounting Concepts and Uses II 3
ANS F310—The Alaska Native Lands Settlement 3
ANS/PS F425—Federal Indian Law and Alaska Natives 3
BA F151—Introduction to Business*** 3
CS F101—Computers and Society 3
ECON F111—Economics of Rural Alaska 3
ECON F200—Principles of Economics 4
ENGL F212—Business, Grant and Report Writing 3
ENGL F314W,O/2—Technical Writing 3
SOC F407O—Work and Occupations 3
Approved electives** ..... 6 or more

Note: Designed for students interested in creating sustainable economic development for rural and indigenous communities, with a focus on small business development. Students learn to develop business and marketing plans, economic development planning and basic principles of financial and human resources management for rural enterprises. Graduates find employment in ANCSA corporations, regional development organizations, economic development agencies and as local entrepreneurs.

Community Research and Indigenous Knowledge

Complete 21 credits from the following:
ANL F315—Alaska Native Languages: Eskimo-Aleut 3
ANL F316—Alaska Native Languages: Indian Languages 3
ANS/ANTH F320W—Language and Culture: Applications to Alaska 3
ANS F350W,O—Cross Cultural Communication: Alaskan Perspectives 3
ANS F351—Practicum in Native Cultural Expression ..... 1 – 3
ANS F401—Cultural Knowledge of Native Elders*** 3
ANTH F230—The Oral Tradition: Folklore and Oral History 3
APAR F100—Basic Video Workshop 1
APAR F103—Editing Videotape 1
COMM F330—Intercultural Communication 3
CS F101—Computers and Society 3
ENGL F313W—Writing Non-Fiction Prose 3
ENGL F314W,O/2—Technical Writing 3
ENGL/ANS F349—Narrative Art of Alaska Native Peoples (in English Translation) 3
HIST F250—Alaska History for Local Historians 3
HIST F470W—Seminar in Alaskan History 3
JRN F215—Radio Production 3
JRN F311W—Magazine Article Writing 3
JRN F404—Photojournalism I 3
JRN F452W—Radio and Television News Writing 3
LS F309—Information Resources 1
RD F425—Cultural Impact Analysis*** 3
SOC F250—Introductory Statistics for Behavioral Sciences 3
SOC/PSY F480W—Qualitative Social Science Research 3
Approved electives** ..... 3 or more

Note: Designed for students with interests in researching Alaska Native communities, cultures, languages, ceremonial performances and histories. Students learn principles of ethical research, explore issues of intellectual and cultural property rights, and acquire skills in doing ethnographies, oral histories, community surveys and needs assessments, and archival research. Graduates find employment with museums, ANCSA corporations, tribal governments, and federal and state agencies.

Land Resources and Environmental Management

Complete 21 credits from the following:
ABUS F223—Real Estate Law 3
ANS F310—The Alaska Native Lands Settlement 3
ANS/PS F425—Federal Indian Law and Alaska Natives 3
BIOL F104—Natural History of Alaska 3
BIOL F150—Introduction to Marine Biology 3
BIOL F271—Principles of Ecology 4
BIOL/NRM F277—Introduction to Conservation Biology 3
CE F112—Elementary Surveying 3
CS F101—Computers and Society 3
ECON F235—Introduction to Natural Resource Economics 3
ENGL F314W,O/2—Technical Writing 3
FISH F101—Introduction to Fisheries 3
FISH F487W,O—Fisheries Management 3
GEOG/NRM F338—Introduction to Geographic Information Systems 3
GEOS F101X—The Dynamic Earth 4
MIN F101—Minerals, Man and the Environment 3
MSL F111X—The Oceans 4
NRM F101—Natural Resources Conservation and Policy*** 3
NRM F204—Public Lands Law and Policy 3
NRM F340—Natural Resources Measurement and Inventory 3
NRM F430/F630—Resource Management Planning 3
RD F255—Rural Alaska Land Issues*** 3
RD F265—Perspectives on Subsistence in Alaska 3
RD F280—Resource Management Research Techniques 3
WLF F201—Wildlife Management Principles 3
WLF F303W—Wildlife Management Techniques 3
Approved electives** ..... 3 or more

Note: Designed for students with an interest in land and resources co-management, development and conservation. Students learn about traditional ecological knowledge, principles of natural resources management and policy, adaptive management, and skills for effective public/private/tribal collaboration in resource management. Graduates find employment with ANCSA corporations, regional and tribal entities, state and federal agencies, and private businesses.

Rural Health and Human Services Management

Complete 21 credits from the following:
ABUS F154—Human Relations 3
ABUS F179—Fundamentals of Supervision 3
ABUS F231—Introduction to Personnel 1-3
ANS/PS F425—Federal Indian Law and Alaska Natives 3
ENGL F314W,O/2—Technical Writing 3
HUMS F120—Cultural Diversity in Human Service 3
HUMS/JUST F125—Introduction to Addictive Processes 3
HUMS F205—Basic Principles of Group Counseling 3
HUMS F210—Crisis and Grief Counseling 3
HUMS F215—Individual Interviewing 2-3
HUMS F250—Current Issues in Human Service 1-4
HUMS F301—Ethics in Human Service 3
HUMS F305—Substance Abuse Counseling 3
JUST F340—Rural Justice in Alaska 3
PS/ANS F325—Native Self-Government 3
PSY F240—Lifespan Developmental Psychology 3
PSY F445W—Community Psychology 3
RHS F110—Cross-Cultural Bridging Skills 1
RHS F120—Family Systems I 2
RHS F130—Processes of Community Change 2
RHS F140—Alaska Native Values and Principles 1
RHS F150—Introduction to Rural Counseling 2

RHS F220—Family Systems II....2
RHS F260—Addictions: Intervention and Treatment....2
RHS F265—Interpersonal Violence....2
RHS F270—Networking, Negotiating and Conflict Resolution....2
RHS F285—Case Management....2
RHS F290—Grief and Healing....2
SOC F242—The Family: A Cross-Cultural Perspective....3
SOC F301—Rural Sociology....3
PSY F370—Drugs and Drug Dependence....3
SWK F103—Introduction to Social Work....3
SWK F320W—Rural Social Work....3
Approved electives**....6 or more

Note: Designed for students interested in leadership for healthy communities, management of rural health programs and issues of community healing and wellness. Students learn principles and practices of community wellness, skills in financial and human resources management, and contemporary issues of importance in leading toward healthy communities. Graduates find employment with rural health corporations, tribal and municipal governments, educational institutions, and state and federal agencies.

Tribal and Local Government Administration

Complete 21 credits from the following:
ABUS F154—Human Relations....3
ABUS F179—Fundamentals of Supervision....3
ABUS F232—Contemporary Management Issues....3
ACCT F261—Accounting Concepts and Uses I....3
ACCT F262—Accounting Concepts and Uses II....3
ACCT F414—Governmental and Nonprofit Accounting....3
ANS F310—The Alaska Native Lands Settlement....3
ANS F350W,O—Cross-Cultural Communication: Alaskan Perspectives....3
ANS/PS F425—Federal Indian Law and Alaska Natives***....3
ANS/PS F450—Comparative Aboriginal Rights and Policies....3
BA F330—The Legal Environment of Business....4
COMM F330—Intercultural Communication....3
COMM F335O—Organizational Communication....3
CS F101—Computers and Society....3
ECON F351—Public Finance....3
ENGL F212—Business, Grant, and Report Writing....3
ENGL F314W,O/2—Technical Writing....3
JUST F340—Rural Justice in Alaska....3
NRM F204—Public Lands Law and Policy....3
NRM F430/F630—Resource Management Planning....3
PS F101—Introduction to American Government and Politics....3
PS F212—Introduction to Public Administration....3
PS F263—Alaska Native Politics***....3
PS/ANS F325—Native Self-Government....3
PS F403W—Public Policy....3
PS F462/NORS F662—Alaska Government and Politics....3
SOC/PSY F250—Introductory Statistics for Behavioral Sciences....3
SOC F407O—Work and Occupations....3
Approved electives**....3 or more

Note: Designed for students interested in development and operations of tribal and municipal governments in rural Alaska. Students develop an understanding of the history and constitutional basis for tribal governance, basics of federal Indian law, and principles and practices of self-determination. They develop skills in planning, budgeting, and human resources management. Graduates find employment with tribal and municipal governments and organizations, ANCSA corporations, and state and federal agencies.

6. Minimum credits required....120

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

** *Elective credits may also fulfill the humanities, social science or mathematics general requirements for the B.A. degree. Prerequisites are required for many of these courses; however, prerequisites do not apply to the credit requirement.*

*** *Recommended courses. Course substitutions may be made with approval of the faculty advisor.*

Minor

1. Complete the following:
   RD F300—Rural Development in a Global Perspective....3
   RD electives at the F200-level or above....15
2. Minimum credits required....18

RUSSIAN STUDIES

College of Liberal Arts
Department of Foreign Languages and Literatures
907-474-7396
www.uaf.edu/language/

B.A. Degree

Minimum Requirements for Degree: 120 credits

Students majoring in Russian studies are encouraged to spend one or two semesters on an exchange program in Russia.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following Russian studies core requirements:*
   RUSS F201—Intermediate Russian I....4
   RUSS F202—Intermediate Russian II....4
   RUSS F301W,O—Advanced Russian....3
   RUSS F302W,O—Advanced Russian....3
   RUSS F431—Studies in Russian Culture....3
   RUSS F432—Studies of Russian Literature....3
   RUSS F482—Selected Topics in Russian Literature....3
4. Complete 9 credits from the following Russian Studies electives:*
   ANTH F302—Ethnography of Siberia....3
   BA F460O—International Business....3
   ECON F463W—International Economics....3
   GEOG F306—Geography of Russia....3
   HIST F315—Europe: 1900 – 1945....3
   HIST F464—History of Russia....3
   PS F468W—Government and Politics of Russia....3
5. Minimum credits required....120

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

Note: BA F460 and ECON F463 are recommended for students who are planning to minor in business administration. Please contact the business administration department for prerequisites.

Minor

1. Complete the following:
   15 credits from the Russian studies core or an advisor-approved combination from the Russian studies core and Russian studies electives....15
2. Minimum credits required....15

SOCIAL WORK

College of Liberal Arts
Department of Social Work
907-474-7240
Chukchi Campus 907-442-3400
Kuskokwim Campus 907-543-4500
Northwest Campus 907-443-2201
www.uaf.edu/socwork/

B.A. Degree

Minimum Requirements for Degree: 123 credits

Graduates in social work qualify for beginning practice positions in child welfare, mental health, services for the aged, family agencies, youth programs, health services, Native corporations and other social agencies. Social work applies knowledge in the behavioral sciences to deal with the emotional and social problems of individuals, families and communities.

The curriculum includes a liberal arts base, foundation requirements in the behavioral sciences, and sequences in social policy and services, practice methods and field instruction. A major emphasis is the preparation of the student for beginning social work practice with rural and Alaska Native populations.

Students learn to work with people on a personal level and are placed in a social agency as part of their course work during the senior year. A Title IV-E entitlement grant provides stipends to senior students doing practicums in child protection.

Students wishing to focus on understanding the aging process from a social work perspective and working with older adults may specialize in gerontology. Majors will take SWK F342—Human Behavior in the Social Environment II, SWK F370—Services and Support for an Aging Society, and an approved elective with gerontology content. Students minoring in social work can choose either the general social work minor or a social work minor with a specialization in gerontology.

The UAF baccalaureate social work program is accredited by the Council on Social Work Education. This degree program is delivered collaboratively within the UA system.

Major — B.A. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete SOC F100X or ANTH F100X.) (As part of the core curriculum requirements, complete BIOL F100X, F103X, F115X, F116X, F111X, or F112X.)
2. Complete the B.A. degree requirements. (See page 135. As part of the B.A. degree requirements, complete ANS/ANTH F242 and PSY F101.)
3. Compete the following program (major) requirements:*
   a. Complete the following:
      SWK F103—Introduction to Social Work 3
      SWK F220—Ethics, Values and Social Work Practice.....3
      SWK F305O—Social Welfare History.....3
      SWK F306—Social Welfare: Policies and Issues 3
      SWK F320W—Rural Social Work 3
      SWK F341—Human Behavior in the Social Environment I.....3
      SWK F342—Human Behavior in the Social Environment II 3
      SWK F375W—Research Methods in Social Work 3
      SWK F460—Social Work Practice I 3
      SWK F461—Practicum in Social Work I** ..... 3 or 6
      SWK F463—Social Work Practice II 3
      SWK F464—Practicum in Social Work II** ..... 3 or 6
      SWK F466—Practicum in Social Work III** ..... 3 or 6
   b. Complete two courses from the following special problems areas:
      HUMS F205—Basic Principles of Group Counseling 3
      HUMS F305—Substance Abuse Counseling 3
      SWK F310—Fetal Alcohol Spectrum Disorder 3
      SWK F330—Seminar in International Social Work 3
      SWK F350W—Women's Issues in Social Welfare and Social Work Practice 3
      SWK F360—Child Abuse and Neglect.....3
      SWK F370—Services and Support for an Aging Society 3
      SWK F470—Substance Abuse Theories and Treatment.....3
      SWK F484—Seminar in Social Work Practice Areas.....3
4. Minimum credits required.....123

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

** *Students must complete a total of 12 credits of practicum, and students must take SWK F461 (Practicum I) and SWK F464 (Practicum II) for at least 6 of these credits. SWK F466 (Practicum III) is an option for students who have completed SWK F461 and SWK F464 for less than 12 credits.*

*** *Students wishing to specialize in gerontology should take SWK F342, SWK F370 and an approved elective from the following list:*
ANS F401—Cultural Knowledge of Native Elders
ANTH F315—Human Biology
ANTH F317—Human Growth and Development
COMM F462 —Communications in Health Contexts
SOC F310—Sociology of Aging

Minor

1. Complete the following:
   SWK F103—Introduction to Social Work.....3
   SWK F220—Ethics, Values and Social Work Practice.....3
2. Complete three SWK designated courses, excluding SWK F460, F461, F463 and F464 9
3. Minimum credits required.....15

Minor with Specialization in Gerontology

1. Complete the following:
   SWK F103—Introduction to Social Work.....3
   SWK F220—Ethics, Values and Social Work Practice.....3
   SWK F342—Human Behavior in the Social Environment II 3
   SWK F370—Services and Support for an Aging Society 3
2. Choose one course from the list of courses with aging content:
   ANS F401—Cultural Knowledge of Native Elders.....3
   ANTH F315—Human Biology.....3
   ANTH F317—Human Growth and Development.....3
   COMM F462—Communication in Health Contexts 3
   SOC F310— Sociology of Aging.....3
3. Minimum credits required.....15

SOCIOLOGY

College of Liberal Arts
Department of Sociology
907-474-5494
www.uaf.edu/sociology/

B.A., B.S. Degree

Minimum Requirements for Degrees: 120 credits

Sociology is a scientific discipline that teaches us about ourselves and the groups of which we are a part. The sociological perspective equips the graduate with critical thinking and analytical problem-solving skills necessary for a variety of careers. A person with a sociology undergraduate degree can apply sociology in any work environment, including human services, government, business, community activism and public health agencies. The sociology

department also prepares individuals to pursue graduate studies in sociology or professional programs for careers in law, medicine, business, education and social policy.

Major — B.A. or B.S. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. or B.S. degree requirements. (See page 135 and page 136. As part of the baccalaureate core requirements, complete SOC 100X.)
3. Complete the following program (major) requirements:*
   SOC F201—Social Problems 3
   SOC F263—Social Inequality and Stratification....3
   SOC F303—Early Sociological Thought 3
   SOC F308—Race and Ethnic Relations....3
   SOC F373W—Research Methods in the Social Sciences....3
   SOC F490—Capstone Seminar....3
4. Complete one course from the following research methods:
   SOC/PSY F250—Introductory Statistics for the Behavioral Sciences....3
   STAT F200X—Elementary Probability and Statistics 3
   SOC/PSY F480W—Qualitative Social Science Research....3
5. Complete 12 credits* from the following electives:**
   SOC F202—Sociology of Popular Culture 3
   SOC F242—The Family: A Cross-Cultural Perspective....3
   SOC F301—Rural Sociology....3
   SOC F307O—Demography 3
   SOC F309—Urban Sociology 3
   SOC F310—Sociology of Aging....3
   SOC/WMS F320—Sociology of Gender 3
   SOC/PSY F330—Social Psychology....3
   SOC/PSY F333/WMS F332—Human Sexualities Across Cultures....3
   SOC F335—Deviance and Social Control 3
   SOC/ED F345—Sociology of Education....3
   SOC F350W—Childhood and Society 3
   SOC F405O—Social Movements and Social Change 3
   SOC F407O—Work and Occupations....3
   SOC F435—Sociology of Law 3
   SOC F440O—Environmental Sociology 3
   SOC F460—Global Issues in Sociological Perspective....3
   SOC/PSY F480W—Qualitative Social Science Research....3
6. Minimum credits required....120

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

** *Courses from this group not used toward the major may be applied toward B.A. general degree requirements where applicable.*

Minor

1. Complete the following:
   SOC F201—Social Problems 3
   SOC electives 15
2. Minimum credits required....18

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 131. 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 136. 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—Introduction to Real Analysis....3
   MATH F402—Intermediate Real Analysis....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 F435—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 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.

TECHNOLOGY

Office of Interdisciplinary Programs
907-474-7716

B.T. Degree

Minimum Requirements for Degree: 120 credits

This program offers qualified applicants the opportunity to expand upon their vocational/technical education.

The interdisciplinary studies B.T. degree allows exceptional students to tailor a bachelor's degree program to their unique needs. Information and advising for this degree is through the Office of the Graduate School and Interdisciplinary Programs.

Major — B.T. Degree

1. Complete the general university requirements (page 131).
2. Complete the following B.T. degree requirements.
   ENGL F314W,O/2—Technical Writing 3
   MATH/CS/STAT elective at the F100-level.....3
   TTCH F301—Technology and Society 3
   Computer competency 3
   Specialty Electives.....6
   (Advisor approved upper-division internship or advanced technical experience.)
3. Complete 30 credits of interdisciplinary studies approved by a faculty committee.*
4. Complete 30 credits at UAF (either completed in residence or accepted by transfer as equivalent to specific UAF courses) from one of the following areas of specialization:
   a. An associate of applied science degree from an accredited institution of higher education. In general, the name of the degree shall be bachelor of technology.
   b. Substitute one of the following qualifications in an applied or technical field with the approval of the Curricular Affairs Committee of the Faculty Senate:
   • A.A.S. or similar degree earned at a non-accredited institution, deemed appropriate by the faculty.
   • State or federal certification deemed appropriate by the faculty.
   • Journeyman status in trades and industry, deemed appropriate by the faculty.
5. Minimum credits required 120

* *Student must earn a C grade or better in each course.*
See Interdisciplinary Studies in the degrees program section.
Note: At least 39 credits must be F300-level or above.

THEATRE

College of Liberal Arts
Department of Theatre
907-474-6590
907-474-7751 Ticket Office
907-474-7048 Fax
www.uaf.edu/theatre/

B.A. Degree

Minimum Requirements for Degrees: 120 credits

The theatre department teaches basic and advanced courses in theatre arts, technology and appreciation. The department recognizes the importance of the role of fine arts within the humanities program of a liberal arts education. Courses in theatre help develop a student's sense of self worth while encouraging independent, original and creative thinking.

Classes and productions are open to theatre majors and minors and students in other fields. These experiences provide unique opportunities for creative expression and development when coupled with other programs.

Major — B.A. Degree

Concentrations: Design/Technical Theatre, Directing, Film, Performance

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements:*
   THR F101—Theatre Practicum (2)
   or THR F201—Theatre Practicum (2)
   or THR F301—Theatre Practicum (2)
   or THR F401—Theatre Practicum (2).....2
   THR F121—Fundamentals of Acting 3
   THR F190—Audition or Portfolio Review Participation.....0
   THR F191—Audition or Portfolio Review Participation.....0
   THR F215—Dramatic Literature 3
   THR F241—Basic Stagecraft.....4
   THR F254—Costume Design and Construction I.....3
   THR F290—Audition or Portfolio Review Participation II 0
   THR F291—Audition or Portfolio Review Participation II 0
   THR F411W—Theatre History I 3
4. Complete one of the following concentrations:*

   Design/Technical Theatre

   a. Complete the following:
   THR F332—Directing Theatre 3
   b. Complete one of the following:
   THR F220—Voice and Diction for the Theatre 3
   THR F221—Intermediate Acting.....3
   THR F225—Movement for the Actor 3
   THR/FLM F310—Acting for the Camera 3
   THR/FLM F331—Directing Film/Video 3
   c. Complete a minimum of 12 credits of the following:
   THR/FLM F245—Stage and Film Production Management 3
   THR F247—Introduction to Theatrical Design.....3
   THR/FLM F271—Let's Make a Movie 3
   THR/FLM F334W—Movies and Films; Watching and Analyzing 3
   THR F341—Intermediate Stagecraft.....3

THR F343—Scene Design 3
THR/FLM F347O—Lighting Design 3
THR F348—Sound Design for the Entertainment Industry.....3
THR F351—Makeup for Theatre.....3
THR F355—History of Fashion and Dress.....3
THR F413W—Playscript Analysis.....3
THR F416W—Performance Studies Abroad 6
THR F417—Internship in Theatre Practice.....1 – 6
THR F447—Lighting Design II 3
THR F456—Advanced Topics in Costume Design and Construction.....3
THR F499—Thesis Project.....3

Directing

a. Complete one of the following:
THR/FLM F334W—Movies and Film 3
THR F341—Intermediate Stagecraft.....3
THR F343—Scene Design 3
THR/FLM F347O—Lighting Design 3
THR F348—Sound Design for the Entertainment Industry.....3
THR F351—Makeup for Theatre.....3
THR F355—History of Fashion and Dress.....3
THR F456—Advanced Topics in Costume Design and Construction.....3
b. Complete the following:
THR/FLM F245—Stage and Film Production Management 3
THR F247—Introduction to Theatrical Design.....3
THR F332—Directing Theatre 3
THR F413W—Playscript Analysis.....3
c. Complete a minimum of 3 credits of the following:
THR F220—Voice and Diction for the Theatre 3
THR F221—Intermediate Acting.....3
THR F225—Movement for the Actor.....3
THR/FLM F271—Let's Make a Movie 3
THR/FLM F310—Acting for the Camera 3
THR F331—Directing Film/Video.....3
THR F416W—Performance Studies Abroad 6
THR F417—Internship in Theatre Practice.....1 – 6
THR F410—Styles Acting.....3
THR/FLM F470—Advanced Film and Video Directing 3

Film & Multimedia

a. Complete the following:
THR/FLM F271—Let's Make a Movie 3
THR/FLM F310—Acting for the Camera 3
THR/FLM F331—Directing Film/Video.....3
THR/FLM F470—Advanced Film and Video Directing 3
b. Complete two of the following:
THR/FLM F245—Stage and Film Production Management 3
THR F247—Introduction to Theatrical Design.....3
THR/FLM F334W—Movies and Films.....3
THR/FLM F347O—Lighting Design 3
THR F348—Sound Design for the Entertainment Industry.....3
THR F413W—Playscript Analysis.....3
THR F416W—Performance Studies Abroad 6
THR F417—Internship in Theatre Practice.....1 – 6
THR F499—Thesis Project.....3

Performance

a. Complete the following:
THR F220—Voice and Diction for the Theatre 3
THR F221—Intermediate Acting.....3
THR F321—Advanced Acting 3
THR F332—Directing Theatre 3
b. Complete one of the following:
THR F247—Introduction to Theatrical Design.....3
THR F341—Intermediate Stagecraft.....3
THR F343—Scene Design 3
THR/FLM F347O—Lighting Design 3
THR F348—Sound Design for the Entertainment Industry.....3
THR F351—Makeup for Theatre.....3
THR F355—History of Fashion and Dress.....3
THR F413W—Playscript Analysis.....3
c. Complete a minimum of 3 credits from the following:
THR F225—Movement for the Actor.....3
THR/FLM F271—Let's Make a Movie 3
THR/FLM F310—Acting for the Camera 3
THR F416W—Performance Studies Abroad 6
THR F417—Internship in Theatre Practice.....1 – 6
THR F410—Styles Acting.....3
THR F499—Thesis Project.....3

5. Minimum credits required.....120

Minor

1. Complete the following:
THR F121—Fundamentals of Acting.....3
THR F215—Dramatic Literature 3
THR F241—Basic Stagecraft.....4
THR electives* 8

2. Minimum credits required.....18

* *No more than 5 credits in theatre practicum may be applied to the minor. The minor program requires the approval of a member of the theatre faculty in advance of formally declaring the minor, preferably no later than the first semester of the junior year.*

Note: Production participation requirement — Theatre, being a collaborative art, is dependent on the participation of people in all aspects of theatrical production: acting, designing, crew work, box-office, publicity, directing, etc. For this reason, students majoring or minoring in theatre are expected to participate actively and continuously in the production activities of the theatre department throughout their academic career at UAF. Theatre majors are required to take three credits of theatre practicum and are encouraged to take it for elective credits as well. Theatre majors and minors are expected to attend all theatre department "Town Meetings" and to talk regularly with a theatre department faculty member (an advisor) regarding their participation so that they may plan a working course of action to fulfill this requirement.

See Film Studies.

WILDLIFE BIOLOGY AND CONSERVATION

College of Natural Science and Mathematics
Department of Biology and Wildlife
907-474-7671
www.bw.uaf.edu

B.S. Degree

Minimum Requirements for Degree: 130 credits

The undergraduate wildlife program provides basic education and training. This degree is designed for students whose objective is to accomplish the research needed to provide additional information on wild animal populations, their habitat and habitat-animal relationships. This degree is also for students whose primary interests involve interpreting, applying or disseminating research findings, rather than their acquisition. A wildlife B.S. degree is appropriate for students contemplating careers in wildlife agency administration, in developing and implementing wildlife management plans and in public information and education. The curriculum provides a solid foundation for graduate study and meets requirement for certification by The Wildlife Society.

The geographic location of the university is particularly advantageous for the study of wildlife biology. Spruce forest, aspen-birch forest, alpine tundra, bogs and several types of aquatic habitats are within easy reach. Studies can be made in many other habitats ranging from the dense forests of southeastern Alaska to arctic tundra.

Adequate study collections of plants and animals are available, and a 2,000-acre study area is near the campus. Wildlife biology students have ample opportunity for close association with the personnel of the Alaska Cooperative Fish and Wildlife Research Unit, Institute of Arctic Biology and several local offices of the federal and state conservation agencies. These agencies often provide support for graduate student projects, and program faculty usually hire a number of students for summer field work. Thus, an unusually good opportunity is available for students to gain experience and to make job connections.

Major — B.S. Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete COMM F141X.)
2. Complete the B.S. degree requirements (page 136).
3. Complete the following program (major) requirements:*
   a. Complete the following:
   BIOL F115X—Fundamentals of Biology I*** 4
   BIOL F116X—Fundamentals of Biology II***....4
   BIOL F239—Introduction to Plant Biology....4
   BIOL F271—Principles of Ecology....4
   BIOL F310—Animal Physiology 4
   BIOL F317—Comparative Anatomy of Vertebrates 4
   BIOL F331—Systematic Botany....4
   BIOL F362—Principles of Genetics....4
   BIOL F425—Mammalogy....3
   BIOL F426W,O/2—Ornithology....3
   ENGL F314W,O/2—Technical Writing (3)
   or ENGL F414W—Research Writing (3)....3
   NRM F101—Natural Resources Conservation and Policy 3
   NRM F204—Public Lands Law and Policy (3)
   or NRM F407—Environmental Law (3)....3
   WLF F101—Survey of Wildlife Science 1
   WLF F201—Wildlife Management Principles....3
   WLF F303W—Wildlife Management Techniques....3
   WLF F410—Wildlife Populations and Their Management....3
   WLF F460—Wildlife Nutrition....4
   b. Complete at least one of the following:
   BIOL F471—Population Ecology 3
   WLF F433—Conservation Genetics....3
   WLF F469O—Landscape Ecology and Wildlife Habitat....
   3 Complete the following:
   CHEM F105X—General Chemistry** 4
   CHEM F106X—General Chemistry** 4
   MATH F200X—Calculus (4)**
   or MATH F272X—Calculus for Life Sciences (3)**....3 – 4
   PHYS F103X—College Physics 4
   STAT F200X—Elementary Probability and Statistics (3)***
   or STAT F300—Statistics (3)***....3
   STAT F401—Regression and Analysis of Variance***....4
   c. Complete three of the following:
   BIOL F303—Principles of Metabolism and Biochemistry....4
   BIOL F406—Entomology....4
   BIOL F427—Ichthyology 3
   BIOL F441W,O/2—Animal Behavior....3
   BIOL F472W—Community Ecology....3
   BIOL F473W—Limnology....4
   BIOL F474—Plant Ecology....4
   BIOL F481—Principles of Evolution....3
   NRM F312—Introduction to Range Management 3
   NRM F338—Introduction to Geographic
   Information Systems....3
   NRM F435—GIS Analysis 4
   NRM F370—Introduction to Watershed Management 3
   NRM F380W—Soils and the Environment 3
   NRM F450—Forest Management....3
   WLF F305—Wildlife Diseases....3
   WLF F419O/2—Waterfowl and Wetlands Ecology and
   Management 4
4. Complete electives
5. Minimum credits required....130

* *Student must earn a C grade or better in each course.*
** *Satisfies a core requirement.*
*** *Satisfies a B.S. degree requirement.*

Note: B.S. degree candidates are strongly urged to obtain work experience in wildlife-related positions with public resource agencies or private firms. Faculty members can help students contact potential employers.

Requirements for biology teachers (grades 7 – 12):*

1. Complete all the requirements of the wildlife biology B.S. degree.
2. All prospective biology teachers must complete the following:
   BIOL F342—Microbiology 4
   BIOL F481—Principles of Evolution....4
   BIOL F303—Principles of Metabolism and Biochemistry (4) or
   CHEM F321 and CHEM F322—Organic Chemistry (6) ....4 – 6
3. All prospective science teachers must complete the following:
   PHIL F481—Philosophy of Science (3)....3

* *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. Above requirements apply to all candidates who apply to the UAF School of Education Spring 2006 or later, for licensure in biology.*

Minor*

1. Complete the following:
   WLF F303W—Wildlife Management Techniques....3
   WLF F410—Wildlife Populations and Their Management....3
   WLF F460—Wildlife Nutrition....4
   Approved BIOL and WLF electives*....6
2. Minimum credits required....15

* *Only biology or wildlife electives that are not required for the student's major.*

Note: Prerequisites for required courses include BIOL F115X-F116X, BIOL F271, BIOL F310, STAT F200X or F300, and WLF F201. Depending upon a student's major, some of these prerequisites may satisfy the 6 elective credits in biology and wildlife required for this minor.

WOMEN'S AND GENDER STUDIES

College of Liberal Arts
907-474-6249
www.uaf.edu/women/

Minor only

Women's and gender studies offers an interdisciplinary minor focusing on women, girls, and historical and contemporary experiences related to femaleness. In addition, the minor offers students the opportunity to study multiple issues related to gender, such as masculinities, femininities and sexualities. In addition to an introductory course and a theory course focusing on women's studies, the minor draws from a variety of other disciplines, including: Alaska Native studies, anthropology, communication, education, English, foreign languages, history, journalism, justice, linguistics, literature, music, philosophy, political science, psychology, social work and sociology. The particular strength of the program lies in its interdisciplinarity, its wide diversity of course offerings and its inquiry into gender issues. The multiple voices and perspectives provide broad understanding of diverse issues related to both women and gender. The minor helps students prepare for a wide variety of personal and career pursuits as gender issues and women are involved in every aspect of human experience.

Minor

1. Complete the following:
   WMS F201—Introduction to Women's and Gender Studies.....3
2. Complete at least 12 additional credits from courses cross-listed with WMS [and that are from two or more disciplines,] subject to the approval of a Women's Studies advisor.....12
3. Minimum credits required.....15

YUP'IK LANGUAGE AND CULTURE

College of Liberal Arts
Department of Alaska Native Languages
907-543-4500 or 907-474-7874
www.uaf.edu/anlc/classes.html
Program available at Kuskokwim Campus only

B.A. Degree

Minimum Requirements for Degree: 120 credits

The Yup'ik language and culture, or Yupiit Nakmiin Qaneryaraat Piciryaraat-llu, program strives to reinforce a Yup'ik identity that is centrally dependent on the language and culture, prepares the student for success in the world, and leads to acceptance at home. The program is based on the philosophy that a strong command of the Yup'ik language leads to a complete understanding of the Yup'ik way of life, the world around us, and our place in it.

Depending on interest, students in the program are encouraged to complete a minor in education or Alaska Native and rural development.

Major — B.A. Degree

1. Complete the general university requirements (page 131).
2. Complete the B.A. degree requirements (page 135).
3. Complete the following program (major) requirements.*
   a. Complete one of the following sequences:
      ESK F221—Intermediate CY Apprenticeship 1.....3
      ESK F222—Intermediate CY Apprenticeship 2.....3
      ESK F223—Intermediate CY Apprenticeship 3.....3
      or
      ESK F204—Conversational Central Yup'ik IV 3
      ESK F205—Regaining Fluency in Yup'ik 3
      ESK F206—Regaining Fluency in Yup'ik 3
      or
      ESK F240—Introduction to Reading Yup'ik.....3
      ESK F250—Yup'ik Literature for Children.....3
      ESK F251—Teaching Yup'ik Reading and Writing.....3
   b. Complete the following:
      ESK F130—Beginning Yup'ik Grammar.....3
      ESK F208—Yup'ik Composition.....3
      ESK F375 O—Yup'ik Philosophy and Spirituality (Umyuarteqsaraq).....3
      ESK F330 W—Central Yup'ik Literature (Yupiit Quliraitnek Igaryaraq).....3
      ESK F488 W—Documenting Cultural and Oral Traditions (Caliarkaq).....3
   c. Complete two of the following:
      ANL F287—Teaching Methods for Alaska Native Languages...3
      ANL F288—Curriculum and Materials Development for Alaska Native Languages.....3
      ANS F111—History of Alaska Natives 3
      ANS/ANTH F242—Native Cultures of Alaska 3
      ANS/ANTH F320—Language and Culture.....3
      ESK F230 —Introduction to Interpreting and Translating.....3
      ESK F231—Introduction to Interpreting and Translating II 3
      ESK F240—Introduction to Reading Yup'ik.....3
      ESK F250—Yup'ik Literature for Children.....3
      ESK F251—Teaching Yup'ik Reading and Writing.....3
      LING F402—Second Language Acquisition.....3
      LING F410—Theory and Methods of Language Teaching.....3
      LING F450O—Language Policy and Planning.....3
4. Minimum credits required.....120

* *Student must earn a C or better in each course.*

Pre-Professional Opportunities

UAF students may develop a program of study that prepares them for a variety of professional or graduate programs. Pre-professional advising provides information about groundwork for admission to a specific graduate program or professional school.

CHIROPRACTIC

Pre-Professional Advising
907-474-6396

Chiropractors diagnose and treat patients whose health problems are associated with the body's muscular, nervous and skeletal systems, especially the spine. Chiropractors believe that interference with these systems impairs the body's normal functions and lowers its resistance to disease. The chiropractic approach to health care is holistic, stressing the patient's overall health and wellness. It recognizes that many factors affect health, including exercise, diet, rest, environment and heredity. Chiropractors provide natural, drugless, nonsurgical health treatments and rely on the body's inherent recuperative abilities.

Completion of a chiropractic program typically results in a doctor of chiropractic (D.C.) degree. Schools generally accept students who have completed at least 90 credits of college level work. A bachelor's degree can often be completed at the chiropractic school on the way to earning the D.C. degree. Expect to spend at least three years in an undergraduate program and four years at a chiropractic school.

Admission is competitive, so take advantage of any course work or experience that may give you an advantage. Make sure that you at least meet the minimum GPA and prerequisite requirements for every school you apply to.

Admission requirements vary by school. While chiropractic schools tend to be consistent in their prerequisites, it is important to check for the admission requirements of the specific school that you are interested in.

Many UAF students choose to major in either biological sciences or chemistry while pursuing a pre-chiropractic curriculum. Since students are not required to complete a degree for admission, choosing a major is up to each student. Having a basic understanding of what is required for a UAF bachelor's degree, and following the recommendations to some extent, can benefit the student if goals change and a bachelor's degree becomes necessary.

Students who are considering becoming chiropractors should contact their major department or the Academic Advising Center to be assigned an academic advisor. See www.uaf.edu/advising/preprof/chiropractic/ for detailed information on preparing for chiropractic school while at UAF.

DENTISTRY

Pre-Professional Advising
907-474-6396

Dentistry is concerned with the prevention, diagnosis and treatment of oral disease and disorders. Professional dental study typically involves a four-year program of graduate classroom instruction, lab work and hands-on patient treatment. Students who want to specialize within the field may pursue advanced training at the post-doctoral level. Specialists and general dentists must be licensed by the state before practicing.

While a definite pre-dentistry curriculum is not required for admission to dental school, students planning to apply should include specific courses in their undergraduate studies. At UAF, these are biology (BIOL F115X and F116X), chemistry (CHEM F103X and F104X, or F105X and F106X), organic chemistry with lab (CHEM F321, F322, and F324), and physics (PHYS F103X and F104X). Some schools suggest additional science course work in areas such as anatomy and physiology (BIOL F111X and F112X).

Dental schools expect students to have a broad general background in the social sciences and humanities. Some dental schools accept applicants after their third year of undergraduate work, but the majority of students entering dental school have completed a bachelor's degree. A strong undergraduate academic record and high scores on the Dental Admission Test (DAT) are desirable for admission.

Students who are considering dentistry as a career should contact the Academic Advising Center. An academic advisor will help students plan an appropriate undergraduate program and explore professional schools, licensing requirements and financial aid. See www.uaf.edu/advising/preprof/dentistry/ for detailed information on preparing for dental school while at UAF.

LAW

Pre-Professional Advising
907-474-6396

Law education prepares students to become attorneys, judges, public servants, teachers or administrators in government or the private sector. Attorneys are concerned with the interpretation of law and its application to specific situations. This involves in-depth research, writing reports and briefs, advising clients and representing parties in the courts.

Law school consists of three years of graduate-level study. Instruction includes classroom lectures and discussion, considerable research and practice of courtroom procedures. Law school graduates must pass a state bar exam in order to practice.

Completion of a bachelor's degree is required for admission to most law schools. Students should have a strong academic record and high scores on the Law School Admission Test (LSAT). While law schools do not prescribe a specific undergraduate major for admission, a liberal arts education is the best preparation. Students planning a legal career should select courses that enhance oral and written communication skills, expand understanding of human values and institutions, and develop analytical reasoning and logical thinking. English, philosophy, history, literature and the social sciences are valuable areas of pre-law study. Courses in accounting and economics are helpful as well. Recent trends indicate that students with an undergraduate degree in the natural sciences and engineering are gaining in favor for law school admission.

Students interested in a legal career can obtain assistance through the Academic Advising Center for discussing program planning, professional schools and financial planning. See www.uaf.edu/advising/preprof/law/ for detailed information on preparing for law school while at UAF.

LIBRARY SCIENCE

Pre-Professional Advising
907-474-6396

A graduate degree in library and information science prepares students for professional positions in the management of information in libraries and other environments. According to one graduate program description, the "contemporary librarian has become an essential part of the complex communication/information network that now encircles the globe. Today's information professional must understand how information is created and disseminated in society; must be familiar with print, non-print, and electronic media; and must be adept in the use of computers, automated techniques, and information networks."

One to two years of graduate course work in a broad spectrum of areas is generally required for a professional career in library science. The program covers planning and evaluation related to acquiring, organizing and accessing information in library settings. Students also learn to manage, design and deliver information services. Some programs may offer special emphasis on topics such as law or medicine.

Library schools prepare professionals from a variety of academic backgrounds. The caliber of the applicant's undergraduate work and results of the Graduate Record Exam are important considerations for acceptance to a professional library studies program.

At UAF, pre-library science students pursue an extensive general undergraduate education. Courses in computer applications and programming, statistics and foreign languages help to satisfy the demands and admission requirements of graduate programs in library science. A background in the social and physical sciences is equally important as the number of specialized libraries increases. Advisement for students interested in library science is available through the Academic Advising Center. See www.uaf.edu/advising/preprof/libraryscience/ for more information.

MEDICINE

Pre-Professional Advising
907-474-7608 or 474-6396

Physicians serve a broad range of medical functions. They diagnose disease, prescribe treatment, supervise patient care and participate in the improved delivery of health services. Many physicians branch off into basic and applied medical research, teaching or administration.

Professional medical education consists of four years of graduate-level study. Typically, the first two years of medical school are composed of classroom instruction and laboratory work, and the second two years consist of clinical rotations. Medical school graduates may elect to continue their training in a one-year internship and/or a one- to three-year residency. The residency option is required in order to specialize in medicine.

Medical schools evaluate each applicant's overall academic achievement together with results of the Medical College Admission Test (MCAT). While medical schools do not require a specific undergraduate major, they generally expect applicants to have a foundation in biology, chemistry and physics. UAF courses that satisfy this are biology (BIOL F115X and F116X), chemistry (CHEM F103X and F104X, or F105X and F106X), organic chemistry with lab (CHEM F321, F322, and F324), and physics (PHYS F103X and F104X). Other science course work such as anatomy and physiology (BIOL F111X and F112X), as well as a background in the social sciences and humanities, is not usually required for admission but can strengthen a pre-med curriculum. Medical schools will consider applicants for admission after their third year of undergraduate work, but most entering medical students have completed a bachelor's degree.

Students who are considering medicine as a career choice should contact the dean of the College of Natural Science and Mathematics or the Academic Advising Center. An academic advisor will help the student with pre-med program advisement, exploration of professional schools and licensing requirements, and financial planning. See www.uaf.edu/advising/preprof/medicine/ for more information.

OCCUPATIONAL THERAPY

Pre-Professional Advising
907-474-7608 or 474-6396

Occupational therapists help patients improve their ability to perform tasks in living and working environments. They work with individuals who suffer from a mentally, physically, developmentally or emotionally disabling condition. Occupational therapists use treatments to develop, recover or maintain the daily living and work skills of their patients. The therapist helps clients not only to improve their basic motor functions and reasoning abilities, but also to compensate for permanent loss of function. The goal is to help clients have independent, productive and satisfying lives.

Students interested in pursuing a degree in occupational therapy should gain experience working or volunteering alongside a licensed occupational therapist. Many schools require that students have an understanding of what is involved and have shown the motivation to obtain some experience in the field. Any work experience (paid or unpaid) in an occupational therapy setting will help expose you to the field.

Admission to an occupational therapy program is competitive, so take advantage of any course work or experience that may give you an added advantage. Admission is based upon several factors including overall academic achievement (most requiring a 3.0 GPA minimum), and work experience in health-care situations. Requirements vary by school, so check with the admissions offices for several schools where you are interested in applying.

Take the Graduate Record Exam prior to starting the last year of your undergraduate work. Prepare for the GRE by getting a study guide or taking a preparation course. GPA and GRE scores are often the first items that a school uses to narrow the pool of applicants.

Most OT schools offer either a master's degree, combined bachelor's and master's degree, or doctoral degree. For a combined master's/bachelor's program, general courses may be completed at UAF prior to transferring to the OT school. For entry into a master's or doctoral program, a bachelor's degree must be completed first.

Most OT schools do not require that students complete a specific major, however, all require students to complete specific prerequisites.

Admission requirements vary by school. It is important to check the admission requirements of the specific school that you are interested in to be sure that you will meet all of the prerequisites.

Students considering a career in occupational therapy should contact the Academic Advising Center or the department of their intended major. See www.uaf.edu/advising/preprof/occupationaltherapy/ for detailed information on preparing for occupational therapy school while at UAF.

PHARMACY

Pre-Professional Advising
907-474-6396

Pharmacists play a vital health care role. Pharmacists are drug experts whose responsibilities include a range of care for patients, from dispensing medications to maximizing patients' response to drugs.

Most schools with pharmacy programs offer a doctoral degree. The degree requires six years to complete, the first two of which are spent pursuing pre-pharmacy general education requirements (completed at the intended pharmacy school or transferred to that school); the last four years encompass pharmacy courses and professional preparation taken in residence at a pharmacy school.

Admission to a pharmacy school is competitive, so take advantage of any course work or experience that may give you an added edge. A minimum GPA is required by some schools, but attaining the minimum does not guarantee admission. Prerequisite courses typically required before being admitted to a pharmacy program include general chemistry with lab (CHEM F105X, F106X), organic chemistry with lab (CHEM F321, F322 and F324), physics (PHYS F103X and F104X), mathematics (MATH F107X, F108, F200X, and/or F201X) and English (ENGL F111X, F211X/F213X) among others. Careful planning is necessary because course requirements differ among schools.

Students considering a career as a pharmacist can learn more at www.uaf.edu/advising/preprof/pharmacy/ and should see an academic advisor in the Academic Advising Center.

PHYSICAL THERAPY

Pre-Professional Advising
907-474-6396

Physical therapists are dedicated to the promotion of health and the prevention of disease. Specifically, they provide assessment, evaluation and rehabilitation of the muscular, skeletal and nervous systems after injury or disease. Physical therapists work in hospital rehabilitation units, in private rehabilitation practices, and in orthopedic and sports medicine clinics. Many also serve as administrators, researchers and educators.

Physical therapy education typically consists of a two-year program leading to a certificate, a bachelor's or a master's degree. The current trend across the nation is toward the master's, which requires completion of a bachelor's degree before admission. As in most health care professions, the first half of physical therapy training consists of classroom instruction and the second half emphasizes clinical practice. After completion of programs accredited by the American Physical Therapy Program, students are eligible to test for licensure in all 50 states.

Acceptance to physical therapy programs is very competitive and is based on overall academic performance (most require a minimum 3.0 GPA), achievement in foundational sciences, and work experience in health care. Graduate programs usually require the Graduate Record Examination. UAF does not prescribe a specific pre-physical therapy major, but offers a complete series of courses required for admission to most graduate programs. These include general biology (BIOL F115X, F116X), general chemistry (CHEM F105X, F106X), physics (PHYS F103X, F104X), anatomy and physiology (BIOL F111X and F112X), and statistics (STAT F200X). Careful planning is necessary, as course requirements differ among schools.

Students considering a career in physical therapy should contact the Academic Advising Center. An academic advisor will help plan a program of study and explore professional schools and licensing requirements. See www.uaf.edu/advising/preprof/physicaltherapy/ for more information.

PHYSICIAN ASSISTANT

Pre-Professional Advising
907-474-6396

Physician assistants are health care professionals licensed to practice medicine with physician supervision. As part of their comprehensive responsibilities, PAs conduct physical exams, diagnose and treat illnesses, order and interpret tests, counsel on preventive health care, assist in surgery, and in most states can write prescriptions.

Becoming a PA typically requires a master's degree, and a bachelor's degree is usually required to be admitted to a program. Some schools offer programs that allow students to finish a bachelor's degree while working toward the Master's of Physician Assisting. Becoming a certified PA will take at least 5-6 years of college.

Admission to PA school is competitive, so take advantage of any course work or experience that may give you an added edge. Most schools require or strongly recommend health care experience as a prerequisite. To be considered for admission, students should take the Graduate Record Exam and complete a curriculum that includes general chemistry (CHEM F105X, F106X), general biology (BIOL F115X, F116X), anatomy and physiology (BIOL F111X, F112X), microbiology (BIOL F342), entry-level, developmental and abnormal psychology (PSY F101, F240, F345), as well as English (F111X, F211X or F213X). Careful planning is necessary because course requirements differ among schools.

Students considering a career as a physician's assistant can learn more at www.uaf.edu/advising/preprof/physicianassistant/ and should see an academic advisor in the Academic Advising Center.

VETERINARY MEDICINE

Pre-Professional Advising
907-474-6396

Veterinary medicine is concerned with two primary areas: the first is the diagnosis, prognosis, treatment and prevention of animal health problems; and the second is protection of the public from animal borne disease through food safety inspection and other methods. Veterinarians also work in the fields of research and education.

A professional program in veterinary medicine generally requires four years of graduate study. In the first three years, students gain a solid foundation through classroom instruction and laboratory work. The final year consists of clinical rotations. Specialization within veterinary medicine requires further study at the post-doctoral level.

Although a bachelor's degree is not required for admission into veterinary school, most entering students have completed a four-year undergraduate degree. Veterinary schools will consider applicants from all disciplines, but because specific course requirements vary among schools, students must be sure to check the admission standards of the school they are interested in. In general, pre-veterinary students should include the following undergraduate courses: introductory chemistry (CHEM F105X, F106X), organic chemistry (CHEM F321, F322, F324), biochemistry (CHEM F451, F452), biology (BIOL F115X, F116X, F342, F362, F418), statistics (STAT F200X), and physics (PHYS F103X, F104X).

Admission to veterinary school is based on the strength of the applicant's undergraduate academic record and test scores on either the Veterinary College Admissions Test or the Graduate Record Examination. Work experience in veterinary medicine is highly recommended.

Advising for students considering veterinary medicine as a career choice is available through the Academic Advising Center. See www.uaf.edu/advising/preprof/vetmedicine/ for more information.