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Art major Joel Isaak, center, gets some help filling a mold with molten bronze in the UAF Fine Arts Complex as part of the process of creating a life-sized sculpture for his senior thesis.

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 page 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- grade or higher in courses required for your major. Some majors require higher GPAs for major course work.

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 Office of Admissions and the Registrar.

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 page 38.)

TABLE 19 **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- in courses required for major. Some majors require higher GPAs for major course work.
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 Office of Admissions and the Registrar or online at the registrar website. A change of major becomes effective after it is processed by the Office of Admissions and the Registrar. 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 and bachelor of arts and sciences degrees require a minor. You must satisfactorily complete the requirements for a minor before a BA or BAS degree can be awarded. A minor is optional for bachelor of science, bachelor of business administration, and bachelor of emergency management 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 BA and BAS 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 Office of Admissions and the Registrar by the beginning of the senior year.

SECOND BACHELOR'S DEGREE

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

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

DOUBLE DEGREES

Students who want to earn more than one UAF bachelor's degree must complete all general requirements as well as all major and minor requirements (if any) for all degrees. At least 24 semester credit hours beyond the total required for the first degree need to be earned before any additional degrees can be awarded. For two degrees completed at the same time, students 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 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

TABLE 20 DIFFERENCES BETWEEN DOUBLE MAJORS AND DOUBLE DEGREES

	Double Majors	Double Degrees
Degree(s) earned	One bachelor's degree is earned. The bachelor of arts (BA) degree requires the completion of two majors rather than a major and a minor. Majors are selected from those approved for the BA degree. The bachelor of science (BS) degree requires the completion of a double major instead of a single major. Majors are selected from those approved for the BS degree.	More than one bachelor's degree is earned. Can be the same degree (e.g. two BAs) or different degrees, (e.g., BA and BS, BBA and BS, BFA and BA, 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.

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 Office of Admissions and the Registrar or online at the registrar website. Forms need to be returned to the Office of Admissions and the Registrar with required signatures of approval. The Office of Admissions and the Registrar 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 Office of Admissions and the Registrar. 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 Office of Admissions and the Registrar.

- **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 Office of Admissions and the Registrar. 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 Office of Admissions and the Registrar 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 Office of Admissions and the Registrar. 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 BA 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 BAS 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 BBA degree is the undergraduate equivalent of an MBA. 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 BEM degree prepares students for professional careers responding to natural and man-made disasters, forming crisis management plans and insuring public safety. Students with backgrounds ranging from first responders and military to applied vocational skills will graduate ready to start or advance in careers in emergency management, homeland security, public safety and emergency services.

- **Bachelor of Fine Arts**

The BFA degree has a rigorous curriculum designed to prepare talented students for professional careers in the arts.

- **Bachelor of Music**

The BM degree encourages acquisition of skills and display of talent in music, with special emphasis on aesthetic performance and understanding.

- **Bachelor of Science**

The BS 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 BT 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's degree requirements see Table 21. 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. Students must earn a C- grade or higher in each course used toward the baccalaureate core.

Requirements	Credits
Communication	9
ENGL F111X—Introduction to Academic Writing (3) <i>ENGL F190H may be substituted.</i>	
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) <i>*No credit may be earned for more than one of MATH F107X or F161X.</i>	
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) <i>*Or any math course having one of these as a prerequisite</i> <i>**No credit may be earned for more than one of Math F200X, F262X or F272.</i>	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 F101X—Biology of Sex (4) • BIOL F103X—Biology and Society (4) • BIOL F104X—Natural History (4) • BIOL F115X—Fundamentals of Biology I (4) • BIOL F116X—Fundamentals of Biology II (4) • BIOL F120X—Introduction to Human Nutrition (4) • BIOL F213X—Human Anatomy and Physiology I (4) • BIOL F214X—Human Anatomy and Physiology 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 F106X—Life and the Age of Dinosaurs (4) • GEOS F112X—History of Earth and Life (4) • GEOS F120X—Glaciers, Earthquakes and Volcanoes (4) • GEOS F125X—Humans, Earth and Environment (4) • MSL F111X—The Oceans (4) • PHYS F102X—Energy and Society (4) • PHYS F103X—College Physics (4) • PHYS F104X—College Physics (4) • PHYS F115X—Physical Science I (4) • PHYS F175X—Astronomy (4) • PHYS F211X—General Physics (4) • PHYS F212X—General Physics (4) • PHYS F213X—Elementary Modern Physics (4)	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 BA 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) excluding developmental math (DEVM) courses.	3

Complete one of the following:

- Minor complex* at least 15
- Foreign/Alaska Native language/American Sign language option 12 – 18
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)

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 may be used to fulfill the BA degree requirements in humanities, social sciences or mathematics. Courses used to fulfill requirements for a minor 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 (AAS) 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 (BA) 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 BS requirements in addition to the core:	
Natural sciences	8
• 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.	
Mathematics	3
• 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 (excluding developmental math DEVM courses).	
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 may be used to fulfill the BS degree requirements in mathematics or natural science. Courses used to fulfill requirements for a minor 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 BS 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 BS degree under the following circumstances:

1. You must declare your minor before the beginning of your final semester in the BS degree program. You need to complete a Declaration of Minor form and file it with the Office of Admissions and the Registrar by the end of registration.
2. Any minor approved for the BA degree may serve as a minor for the BS degree. All general and specific requirements for minors are the same as those listed for BA 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 BS degree will be awarded. The minor will be listed on your transcript along with the BS 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 higher 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	39 – 40
(BA F323X—Business Ethics must be included in the courses used to meet the Perspectives on the Human Condition requirement.)	
Complete the following BBA 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	12
• STAT F200X—Elementary Probability and Statistics (3)	
• ECON F201—Principles of Economics I: Microeconomics (3)	
• ECON F202—Principles of Economics II: Macroeconomics (3)	
• ECON F227—Intermediate Statistics for Economics and Business (3)	
Common Body of Knowledge	31 – 34
• AIS F101—Effective Personal Computer Use OR demonstrated computer literacy (0 – 3)	
• ACCT F261—Principles of Financial Accounting (3)	
• ACCT F262—Principles of Managerial Accounting (3)	
• 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)	
Major complex*	at least 27 – 30
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 BEM degree prepares students for professional careers responding to natural and man-made disasters, forming crisis management plans and insuring public safety. Students with backgrounds ranging from first-responders and military to applied vocational skills graduate ready to start or advance in careers in emergency management, homeland security, public safety and emergency services.

BACHELOR OF FINE ARTS

BFA general requirements are the same as the requirements for the BA degree except a minor is not required for the BFA.

BACHELOR OF MUSIC

See Music in the Bachelor's Degree Programs section.

BACHELOR OF TECHNOLOGY

The BT degree program offers qualified applicants the opportunity to expand upon their vocational or technical education. An AAS 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 21 **SUMMARY OF
BACHELOR'S
DEGREE RE-
QUIREMENTS**

	To be completed by all. See your degree requirements (e.g. BBA) 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 See individual degree programs for the writing and oral intensive core requirements	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 (excluding DEVM courses)
Natural Sciences	Complete any two (4-credit) courses. ATM F101X—4 cr BIOL F100X—4 cr BIOL F101X—4 cr BIOL F103X—4 cr BIOL F104X—4 cr BIOL F115X—4 cr BIOL F116X—4 cr BIOL F120X—4 cr BIOL F213X—4 cr BIOL F214X—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 F106X—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 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	Students must earn a C- or higher in courses used toward the baccalaureate core requirements.	*BFA general requirements are the same as the requirements for the BA degree except a minor is not required for the BFA
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	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	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 F410 W/O/2, ED F486 O/2 and HIST F461 W
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 (excluding DEVM courses). A 3-credit calculus course must be included in core or BS 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—3 cr (MATH F262X must be taken to meet the core math requirement.)		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 BS 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		Electives—at least 7 cr
At least 78 cr	At least 30 cr		At least 27 – 30 cr	85 or more cr	At least 56 cr
Optional: at least 15 cr	Optional: at least 15 cr		Optional: at least 15 cr		At least 15 cr
120 cr	120 cr	120 cr	120 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/

BBA Degree

Minimum Requirements for Degree: 120 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 Collegiate 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 — BBA 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 BBA degree requirements. (See page 137. As part of the common body of knowledge, complete AIS F316.)
3. Complete one of the following*: ENGL F314W, O/2 or BA F456W or HSEM F445W, 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 F401—Advanced Accounting.....	3
ACCT F452W—Auditing.....	3
ACCT F472W—Internal and Government Auditing.....	3
5. Complete three of the following*:

ACCT F404—Advanced Cost Accounting and Controllershship	3
ACCT F414O/2—Governmental and Nonprofit Accounting.....	3
ACCT F430—Advanced Taxes	3
ACCT F472W—Advanced Auditing.....	3

6. Complete free electives as needed to meet 120 credits
7. Minimum credits required120

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

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

Minor

1. Complete the following*:

ACCT F261—Principles of Financial Accounting.....	3
ACCT F262—Principles of Managerial Accounting.....	3
Upper-division accounting electives	9
2. Minimum credits required15

* Students 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 Liberal Arts
Alaska Native Languages Program
907-474-7874
www.uaf.edu/anlc/

Minor only

The Alaska Native Languages 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 AAS 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
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2. Minimum credits required15

ALASKA NATIVE STUDIES

College of Rural and Community Development
Department of Alaska Native Studies and Rural Development
907-474-5405
www.uaf.edu/danrd/

BA Degree

Minimum Requirements for Degree: 120 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 North American society. The BA degree can be earned on the Fairbanks campus or through distance delivery.

Students complete a concentration in one of four areas: Alaska Native Forms of Cultural Expression, Alaska Native Education, Alaska Native Language, Alaska Native Law, or Government and Politics.

The Alaska Native studies BA 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.

Special application requirements and deadlines apply for distance BA programs. For more information contact the department toll-free at 800-770-9531 or visit www.uaf.edu/danrd/.

Major — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA degree requirements (page 135).
3. Complete the following:*
4. Complete 9 ANS/RD elective credits.....9
5. Complete 21 credits in one of the following concentrations (These are recommended courses. Course substitutions may be made with approval of the faculty advisor):*

Alaska Native Education

ANL F315—Alaska Native Languages: Eskimo-Aleut.....	3
ANL F316—Alaska Native Languages: Indian Languages.....	3
ANS F102—Orientation to Alaska Native Education.....	2
ANS F111—History of Alaska Natives	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/ANTH F320W—Language and Culture: Application to Alaska	3
ANS/ENGL F340—Contemporary Native American Literature	3
ANS F348W—Native North American Women.....	3
ANS F351—Practicum in Native Cultural Expression	1 – 3
ANS F370—Issues in Alaska Bilingual and Multicultural Education.....	1
ANS/ED F420—Alaska Native Education.....	3
ANS F461—Native Ways of Knowing	3
ANS F475—Alaska Native Social Change	3
RD F110—ANCSA: Land Claims in the 21st Century	1

RD F265—Perspectives on Subsistence in Alaska.....	3
RD F470/F670—ANCSA Pre-1971 to present	3
Alaska Native Forms of Cultural Expression	
ANL F315—Alaska Native Languages: Eskimo-Aleut.....	3
ANL F316—Alaska Native Languages: Indian Languages.....	3
ANS F111—History of Alaska Natives	3
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/ANTH F320W—Language and Culture: Application to Alaska	3
ANS/ENGL F340—Contemporary Native American Literature	3
ANS F347—Voices of Native American Peoples.....	3
ANS F348W—Native North American Women	3
ANS/ENGL F349—Narrative Art of Alaska Native Peoples (in English translation)	3
ANS F351—Practicum in Native Cultural Expression	1 – 3
ANS F360—Advanced Native Dance	1
ANS F361—Advanced Alaska Native Performance	3
ANS/ART F365—Native Art of Alaska	3
ANS F381W—Alaska Natives in Film	3
ANS F461—Native Ways of Knowing	3
RD F265—Perspectives on Subsistence in Alaska.....	3
RD F470/F670—ANCSA Pre-1971 to present	3

Alaska Native Language (not available at all campus locations)

Complete two years study of an Alaska Native language (16 credits) and choose 6 credits from the following:*	
ANL F255—Introduction to Alaska Native Languages: Eskimo-Aleut	3
ANL F256—Introduction to Alaska Native Languages: Indian Languages	3
ANL F287—Teaching Methods for Alaska Native Languages.....	3
ANL F288—Curriculum and Materials Development for Alaska Native Languages	3
ANL F315—Alaska Native Languages: Eskimo-Aleut.....	3
ANL F316—Alaska Native Languages: Indian Languages.....	3
ANS F202X—Aesthetic Appreciation of Alaska Native Performance**.....	3
ANS F300W—Alaska Native Writers Workshop.....	3
ANS/ANTH F320W—Language and Culture: Application to Alaska	3
ANS F370—Issues in Bilingual and Multicultural Education.....	3
ANS F461—Native Ways of Knowing	3

Alaska Native Law, Government and Politics

ANS F111—History of Alaska Natives	3
ANS F250—Current Alaska Native Leadership Perspectives.....	3
ANS/RD F315—Tribal Peoples and Development.....	3
ANS/ANTH F320W—Language and Culture: Application to Alaska	3
ANS/PS F325—Native Self-Government	3
ANS F348W—Native North American Women	3
ANS/PS F425—Federal Indian Law and Alaska Natives.....	3
ANS/PS F450—Comparative Aboriginal Rights and Policies.....	3
ANS F475—Alaska Native Social Change	3
ANS F461—Native Ways of Knowing	3
ENGL F414W—Research Writing.....	3
PLS F280—Legal Research and Writing for Paralegals.....	3
PS F263—Alaska Native Politics	3
RD F110—ANCSA: Land Claims in the 21st Century	1
RD F265—Perspectives on Subsistence in Alaska.....	3
RD F300—Rural Development in a Global Perspective	3
RD F470/F670—ANCSA Pre-1971 to present.....	3
TM F201—Advanced Tribal Government	3

6. Minimum credits required120
- * Students must earn a C- grade or better in each course.
- ** ANS F202X may not be counted toward an Alaska Native Studies major if used to fulfill core requirements.

Minor***

1. Complete the following:
 - ANS F300- or F400-level course3
 - ANS F401—Cultural Knowledge of Native Elders3
 - Alaska Native Studies electives.....9
 2. Minimum credits required15
- *** All minor programs must be approved by the Alaska Native Studies and Rural Development department head.

AMERICAN SIGN LANGUAGE

College of Rural and Community Development
Community and Technical College
907-455-2808
www.ctc.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 III3
 - ASLG F204 – American Sign Language IV3
 - ASLG F205 – American Sign Language V3
 - ASLG F110 – American Sign Language Practice**1
 2. Minimum credits required15
- * 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 BA 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/

BA, BS Degrees

Minimum Requirements for Degrees: BA: 120 credits;
BS: 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 — BA Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements complete ANTH F100X*.)
 2. Complete the BA degree requirements (page 135).
 3. Complete the following program (major) requirements:*
 - a. Complete the following:
 - ANTH F211—Fundamentals of Archaeology (3)
 - or ANTH F221—Fundamentals of 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 required120
- * Students must earn a C- grade or better in each course.
- Note: LING F101 satisfies part of the BA humanities requirements.

Major — BS Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements complete ANTH F100X*.)
 2. Complete the BS degree requirements (page 136).
 3. Complete the following program (major) requirements:*
 - a. Complete the following:
 - ANTH F211—Fundamentals of Archaeology3
 - 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 Theory3
 - ANTH F423—Human Origins.....3
 - ANTH F424—Analytical Techniques3
 - c. Complete one of the following:
 - ANTH F309—Circumpolar Archaeology3
 - ANTH F315—Human Variation.....3
 - d. Complete one of the following:
 - ANTH F415—Zooarchaeology and Taphonomy.....3
 - ANTH F422—Human Osteology3
 - e. Complete at least 2 of the following electives:**
 - ANTH F426—Bioarchaeology3
 - ANTH F428—Ecological Anthropology3
 - ANTH F492—Seminar: Physical Anthropology3
 - ANTH F492—Seminar: Archaeology3
 4. Minimum credits required130
- * Students 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 required18

ARCTIC SKILLS

College of Rural and Community Development
Department of Emergency Services and Public Safety
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

- 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
 - Minimum credits required 15
- * Approved by program manager.

ART

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

BA, BFA Degrees

Minimum Requirements for Degrees: BA: 130 credits;
BFA: 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 BFA 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 BFA 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 BFA graduates include artist, designer, arts administrator, art teacher, gallery and museum administrator, and computer-related fields.

Major — BA Degree

- Complete the general university requirements (page 131).
- Complete the BA degree requirements (page 135).
- Complete the following program (major) requirements:
 - 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
 - Complete two of the following:
ART F161—Two-Dimensional Design 3
ART F162—Color and Design 3
ART F163—Three-Dimensional Design 3

- 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
 - Complete three upper-division courses from one of these areas:
Ceramics 9
Computer Art 9
Drawing 9
Metalsmithing 9
Native Studio Art 9
Painting 9
Printmaking 9
Sculpture 9
 - Upper-division art history 3
- Minimum art credits required for major 39
 - Minimum credits required 130
- * Students must earn a C- grade or better in each course.
Note: Transfer students who are candidates for the BA degree or a BFA in art must complete a minimum of 18 credits in art while in residence.

Major — BFA Degree

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

- Complete the general university requirements (page 131).
 - Complete the BFA degree requirements (page 137).
 - Complete the following program (major) requirements:
 - 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
 - Complete two of the following:
ART F161—Two-Dimensional Design 3
ART F162—Color and Design 3
ART F163—Three-Dimensional Design 3
 - Complete one of the following:
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
 - Complete the following:
Upper-division art history** 9
Major program approved by BFA thesis committee*** 30
Upper-division art electives 6
Thesis project 3
 - Minimum credits required 130
- * Students 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 BA degree or a BFA 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

- Complete the following:*
ART F105—Beginning Drawing.....3
ART F262—History of World Art.....3
ART F365—Native Art of Alaska.....3
- Complete one of the following:*
ART F161—Two-Dimensional Design.....3
ART F162—Color and Design.....3
ART F163—Three-Dimensional Design.....3
- Complete one of the following:*
ART F201—Beginning Ceramics.....3
ART F211—Beginning Sculpture.....3
ART F268—Beginning Native Art Studio.....3
- 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
- Minimum credits required18
* Students must earn a C- grade or better in each course.

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

ARTS AND SCIENCES

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

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

Major — BAS Degree

- 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.)
- Complete the following BAS 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.

- 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
- 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 Nonfiction 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
- 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
- Complete creative expression course or courses from applied courses in music, theatre, photography or art.3
- Complete the following understanding diversity and culture requirements:
ANTH F242—Native Cultures of Alaska3
Course selected from a list developed by the review committee.....3
- Complete the following senior seminar requirements:
LAS F410W,O/2—Scientific Research3
ED F486O/2—Media Literacy3
- Complete the following technology requirement:
ED F237—Technology Tools for Teachers..... 0.5 – 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.
- Complete the following Praxis test requirement:
BAS 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 required120

* Students 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 BAS degree program, at least 39 credits must be taken in upper-division (F300- and F400-level) courses. Courses taken to fulfill the BAS 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

- Complete 15 credits in approved Asian studies courses:*
 - 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
 - a. Department of Geography
 - GEOG F311W—Geography of Asia 3
 - b. 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
 - c. Department of Philosophy
 - PHIL F202—Introduction to Eastern Philosophy 3
 - d. Department of Political Science
 - PS F464W—East Asian Governments and Politics 3
 - 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

BA, BS Degrees

Minimum Requirements for Degrees: 120 credits

Biological sciences is an appropriate major for students interested in the science of life. Programs in these fields provide a broad education and a foundation in the basic principles of biology. Graduates are employed in environmental science, health services, biology education, and as field and laboratory technicians. Graduates may also pursue advanced MS, pharmacology, nursing, MD or PhD degrees. Biology faculty advisors can help students choose courses that will best fit their goals.

Biological sciences majors may pursue either a BA or BS degree. Because biology is an interdisciplinary science, both programs include course work in the physical sciences and mathematics. The BA requires fewer credits in biology and more credits in the social sciences

and humanities than the BS degree, which focuses more intensively on biological science. The BS degree without a concentration provides the most comprehensive education in biology. The BS degree with a concentration permits some degree of specialization in one of three sub-disciplines: cell and molecular biology, physiology, or ecology and evolutionary biology.

Incoming students who do not meet the prerequisites for Fundamentals of Biology I (BIOL F115X) and those who did not complete a biology course in high school are encouraged to take a biology course for non-majors such as Biology and Society (BIOL F103X) or Natural History of Alaska (BIOL F104X) and General Chemistry I and II (CHEM F105X and CHEM F106X) during their first year, and to begin the BIOL F115X and F116X series in their sophomore year. Students unprepared for General Chemistry I (CHEM F105X) should take Basic General Chemistry (CHEM F103X) during their first year, and begin both the General Chemistry (CHEM F105X and F106X) and Fundamentals of Biology Series (BIOL F115X and F116X) during their sophomore year.

Students majoring in the biological sciences must complete a capstone project during their junior or senior year. The goal of the capstone experience is to integrate skills and information students have learned in previous courses by conducting a mentored research project and communicating the results. To fulfill the capstone requirement, a student may take either a designated capstone course or complete a mentored research project with a faculty member and petition the Biology and Wildlife chair to have this research experience count toward the capstone requirement. Biology course credit for mentored research may be obtained by completing BIOL F490, F397, or F497. More information about the capstone requirement is posted on the Biology and Wildlife website (www.bw.uaf.edu). Students are strongly encouraged to speak to a biology advisor well before their senior year about how they plan to satisfy the capstone requirement.

Major — BA Degree

- Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: CHEM F105X* and F106X*.)
- Complete the BA degree requirements (page 135). As part of the BA degree requirements, complete STAT F200X*. As part of the humanities and social sciences requirement, take at least 9 credits of upper-division course work. As part of the minor, take at least 3 credits of upper-division course work.
- 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 F260—Principles of Genetics 4
 - BIOL F481—Principles of Evolution 4
 - CHEM F321—Organic Chemistry 4
 - PHYS F103X—College Physics 4
- b. Complete two of the following three biology breadth requirements:**
 - BIOL F310—Animal Physiology (4)
or BIOL F342—Microbiology (4)
or BIOL F434W—Structure and Function of Vascular Plants (4)
or BIOL F213X and F214X—Human Anatomy and Physiology I and II (8) 4 – 8
 - BIOL F360—Cell and Molecular Biology 3
 - BIOL F371—Principles of Ecology 4
- c. Complete three elective courses from course lists A, B, C or D below, at least one of which is designated a W course.*** If possible, satisfy all UAF core requirements for W and O courses and the biology capstone requirement with these elective courses.

- d. Complete a biology capstone project (no credit requirement):
The capstone requirement can be met through a petition following the completion of a mentored research project with a faculty member (e.g., by taking BIOL F490, or BIOL F497, or without course credits), or by completing at least one of the following courses:
BIOL F403W—Metabolism and Biochemistry (4)
or BIOL F434W—Plant Structure and Function of Vascular Plants (4)
or BIOL F441W,O/2—Animal Behavior (3)
or BIOL F472W—Community Ecology (4)
or BIOL F473W—Limnology (3) 3 – 4

4. Minimum credits required120

Major — BS Degree without concentration

- 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*.)
- Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete STAT F200X* or STAT F300* and PHYS F103X* and PHYS F104X*.)
- Complete the following program (major) requirements:

BIOL F115X—Fundamentals of Biology I	4
BIOL F116X—Fundamentals of Biology II	4
BIOL F260—Principles of Genetics	4
BIOL F360—Cell and Molecular Biology	3
BIOL F371—Principles of Ecology	4
BIOL F310—Animal Physiology (4)	
or BIOL F342—Microbiology (4)	
or BIOL F213X and F214X—Human Anatomy and Physiology I and II (8)	
or BIOL F434W—Structure and Function of Vascular Plants (4)	4 – 8
BIOL F481—Principles of Evolution	4
CHEM F321—Organic Chemistry I (4)	
and either CHEM F322—Organic Chemistry II (3)	
or CHEM F451—General Biochemistry — Metabolism (3) ...	3 – 4
- Complete the following electives (at least one must satisfy the W requirement):***
Organismal elective:
Complete one additional course from list D 3 – 4
Biology electives:
Complete four additional courses at the 200 level or above, at least three of which must be from lists A, B, C or D.....2 – 16
- Complete a biology capstone project (no credit requirement):
The capstone requirement can be met through a petition following the completion of a mentored research project with a faculty member (e.g., by taking BIOL F490, or BIOL F497, or without course credits), or by completing at least one of the following courses:
BIOL F403W—Metabolism and Biochemistry (4)
or BIOL F434W—Structure and Function of Vascular Plants (4)
or BIOL F441W,O/2—Animal Behavior (3)
or BIOL F472W—Community Ecology (4)
or BIOL F473W—Limnology (3)
- Minimum credits required120

Major — BS Degree with concentration

- 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*.)
- Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete STAT F200X* or STAT F300* and PHYS F103X* and PHYS F104X*.)

- Complete the following program (major) requirements:

BIOL F115X—Fundamentals of Biology I	4
BIOL F116X—Fundamentals of Biology II	4
BIOL F260—Principles of Genetics	4
BIOL F310—Animal Physiology (4)	
or BIOL F434W—Structure and Function of Vascular Plants (4)	
or BIOL F342—Microbiology (4)	
or BIOL F213X and F214X—Human Anatomy and Physiology I and II (8)	4 – 8
BIOL F481—Principles of Evolution	4
CHEM F321—Organic Chemistry I (4)	
and either CHEM F322—Organic Chemistry II (3)	
or CHEM F451—General Biochemistry — Metabolism (3) ...	3 – 4
 - Complete one of the following concentrations:***.
(When choosing courses to fulfill concentration requirements, students should consider the university requirement for two W courses and one O course, and the departmental requirement for a capstone project.)
 - Cell and Molecular Biology**
 - As part of the program requirements, complete CHEM F321.
 - Complete the following (at least one of which must satisfy the W requirement):

BIOL F360—Cell and Molecular Biology	3
CHEM F450—General Biochemistry — Macromolecules	3
CHEM F451—General Biochemistry — Metabolism	3

Cell and molecular and physiology electives:
Take three additional courses from lists A or B,
at least one of which must be from list A..... 9 – 12
Biology breadth elective:
Take one additional course from lists C or D 3 – 4
 - Physiology**
Complete the following (at least one of which must satisfy the W requirement):
BIOL F360—Cell and Molecular Biology3
Physiology or cell and molecular biology electives:
Take two courses from list A and two from list B.....12 – 16
Biology breadth elective:
Take one additional course from lists C or D 3 – 4
Biology elective:
Take one additional course from lists A, B, C or D 3 – 4
 - Ecology and Evolutionary Biology**
Complete the following (at least one of which must satisfy the W requirement):
BIOL F371—Principles of Ecology
- Complete a biology capstone project (no credit requirement):
The capstone requirement can be met through a petition following the completion of a mentored research project with a faculty member (e.g., by taking BIOL F490, or BIOL F497, with or without course credits), or by completing at least one of the following courses:
BIOL F403W—Metabolism and Biochemistry (4)
or BIOL F434W—Structure and Function of Vascular Plants (4)
or BIOL F441W,O/2—Animal Behavior (3)
or BIOL F472W—Community Ecology (4)
or BIOL F473W—Limnology (3) 3 – 4
- Minimum credits required120

Biology elective course lists:****

- **List A — Cell and Molecular Biology**
 - BIOL F342—Microbiology3
 - BIOL F360—Cell and Molecular Biology.....3
 - BIOL F403W—Metabolism and Biochemistry.....4
 - BIOL F417O—Neurobiology3
 - BIOL F462O—Concepts of Infectious Disease3
 - BIOL F465—Immunology3
 - CHEM F322—Organic Chemistry II.....3
 - CHEM F450—General Biochemistry — Macromolecules.....3
 - CHEM F451—General Biochemistry — Metabolism3
 - CHEM F470—Cellular and Molecular Neuroscience.....3
 - CHEM F474—Neurochemistry3
- **List B — Physiology**
 - BIOL F310—Animal Physiology.....4
 - BIOL F317—Comparative Anatomy4
 - BIOL F335—Epidemiology.....3
 - BIOL F342—Microbiology4
 - BIOL F417O—Neurobiology.....3
 - BIOL F422—Physiology and Ecology of Overwintering3
 - BIOL F434W—Structure and Function in Vascular Plants.....4
 - BIOL F441W,O/2—Animal Behavior.....3
 - BIOL F455W,O—Environmental Toxicology.....3
 - BIOL F457W,O—Environmental Microbiology3
 - BIOL F458—Vertebrate Endocrinology3
 - BIOL F459O/2—Wildlife Nutrition4
 - BIOL F462O—Concepts of Infectious Disease3
 - BIOL F465—Immunology3
- **List C — Ecology and Evolutionary Biology**
 - BIOL F371—Principles of Ecology4
 - BIOL F418—Biogeography3
 - BIOL F422—Physiology and Ecology of Overwintering3
 - BIOL F433—Conservation Genetics.....3
 - BIOL F441W,O/2—Animal Behavior.....3
 - BIOL F457W—Environmental Microbiology3
 - BIOL F462O—Concepts of Infectious Disease3
 - BIOL F469O—Landscape Ecology and Wildlife Habitat3
 - BIOL F471—Population Ecology3
 - BIOL F472W—Community Ecology3
 - BIOL F473W—Limnology3
 - BIOL F474—Plant Ecology4
 - BIOL F476O—Ecosystem Ecology3
 - BIOL F483—Stream Ecology3
 - BIOL F485—Global Change Ecology.....3
 - BIOL F486—Vertebrate Paleontology.....3
 - BIOL F487—Conceptual Issues in Evolutionary Biology3
 - BIOL F488—Arctic Vegetation Ecology: Geobotany3
 - BIOL F489—Vegetation Description and Analysis.....3
 - WLF F301—Design of Wildlife Studies.....3
 - WLF F410—Wildlife Populations and their Management3
- **List D — Organismal Biology**
 - BIOL F301—Biology of Fishes.....4
 - BIOL F305—Invertebrate Zoology.....4
 - BIOL F317—Comparative Anatomy4
 - BIOL F331—Systematic Botany4
 - BIOL F406—Entomology4
 - BIOL F418—Biogeography4
 - BIOL F425W—Mammalogy.....3
 - BIOL F426W,O/2—Ornithology3
 - BIOL F427—Ichthyology4
 - BIOL F486—Vertebrate Paleontology.....3
 - BIOL F489—Vegetation Description and Analysis.....3

Minor

1. Complete the following program (minor) requirements:*
 - BIOL F115X—Fundamentals of Biology I.....4
 - BIOL F116X—Fundamentals of Biology II4
 - BIOL F260—Principles of Genetics.....4

2. Complete one of the following course options:****
 - BIOL F213X and F214X—Human Anatomy and Physiology I and II (8)
 - or BIOL F310—Animal Physiology (4)
 - or BIOL F342—Microbiology (4)
 - or BIOL F360—Cell and Molecular Biology (3)
 - or BIOL F371—Principles of Ecology (4)
 - or BIOL F434W—Structure and Function of Vascular Plants (4)
 - or BIOL F481—Principles of Evolution (4) 3 – 8
 3. Complete one additional course in biology at the 200-level or above 3
 4. Minimum credits required 18
 - * Students must earn a C or better in each course.
 - ** Because biology breadth courses for the BA degree serve as prerequisites for many upper-division biology electives, course choices should be made with consideration of the elective biology courses the student plans to complete.
 - *** Independent study (BIOL F397 or F497) or research experience (URSA F388 and F488, and BIOL F490) courses may be substituted by petition for a maximum of two required elective courses in biology (3 – 4 credits of independent study or research per substituted course). The subject area of the independent study or research will determine which biological subject areas the credits satisfy.
 - **** Courses that satisfy upper-division elective credit may require prerequisites in addition to the required biology course.
- Note: A foreign language is encouraged by the department in meeting requirements of the core curriculum.

BUSINESS ADMINISTRATION

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

BBA 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 — BBA Degree

Concentrations: Finance, General Business, and 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 one oral intensive course designated (O) and one oral intensive designated (O/2), or complete two oral intensive courses designated (O), or complete three oral intensive courses designated (O/2).
3. Complete the BBA degree requirements. (See page 137. As part of the Common Body of Knowledge, complete AIS F310.)
4. Complete the following:*
 - BA F151—Introduction to Business.....3
 - ENGL F314W,O/2—Technical Writing3

5. Complete the following program (major) requirements:*
 - BA F307—Introductory Human Resource Management.....3
 - ECON F321—Intermediate Microeconomics (3)
or ECON F351—Public Finance.....3
 - BA F460O—International Business (3)
or BA F461—International Finance (3)
or ECON F463W—International Economics (3).....3
 6. Complete an additional 6 credits from ACCT, BA or ECON6
 7. 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 Fund3
 - 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. **Marketing**
Complete four of the following:
 - BA F241—Advertising, Sales and Promotion.....3
 - BA F436—Consumer Behavior.....3
 - BA F445W—Marketing Research3
 - BA F490—Services Marketing3
 - BA F491—Current Topics in Marketing.....3
 8. Minimum credits required120
- * Students 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 BBA 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 finance, general business or marketing.

Minor*

Finance

1. Complete the following:
 - ACCT F261—Principles of Financial Accounting.....3
 - BA F151—Introduction to Business.....3
 - BA F325—Financial Management.....3
 - ECON F201—Principles of Economics I: Microeconomics.....3
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 required15

General Business

1. Complete five 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.
2. Minimum credits required15

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 Law3
 - BA F325—Financial Management.....3
 - BA F330—The Legal Environment of Business.....4
 - BA F343—Principles of Marketing.....3
 - BA F360—Operations Management3

- BA F390—Organizational Theory and Behavior.....3
- ECON F201—Principles of Economics I: Microeconomics.....3
- 2. Minimum credits required15

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 Marketing3
 - BA F491—Current Topics in Marketing.....3
2. Minimum credits required15

Sports Management

1. Complete the following:
 - BA F280—Sports Leadership.....3
 - BA F281—Sports Management.....3
 2. Complete nine credit hours from the following:
 - ACCT F261—Principles of Financial Accounting.....3
 - AIS F310—Management of Information Systems3
 - 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 Development3
 - PSY F337W—Sports Psychology.....3
 - JRN F260—Sports Journalism3
 3. Minimum credits required15
- * 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/

BA, BS Degrees

Minimum Requirements for Degrees: 120 credits

Our programs prepare students for employment as research chemists in federal, state, municipal, academic or industrial laboratories, in pre-medicine, as laboratory technicians, as supervisors in industry, as technical sales personnel, and act as the technical base for teachers of chemistry. Graduates also find positions in the environmental sciences, oceanography and related interdisciplinary fields. Many chemistry graduates elect to pursue advanced MS, PhD, pharmacology or MD degrees.

The chemistry curriculum meets the American Chemical Society standards covering 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. The BS and BA programs may be completed without an optional concentration, or students can opt for an additional focus in biochemistry, environmental chemistry or forensic chemistry. The BS programs generally prepare students for a career in chemistry or biochemistry, or professional school. The BS in chemistry is an ACS-approved degree program. The environmental chemistry concentration provides courses that assist students to study the chemistry of the natural environment, adding geology, biology or atmospheric courses, and preparing students for graduate studies and/or careers in the environmental industry. The biochemistry concentration provides an

enhanced curriculum in biological chemistry for students seeking advanced careers in biochemistry, medicine or health sciences. The BA degree provides breadth in the curriculum for study of a minor subject and requires more humanities courses. The BA best prepares students for careers in chemistry-related fields like environmental law, forensic science, science education, anthropology, etc. Limited teaching assistantships are often available for upper-division students, which strengthen leadership and communication skills.

The bachelors degrees in chemistry and concentrations in biochemistry and environmental chemistry provide excellent research opportunities and background for undergraduate students through connection to corresponding graduate programs. See graduate programs in chemistry, biochemistry and molecular biology, and environmental chemistry.

The Chemistry and Biochemistry department is housed in the Reichardt Building, where laboratories are equipped with research-grade instrumentation, providing hands-on experience to students for entry into graduate school or industry. See the departmental website for more information, www.uaf.edu/chem/.

Major — BA 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 BA degree requirements. (See page 135. As part of the BA degree requirements, complete: MATH F201X.)
3. Complete the following program (major) requirements:

CHEM F105X—General Chemistry I.....	4
CHEM F106X—General Chemistry II.....	4
CHEM F202—Basic Inorganic Chemistry	3
CHEM F212—Chemical Equilibrium and Analysis	4
CHEM F321—Organic Chemistry I	4
CHEM F322—Organic Chemistry II (3)	3
or CHEM F451—Biochemistry (3).....	3
CHEM F324W—Advanced Organic Chemistry Laboratory (3)	3
or CHEM F314W—Analytical Instrumental Laboratory (3).....	3
CHEM F331—Physical Chemistry I	4
CHEM F481—Seminar	1
CHEM F482O—Seminar	2
4. Assure that you have satisfied the university requirement of 39 upper-division credits and two writing-intensive (W) courses, which will typically require either taking more upper-division chemistry courses or a significant number of upper-division courses in other disciplines, likely your minor.
5. Minimum credits required120

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

Note: This degree does not encompass the depth required to be an American Chemistry Society-approved chemistry degree. Students taking this course will not receive a certificate from ACS. Students intending to continue in chemistry or biochemistry careers or graduate studies should select a BS degree program.

Optional Concentration: 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 BA degree requirements. (See page 135. As part of the BA degree requirements, complete: MATH F201X.)
3. Complete the program (major) requirements as listed under chemistry BA degree, including:

CHEM F314W—Analytical Instrumental Laboratory	3
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4. Complete the following:

CHEM F332—Physical Chemistry II	4
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5. Earn a minor in justice using the following courses to complete the 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 required120

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

** JUST F300X may not be used to fulfill core ethics requirement.

Note: This degree does not encompass the depth required to be an American Chemistry Society-approved chemistry degree. Students taking this course will not receive a certificate from ACS. Students intending to continue in chemistry or biochemistry careers or graduate studies should select a BS degree program.

Major — BS Degree (American Chemistry Society-approved)

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

CHEM F105X—General Chemistry I.....	4
CHEM F106X—General Chemistry II.....	4
CHEM F202—Basic Inorganic Chemistry	3
CHEM F212—Chemical Equilibrium and Analysis	4
CHEM F321—Organic Chemistry I	4
CHEM F322—Organic Chemistry II	3
CHEM F324W—Advanced Organic Chemistry Laboratory	3
CHEM F331—Physical Chemistry I	4
CHEM F332—Physical Chemistry II	4
CHEM F434W—Chemistry Capstone Laboratory.....	3
CHEM F451—General Biochemistry — Metabolism	3
CHEM F481—Seminar	1
CHEM F482O—Seminar	2
CHEM F488—Undergraduate Chemistry and Biochemistry Research	3
MATH F202X—Calculus	4
4. Complete two of the following:

CHEM F402—Inorganic Chemistry.....	3
CHEM F450—General Biochemistry — Macromolecules	3
CHEM F314W—Analytical Instrumental Laboratory	3
5. Minimum credits required120

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

Note: Upon completing the required curriculum and fulfilling all general university requirements, the student will receive a certificate from the American Chemical Society indicating approval of his or her degree program.

Optional Concentrations: Biochemistry, Environmental Chemistry

Biochemistry

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 BS degree requirements. (See page 136. As part of the BS 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:

CHEM F105X—General Chemistry I.....	4
CHEM F106X—General Chemistry II.....	4
BIOL F115X—Fundamentals of Biology I.....	4
BIOL F116X—Fundamentals of Biology II	4

CHEM F202—Basic Inorganic Chemistry	3
CHEM F212—Chemical Equilibrium and Analysis	4
CHEM F321—Organic Chemistry I	4
CHEM F322—Organic Chemistry II	3
CHEM F331—Physical Chemistry I	3
CHEM F450—General Biochemistry — Macromolecules	3
CHEM F451—General Biochemistry — Metabolism	3
CHEM F481—Seminar	1
CHEM F482O—Seminar	2
CHEM F488—Undergraduate Chemistry and Biochemistry Research	6
4. Complete four of the following advanced chemistry/math courses:* **	
CHEM F323—Organic Chemistry Laboratory (1) or CHEM F324W—Advanced Organic Chemistry Laboratory (3)	3 – 4
CHEM F332—Physical Chemistry II	4
CHEM F434W—Chemistry Capstone Laboratory	3
CHEM F314W—Analytical Instrumental Laboratory	3
CHEM F402—Advanced Inorganic Chemistry	3
CHEM F420—NMR Spectroscopy of Natural Products	3
MATH F202X—Calculus III	4

Complete 10 credits of the following biology/biochemistry courses:* **

CHEM F360—Cell and Molecular Biology	4
CHEM F418W—Developmental Biology	3
CHEM F455W,O—Environmental Toxicology	3
CHEM F470—Cellular and Molecular Neuroscience	3
CHEM F474—Neurochemistry	3
BIOL F240—Beginnings in Microbiology	4
BIOL F260—Principles of Genetics	4
BIOL F310—Animal Physiology	4
BIOL F342—Microbiology	4
BIOL F402W—Biomedical and Research Ethics	3
BIOL F417O—Neurobiology	3
BIOL F453O/2—Molecular Biology	4
BIOL F462O—Concepts in Infectious Disease	3
BIOL F465—Immunology	3
5. Minimum credits required	120

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

** Courses selected under numbers 4 and 5 above must meet baccalaureate degree requirements for 39 upper-division credits and two writing-intensive courses.

Note: This degree is intended for students interested in careers in biochemistry or pre-professional students, providing extra depth in biological sciences. The selection of optional courses will determine if the curriculum conforms to the American Chemistry Society-approved chemistry degree. Students desiring an ACS-approved chemistry degree should consult with their advisor about optional courses that will meet ACS requirements.

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

Complete the following program (major) requirements:*

CHEM F105X—General Chemistry I	4
CHEM F106X—General Chemistry II	4
CHEM F202—Basic Inorganic Chemistry	3
CHEM F212—Chemical Equilibrium and Analysis	4
CHEM F314W—Analytical Instrumental Laboratory	3
CHEM F321—Organic Chemistry I	4
CHEM F322—Organic Chemistry II	3
CHEM F324W—Advanced Organic Chemistry Laboratory	3
CHEM F331—Physical Chemistry I	4

CHEM F332—Physical Chemistry II	4
CHEM F434W—Chemistry Capstone Laboratory	3
CHEM F481—Seminar	1
CHEM F482O—Seminar	2
CHEM F488—Undergraduate Chemistry and Biochemistry Research	3
MATH F202X—Calculus III	3

3. Complete two of the following:*

ATM F101X—Weather and Climate of Alaska	4
BIOL F115X—Fundamentals of Biology I	4
BIOL F116X—Fundamentals of Biology II	4
GEOS F101X—The Dynamic Earth	4
GEOS F262—Rocks and Minerals	3

4. Complete two of the following:*

ATM F401—Introduction to Atmospheric Science	3
BIOL F342—Microbiology	4
CHEM F406—Atmospheric Chemistry	3
CHEM F455W,O—Environmental Toxicology	3
GEOS F417—Introduction to Geochemistry	3
NRM F380W—Soils and the Environment	3

5. Minimum credits required

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

Note: A course in statistics (e.g. STAT F200X, STAT F300, or GEOS F430) is suggested. The selection of optional courses will determine if the curriculum conforms to the American Chemistry Society-approved chemistry degree. Students desiring an ACS-approved chemistry degree should consult with their advisor about optional courses that will meet ACS requirements.

Requirements for Chemistry Teachers (grades 7 - 12)

1. Complete all the requirements of the chemistry BA or BS degree.
2. All prospective science teachers must complete the following:
PHIL F481—Philosophy of Science

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 I
2. Complete the following:
CHEM F212—Chemical Equilibrium and Analysis*
3. Complete one of the following additional chemistry lab courses:
CHEM F202—Basic Inorganic Chemistry
4. Minimum credits required

Biochemistry

1. Complete the following:
CHEM F105X—General Chemistry I
2. Complete the following:
CHEM F321—Organic Chemistry I

3. Complete one of the following chemistry lab courses:
 - CHEM F202—Basic Inorganic Chemistry3
 - CHEM F212—Chemical Equilibrium and Analysis4
 - CHEM F323—Organic Chemistry Laboratory.....1
4. Minimum credits required 23 – 26

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
 Community and Technical College 907-455-2038
www.uaf.edu/rural/

BA Degree

Minimum Requirements for Degree: 120 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 administration, curriculum and teaching, family support, or infants and toddlers.

The child development and family studies program meets professional preparation standards developed by the National Association for the Education of Young Children. These six core standards and field experience expectations guide the CDFS BA program content and outline a set of common expectations for professional knowledge, skills and dispositions within the field of early care and education in conjunction with family studies.

The program supports students who desire a strong foundation in the field of early childhood by integrating the early childhood education AAS content requirements with that of the child development and family studies BA. Students are required to complete the program major and one of the specialized concentration areas: administration within the early childhood field, curriculum and teaching, family support, or infant and toddler. Students entering the child development and family studies BA program with an AA or AAS degree in early childhood education from a regionally accredited college or university will receive 23 transfer credits toward the program major. Any additional courses will need to be evaluated on an individual basis.

Flexible course delivery fosters successful completion for early childhood professionals living in both rural and urban areas of Alaska. All program and concentration area courses must be completed with a C grade or better, with the exclusion of all clinical practice course work which must be completed with a B grade or better. Completion of the CDFS BA will meet requirements for both a major and minor.

Major — BA Degree

1. Complete the general university requirements.* (See page 131. As part of the core curriculum requirements, the following courses are recommended: ENGL F213X*, MATH F103X*, MATH F107X*, or MATH F161X*; BIOL F104X*, GEOG F111X* or GEOS F120X*.)
2. Complete the BA degree requirements. (See page 135. As part of the BA social science degree requirements, complete PSY F101.*)
 - a. Complete three of the following recommended humanities/social science courses as part of your BA degree requirements:*
 - ANS F242—Native Cultures of Alaska3
 - ANS F320W—Language and Culture: Applications to Alaska3
 - ANS F330—Yupik Parenting and Child Development3
 - ANS F461—Native Ways of Knowing3
 - ANTH F407—Kinship and Social Organizations3
 - LING F303W,O—Language Acquisition3

- b. Complete one of the following recommended mathematics courses as part of your BA core requirements:*
 - CS F101—Computers and Society3
 - CS F102—Introduction to Computer Science3
 - MATH F103X—Concepts and Contemporary Applications of Mathematics3
 - MATH F107X—Functions for Calculus4
 - MATH F161X—Algebra for Business and Economics3
3. Complete the following program (major) requirements:*
 - ECE F101—Overview of the Profession3
 - ECE F104—Child Development I: Prenatal, Infants and Toddlers3
 - ECE F107—Child Development II: The Preschool and Primary Years3
 - ECE F110—Safe, Healthy, Learning Environments3
 - ECE F140—Positive Social and Emotional Development3
 - ECE F210—Child Guidance3
 - ECE F229—Foundations in Nutrition and Physical Wellness3
 - ECE F235—Screening, Assessment and Recording (2)2
 - or ECE F130—Culture, Learning, and the Young Child (2)2
 - ECE F305—Social and Emotional Development: Reflection and Practice3
 - ECE F342O—Family Relationships3
 - ECE F350—Play: Foundation for Development3
 - ECE F445W—Adolescence through the Lifespan3
 - ECE F480—Child Development and Family Studies Portfolio1
4. Complete one of the following concentrations:*

Administration within the Early Childhood Field***

Complete the following:*

- ECE F340—Financial Management3
- ECE F341W—Personnel Management3
- ECE F471—Clinical Practice: Organizational Action Research3
- CIOF F150—Computer Business Applications3
- ENGL F212—Business, Grant and Report Writing3
- BA S301—Principles of Management (UAS)3
- BA S343—Principles of Marketing (UAS)3
- BA S490—Political and Social Environment of Business (UAS)3

Note: ECON F201 or ECON F202 is a prerequisite for BA S490.

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***

Complete the following:*

- ECE F240—Inclusion of Children with Special Needs3
- ECE F310—Constructivist Curriculum3
- ECE F360—Assessment in Early Childhood3
- ECE F420W—Developing Literacy in the Early Years3
- ECE F430—Fine Arts in the Early Years3
- ECE F440—Exploring Math and Science in the Early Years3
- ECE F472—Clinical Practice: Classroom Research**3
- ECE F473—Clinical Practice: Classroom Management** (3)3
- or ECE F270—Practicum II as approved by CDFS program** (3)3

Family Support*** ****

Complete the following:*

- ECE F242—Child and Family Ecology3
- ECE F301—Parents as Partners in Education (3)3
- or ECE F302—Building Home Program Relationships: Prenatal to 3 Years (3)3
- ECE F306W—Building Bridges to Support Family Mental Health3
- ECE F405—Seminar in Culture and Child Rearing Practices3
- ECE F410—Supporting Family Relationships through Mentoring3
- ECE F442—Family Resource Management3
- ECE F471—Clinical Practice: Organizational Action Research3
- SWK F360—Child Abuse and Neglect3

Infant and Toddler***

Complete the following:*

ECE F214—Curriculum III: Infant and Toddlers	3
ECE F302—Building Home Program Relationships.....	3
ECE F304W—Attachment and Social Development.....	3
ECE F320—Environment and Curriculum for Infants and Toddlers	3
ECE F405—Seminar in Culture and Child Rearing Practices	3
ECE F421—From Babbling to Talking to Early Literacy	3
ECE F472—Clinical Practice: Classroom Research**	3
ECE F473—Clinical Practice: Classroom Management** (3) or ECE F270—Practicum II as approved by CDFS program** (3)	3

5. Minimum credits required120

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

** Student must earn a B grade or higher in each course.

*** Students completing any CDFS concentration will need an additional 6 upper-division (300 – 400) credits within the Humanities/Social Science BA general degree requirements.

**** Note: Students completing the family support concentration need to complete SWK F103 as a prerequisite to SWK F360.

For students entering the program with an AA or AAS degree in early childhood education from a regionally accredited college or university (23 credits accepted as a block of courses).

1. Complete the general university requirements.* (See page 131. As part of the core curriculum requirements, the following courses are recommended: ENGL F213X*; MATH F103X*, MATH F107X* or MATH F161X*; BIOL F104X*, GEOG F111X* or GEOS F120X*.)

2. Complete the BA degree requirements. (See page 135. As part of the BA social science degree requirements, complete PSY F101.)*

a. Complete three of the following humanities/social science courses as part of the BA degree requirements:*

ANS F242—Native Cultures of Alaska	3
ANS F320W—Language and Culture: Applications to Alaska	3
ANS F330—Yupik Parenting and Child Development	3
ANS F461—Native Ways of Knowing	3
ANTH F407—Kinship and Social Organizations	3
LING F303W,O—Language Acquisition	3

b. Complete one of the following mathematics courses as part of the BA core requirements:*

CS F101—Computers and Society	3
CS F102—Introduction to Computer Science	3
MATH F103X—Concepts and Contemporary Applications of Mathematics	3
MATH F107X—Functions for Calculus.....	4
MATH F161X—Algebra for Business and Economics	3

3. Complete the following program (major) requirements:*

ECE F305—Social and Emotional Development: Reflection and Practice.....	3
ECE F342O—Family Relationships.....	3
ECE F350—Play: Foundation for Development.....	3
ECE F445W—Adolescence through the Lifespan.....	3
ECE F480—Child Development and Family Studies Portfolio	1

4. Complete one of the following concentrations:*

Administration Within the Early Childhood Field***

Complete the following:*

ECE F340—Financial Management	3
ECE F341W—Personnel Management	3
ECE F471—Clinical Practice: Organizational Action Research	3
CIOF F150—Computer Business Applications.....	3
ENGL F212—Business, Grant and Report Writing.....	3
BA S301—Principles of Management (UAS)	3
BA S343—Principles of Marketing (UAS)	3
BA S490—Political and Social Environment of Business (UAS).....	3

Note: ECON F201 or ECON F202 is a prerequisite for BA S490.

Note: This specialization is offered in collaboration with the University of Alaska Southeast. For course descriptions of UAS courses see the current

University of Alaska Southeast catalog. These courses are available by distance delivery.

Curriculum and Teaching***

Complete the following:*

ECE F240—Inclusion of Children with Special Needs.....	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
ECE F472—Clinical Practice: Classroom Research**	3
ECE F473—Clinical Practice: Classroom Management** (3) or ECE F270—Practicum II as approved by CDFS program** (3)	3

Family Support****

Complete the following:*

ECE F242—Child and Family Ecology	3
ECE F301—Parents as Partners in Education (3) or ECE F302—Building Home Program Relationships: Prenatal to 3 Years (3)	3
ECE F306W—Building Bridges to Support Family Mental Health	3
ECE F405—Seminar in Culture and Child Rearing Practices	3
ECE F410—Supporting Family Relationships through Mentoring	3
ECE F442—Family Resource Management.....	3
ECE F471—Clinical Practice: Organizational Action Research	3
SWK F360—Child Abuse and Neglect****	3

Infant and Toddler***

Complete the following:*

ECE F214—Curriculum III: Infant and Toddlers	3
ECE F302—Building Home Program Relationships.....	3
ECE F304W—Attachment and Social Development.....	3
ECE F320—Environment and Curriculum for Infants and Toddlers	3
ECE F405—Seminar in Culture and Child Rearing Practices	3
ECE F421—From Babbling to Talking to Early Literacy	3
ECE F472—Clinical Practice: Classroom Research**	3
ECE F473—Clinical Practice: Classroom Management** (3) or ECE F270—Practicum II as approved by CDFS program** (3)	3

5. Minimum credits required120

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

** Student must earn a B grade or higher in each course.

*** Students completing any CDFS concentration will need an additional 6 upper-division (300 – 400) credits within the Humanities/Social Science BA general degree requirements.

**** Note: Students completing the family support concentration need to complete SWK F103 as a prerequisite to SWK F360.

CIVIL ENGINEERING

College of Engineering and Mines

Department of Civil and Environmental Engineering

907-474-7241

<http://cem.uaf.edu/cee/>**BS 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 lifelong 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 <http://cem.uaf.edu/cee/abet/>.

Major — BS 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 BS degree requirements. (See page 136. As part of the BS 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 F341—Environmental Engineering.....	4
CE F344—Water Resources Engineering.....	3
CE F432—Steel Design.....	3
CE F438W,O—Design of Engineered Systems.....	3
CE F490—Civil Engineering Seminar.....	0.5
CE F491—Civil Engineering Seminar.....	0.5
DRT F210—Intermediate CAD.....	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

* Students 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 student's advisor and the student 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/

BA 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 — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA 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
* Students 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 BA degree.	

COMPUTER ENGINEERING

College of Engineering and Mines
Department of Electrical and Computer Engineering
907-474-7137
<http://cem.uaf.edu/ece/>

BS Degree

Minimum Requirements for Degree: 134 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 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 BS 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 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: Graduates will apply skills for clear communication, responsible teamwork, professional attitudes and ethics needed to succeed in the complex modern work environment.

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 BS 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 <http://cem.uaf.edu/ece/abet/>.

Major — BS 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 BS degree requirements. (See page 136. As part of the BS 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 F311—Applied Engineering Electromagnetics | 3 |
| EE F331—High Frequency Lab..... | 1 |
| EE F343—Digital Systems Analysis and Design..... | 4 |
| EE F353—Circuit Theory | 3 |
| EE F354—Engineering Signal Analysis | 3 |
| 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 | 3 |
| ESM F450W—Economic Analysis and Operations..... | 3 |
| MATH F202X—Calculus III | 4 |
| MATH F302—Differential Equations | 3 |
| MATH F307—Discrete Mathematics | 3 |
| Approved electives** | 6 |
| Approved engineering science elective*** | 3 |

4. Complete State of Alaska Fundamentals of Engineering examination
5. Minimum credits required134
 - * *Students must earn a C- grade or better in each course.*
 - ** *Recommended electives are: EE F334, EE F434, EE F451, EE F461, EE F464, EE F471, CS F361, CS F381, CS F472, CS F411, CS F421, CS F431, 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 Engineering and Mines
Department of Computer Science
907-474-2777
www.cs.uaf.edu

BS, BS/MS Degrees

Minimum Requirements for Degrees: BS: 120 credits;
BS/MS: 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, and offers abundant employment opportunities.

The BS and MS degrees follow the recommendations of the Association for Computing Machinery (ACM) and the Institute for Electrical and Electronic Engineers (IEEE). The BS 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 — BS 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 BS degree requirements. (See page 136. As part of the BS degree requirements, complete: MATH F201X*, PHYS F211X* and PHYS F212X*.)
3. Complete the following:*
 - MATH F202X—Calculus III4
 - MATH F307—Discrete Mathematics3
 - STAT F300—Statistics3
4. Complete one of the following:*
 - MATH F302—Differential Equations3
 - MATH F310—Numerical Analysis3
 - MATH F314—Linear Algebra3
 - MATH F371—Probability3
 - MATH F405W—Abstract Algebra3
 - MATH F408—Mathematical Statistics3
 - MATH F460—Mathematical Modeling3
5. Complete the following program (major) requirements:*
 - CS F201—Computer Science I3
 - CS F202—Computer Science II3
 - CS F301—Assembly Language Programming3
 - CS F311—Data Structures and Algorithms3
 - CS F321—Operating System3
 - CS F331—Programming Languages3
 - CS F371—Computer Ethics and Technical Communication3

- CS F372—Software Construction3
- CS F411—Analysis of Algorithms3
- CS F441—Systems Architecture (3)
or EE F443—Computer Engineering (4) 3 – 4
- CS F471W—Senior Capstone I3
- CS F472W/O—Senior Capstone II3
- EE F341—Digital and Computer Analysis and Design4
- Electives in computer science at the F300- or F400-level
or approved electives (such as EE F443)9
- 6. Minimum credits required120
 - * *Students must earn a C- grade or better in each course.*

Major — BS/MS Degree

1. Complete the following admission requirements:
 - a. CS major (junior preferred) or senior standing.
 - b. GPA 3.25 or above based on a minimum of 24 credits. Students must maintain a cumulative GPA of 3.0 to remain in the program.
 - c. Submit GRE (general) scores.
 - d. Submit a study goal statement.
 - e. Submit a UAF graduate application for admission.
 2. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete: MATH F200X* and any approved ethics course.)
 3. Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete: MATH F201X*, PHYS F211X* and PHYS F212X*.)
 4. Complete the following program (major) requirements:*
 - CS F201—Computer Science I3
 - CS F202—Computer Science II3
 - CS F301—Assembly Language Programming3
 - CS F311—Data Structures and Algorithms3
 - CS F321—Operating System3
 - CS F331—Programming Languages3
 - CS F441—Systems Architecture3
 - CS F471W—Senior Capstone I3
 - CS F472W/O—Senior Capstone II3
 - EE F341—Digital and Computer Analysis and Design4
 - ENGL F314W/O/2—Technical Writing3
 - MATH elective at F300/F400-level3
 - MATH F307—Discrete Mathematics3
 - STAT F300—Statistics3
 5. Complete the following:
 - CS F611—Complexity of Algorithms3
 - CS F631—Programming Language Implementation3
 - CS F641—Advanced Systems Architecture3
 - CS F671—Advanced Software Engineering3
 - CS F690—Graduate Seminar and Project3
 - CS F691—Graduate Seminar and Project3
 - CS upper-division/graduate level electives3
 - CS graduate level electives6
 6. Pass a written comprehensive exam in the areas of computer algorithms/theory/complexity, computer architecture, computer language and software engineering.
 7. Minimum credits required141
 - * *Students must earn a C- grade or better in each course required for the BS degree.*
- Note: For the master's degree, a student must earn an A or B grade in F400-level courses. A grade of C (2.0) will be accepted in 600-level courses provided a B grade point average is maintained.*
- Note: This degree program must be completed in seven years or the student will be disqualified from the program. If a student is disqualified, a BS in computer science will be awarded if: 1) completed in 10 years, and 2) the student meets the BS degree requirements for computer science with the option of substituting CS F411/F451 for CS F611/F651.*

Minor

1. Complete the following:*
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 required15

* Students must earn a C- grade or better in each course used to fulfill the minor requirements.

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

EARTH SCIENCE

College of Natural Science and Mathematics

Department of Geology and Geophysics

907-474-7565

www.uaf.edu/geology/

BA Degree

Minimum Requirements for Degree: 120 – 130 credits

This program provides broad training in various aspects of earth systems science. Three concentrations are available: earth systems science, geological hazards and mitigation, and secondary education. The concentrations allow students to focus on different interests and career paths during their junior and senior years but offer considerable flexibility during the freshman and sophomore years.

The earth science concentration offers students a sound background in a broad spectrum of geoscience disciplines, with an emphasis on the interaction between earth systems. The geological hazards and mitigation concentration is designed for students who wish to pursue careers in communicating science, hazards analysis or emergency management-related natural disasters. The secondary education concentration is designed for students who plan to teach earth science in secondary school in Alaska. Requirements for certified teachers have been built in to this concentration in consultation with the School of Education. Students choosing this concentration should consult with both the Department of Geology and Geophysics and the School of Education for advising.

Major — BA 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 BA degree requirements. (See page 135. Note that social science (s) courses are included in each of the concentrations. These courses may also be applied to the BA degree requirements).
3. Complete the following foundation courses:*
GEOS F101X—The Dynamic Earth4
or GEOS F120X—Glaciers, Earthquakes and Volcanoes4
GEOS F112X—The History of Earth and Life4
or GEOS F106X—Life in the Age of Dinosaurs4
4. Complete one of the following concentrations:

Earth Systems Science

- a. Complete the following:*
GEOS F304—Geomorphology3
GEOS F315W—Paleobiology and Paleontology4
- b. Complete one course from each of the following areas:*
Earth Systems
GEOG F101—Expedition Earth: Introduction to Geography3
MSL F111X—The Oceans.....4

NRM F101—Natural Resource Conservation Policy	3
PHYS F175X—Introduction to Astronomy	4
Earth Materials	
GEOS F213—Mineralogy	4
GEOS F262—Rocks and Minerals	3
Geospatial Sciences	
GEOG F338—Introduction to Geographic Information Systems	3
GEOS F222—Fundamentals of Geospatial Sciences.....	3
GEOS F225—Field and Computer Methods in Geology (2) and GEOS F408—Photogeology (2)	4

- c. Complete one course from any two of the following areas:*

Weather and Climate

ATM F101X—Weather and Climate of Alaska.....	4
GEOG F307—Weather and Climate	3

Natural Resources

GEOG F302—Geography of Alaska	3
GEOG F402—Resources and Environment	3

Geoscience

GEOS F309—Tectonics.....	3
GEOS F322—Stratigraphy and Sedimentation.....	4

Geobiology

GEOS F485—Mass Extinctions, Neocatastrophism, and the History of Life	3
GEOS F486—Vertebrate Paleontology.....	3

- d. Complete 9 additional credits at the F300-level or above with an emphasis in geology, geography, biology, natural resources management or other earth science-related field as approved by the undergraduate advisor, including one W (writing-intensive) course and one O (oral-intensive) course.9
- e. Complete any UAF minor. Courses used to satisfy the upper-division emphasis may also be applied towards the requirements for a minor.
- f. Minimum credits required120

Geological Hazards and Mitigation

- a. As part of the core curriculum requirements, complete SOC F100X and COMM F300X.
- b. Complete the following:*
ED F486O/2—Media Literacy3
ENGL F314W,O/2—Technical Writing.....3
GEOS F304—Geomorphology.....3
GEOS F380—Geological Hazards3
GEOS F406—Volcanology3
HSEM F301—Principles of Emergency Management and
Homeland Security.....3
PHYS F175X—Introduction to Astronomy.....4
STAT F200X—Elementary Probability and Statistics.....3
- c. Complete one course from each of the following areas:*

Earth Materials

GEOS F213—Mineralogy.....	4
GEOS F262—Rocks and Minerals	3

Geospatial Sciences

GEOS F222—Fundamentals of Geospatial Sciences.....	3
GEOS F225—Field and Computer Methods in Geology (2) and GEOS F408—Photogeology (2)	4

Weather and Climate

ATM F101X—Weather and Climate of Alaska.....	4
GEOG F307—Weather and Climate.....	3

- d. Complete a minimum of two courses from one of the following specialized areas:*

Mitigation

HSEM F412—Emergency Planning and Preparedness	3
HSEM F423—Disaster Response Operations and Management.....	3
HSEM F434—All Hazards Risk Analysis	3

Communications

COMM F335O—Organizational Communications	3
COMM F353—Conflict, Mediation, and Communication.....	3
COMM F441—Persuasion	3

- e. Complete any the requirements for a minor in geology, paleontology, geospatial sciences, geography, communications, journalism, sociology or other field related to communicating and mitigating natural hazards, as approved by the undergraduate advisor.
- f. Minimum credits required120

Secondary Education

- a. Complete the following:*
 - GEOG F101—Expedition Earth: Elements of Physical Geography4
 - GEOS F262—Rocks and Minerals3
 - GEOS F315W—Paleobiology and Paleontology4
 - GEOS F475—Presentation Techniques in the Geosciences2
 - MSL F111X—The Oceans.....4
 - PHYS F175X—Introduction to Astronomy.....4
 - PSY F101—Introduction to Psychology3
- b. Complete one course from each of the following areas:*
 - Landform Analysis**
 - GEOG F111X—Earth and Environment: Elements of Physical Geography4
 - GEOS F304—Geomorphology3
 - Geospatial Sciences**
 - GEOS F222—Fundamentals of Geospatial Sciences.....3
 - GEOS F225—Field and Computer Methods in Geology.....2
 - GEOS F338—Introduction to Geographic Information Systems3
 - Weather and Climate**
 - ATM F101X—Weather and Climate of Alaska.....4
 - GEOG F307—Weather and Climate.....3
 - Natural Resources**
 - GEOG F302—Geography of Alaska3
 - GEOG F402—Resources and Environment3
 - Evolutionary Processes**
 - GEOS F309—Tectonics.....3
 - GEOG F485—Mass Extinctions, Neocatastrophism, and the History of Life3
 - GEOS F486—Vertebrate Paleontology.....3
- c. Complete the requirements for a minor in secondary education (see page 160)16
- d. Complete the additional requirements of the secondary education licensure program (see page 160)**19
- e. Minimum credits required130

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

**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.

ECONOMICS

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

BA, BBA 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 — BA 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 BA degree requirements. (See page 135. As part of the BA degree requirements, complete: MATH F161X*, ECON F201 and ECON F202, and 3 credits of a political science elective.)
3. Complete the following:*
 - ACCT F261—Principles of Financial Accounting.....3
 - ECON F227—Intermediate Statistics for Economics and Business3
 - ECON F321—Intermediate Microeconomics3
 - ECON F324—Intermediate Macroeconomics3
 - ECON F463W—International Economics.....3
 - STAT F200X—Elementary Probability and Statistics.....3
 - Economics electives at the F300-level or above**18
4. Minimum credits required120

* Students 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 — BBA 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 BBA 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 Microeconomics3
 - 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 Business3
4. Complete a minor complex (optional) or free electives to meet minimum credits required.
5. Minimum credits required120

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

** If not taken in the BBA 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: Microeconomics3
 - ECON F202—Principles of Economics II: Macroeconomics3
 - Approved economics courses at the F300-level or above12
2. Minimum credits required18

EDUCATION

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

BA Degree and Post-baccalaureate Licensure

Minimum Requirements for Degree: 128 credits;
Post-baccalaureate secondary licensure (Grades 7 – 12): 31 credits;
Music Education: 33 credits (See the BM in Music Education).
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 special education.

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, school counselors and special education teachers. 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 Certification and Advising Office.

Candidates for elementary and secondary licensures are required to have use of/own a laptop computer: elementary, before enrolling in ED F329 and F344; secondary, before the fall semester. Computers may be of any type but must have capacities that enable candidates to meet School of Education requirements. 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.

BA Degree, Elementary Education (K – 12)

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

BA 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 BA 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 F316, 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 BA 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. Evidence of plan of completion of all BA 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.
 2. Alaska Passing scores from the Praxis I exams in reading, writing and math, and Praxis II exam (test 0014 or 5014).
 3. Two letters of reference that address qualifications and potential as a teacher.
 4. A current and complete resume/curriculum vitae.
 5. Two one-page essays on topics determined by the School of Education.
 6. 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.
 7. A one-to-two-page autobiographical sketch (appropriate for presenting to prospective principals and mentor teachers).
 8. Extemporaneous writing sample. Contact the School of Education advising office for date, time and location information.
 9. Evidence of successful experiences in teaching and learning situations.
 10. Evidence of ability to work collaboratively and respectfully in cross-cultural contexts.
 11. Completed Alaska Student Teacher Authorization Packet (including fingerprint cards and criminal background check. Forms are available from the School of Education).
 12. Complete an interview, when requested.
 13. 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 — BA Degree (Elementary)

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete the following with a C or higher: 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 BA degree and program (major) requirements earning a C or higher:*
- 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 F101X—The Dynamic Earth | 4 |
| GEOS F120X—Glaciers, Earthquakes and Volcanoes: Past, Present and Future | 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 |
|---|---|
- d. Complete the following humanities requirements:*
- i. ENGL F271—Introduction to Creative Writing — Fiction (3) or ENGL F272—Introduction to Creative Writing — Poetry (3) or ENGL F273— Introduction to Creative Writing —Non-Fiction or ENGL F314W,O/2—Technical Writing (3) or JRN F311W—Magazine Article Writing (3).....
- | |
|---|
| 3 |
|---|
- ii. ED F486O/2—Media Literacy (3) or JRN F308—Film and TV Criticism.....
- | |
|---|
| 3 |
|---|
- iii. ED/LING F100—Language, Linguistics and Education (3) or LING F101—Nature of Language (3)
- | |
|---|
| 3 |
|---|
- e. ED F329—Teaching with Technology
- | |
|---|
| 3 |
|---|
- f. 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 |
| EDSE F316—Introduction to Special Education for Elementary Classroom Teachers..... | 3 |
| EDSE F320—Adapting and Accommodating Instruction for Students with Disabilities..... | 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 |
- g. 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 | 2 |
| ED F478—Math Methods and Curriculum Development | 3 |
| ED F479—Science Methods and Curriculum Development | 3 |
- h. Complete the following professional internship year with integrated course work (second semester):*
- | | |
|--|---|
| ED F414—Art, Music and Drama in Elementary Classrooms | 3 |
| ED F417—Physical and Health Education for Elementary Teachers..... | 3 |
| ED F468O—Internship and Student Teaching | 4 |
| ED F469—Synthesizing the Standards II | 2 |
| ED F476—Assessment of Literacy Development..... | 1 |
3. Minimum credits required
- | |
|-----|
| 128 |
|-----|
- * Students must earn a C grade or better in all required courses.

Minor

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 with a C grade or higher:*
- | | |
|---|---|
| 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 Certification and Advising Office for a list of approved elective courses.

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.

- Complete the following with a C grade or higher:

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
- Minimum credits required

* Practicum may be required in each education course.

Secondary*

The secondary education minor is designed for students who are interested in pursuing careers as middle school and/or high school (grades 7 – 12) teachers. Students must complete all course work with grades of C or better.

- Complete the following:

EDSC F110—Becoming a Middle/High School Teacher	1
PSY F240—Lifespan Development Psychology (3)	
or ED/PSY F245 Child Development (3).....	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)	
or EDSE F422—Curriculum and Strategies II:	
High Incidence (3)	3
- Minimum credits required

* 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 (CRCDD) 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.

Students must apply to graduate with a certificate of completion through the Office of Admissions and the Registrar, Graduation Services. 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.

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. Candidates are expected to be proficient in Windows Office software including, but not limited to, word processing, spreadsheets, and presentation software.

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:

- UAF undergraduate application and application fee.
- 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:

- 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.
- A vitae/resume.
- Three current letters of reference that address qualifications and potential as a teacher.
- Extemporaneous writing sample. Contact the School of Education Advising Office for date, time and location information.
- Alaska Passing scores from the Praxis I exam in reading, writing and mathematics.
- Academic Content Testing
 - 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). World language applicants should contact the School of Education for additional information prior to taking any Praxis II tests for their world language content area. In addition, world language applicants must complete the world language exams.
 - 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) and Writing Proficiency Test (WPT). Applicants must meet the Advanced Low rating for both tests (www.language-testing.com). In the target language, write a 2 – 3 page, well-organized, coherent response to one of three prompts (contact School of Education Secondary Program for additional information).

7. Demonstrated evidence of content competency in one of the UAF-approved secondary endorsement areas (www.uaf.edu/educ/secondary/endorsement_areas/).
 - a. The applicant holds a degree 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/).
9. Applicants must submit a placement packet. Contact the School of Education for specific guidelines. The School of Education determines placement approval, change or termination.
10. 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 of Alaska Certificate of Authorization, fingerprint cards and money order in the amount of \$60 payable to the School of Education by June 1 (this fee is non-refundable once submitted to the state). The 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)	
or EDSE F422/622—Curriculum and Strategies II: High Incidence (3)	
or EDSE F482—Inclusive Classrooms for All Children	3
EDSC F415—Foundations of Modern Educational Practices (3)	
or EDSC F205—Introduction to Secondary Education (3).....	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)
 or EDSC F437—World Language Secondary Instruction
 and Assessment (3) 3*
- EDSC F442—Technology Applications in Education..... 1
 EDSC F443—Technology Applications in Education II..... 2
 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 – 9
2. Minimum credits required 31 – 37
- * 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 160) for the Secondary Post-Baccalaureate Licensure program.

Admission Process and Requirements

Applicants will follow the admission process and requirements listed in the catalog (page 160) 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

- Complete the following:
 - EDSC F415—Foundations of Modern Educational Practices (3)
 or EDSC F205—Introduction to Secondary Education (3)..... 3
 - EDSC F414—Learning, Development and Special Needs
 Instruction (3)
 or EDSE F422—Curriculum Strategies II: High Incidence (3)
 or EDSE F482—Inclusive Classrooms for All Children (3) 3
 - PSY F240—Lifespan Development (3)
 or (preferred) PSY F245—Child Development (3) 3
 - 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
 - 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
- Minimum credits required 34

ELECTRICAL ENGINEERING

College of Engineering and Mines
 Department of Electrical and Computer Engineering
 907-474-7137
<http://cem.uaf.edu/ece/>

BS 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 BS 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:

- 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.
- 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: Graduates will apply skills for clear communication, responsible teamwork, professional attitudes and ethics needed to succeed in the complex modern work environment.

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 <http://cem.uaf.edu/ece/abet/>.

Major — BS 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 BS degree requirements. (See page 136. As part of the BS 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

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 |

Computer Engineering

Complete the following:

- | | |
|---|---|
| EE F443—Computer Engineering Analysis and Design..... | 4 |
| EE F451—Digital Signal Processing | 4 |
| EE F461—Communication Systems | 4 |

Power and Control

Complete the following:

- | | |
|---|---|
| EE F404—Electric Power Systems | 4 |
| EE F406—Electrical Power Engineering | 4 |
| Approved engineering science elective** | 3 |

6. Minimum credits required135

* Students 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.

ENGLISH

College of Liberal Arts

Department of English

907-474-7193

www.uaf.edu/english/

BA Degree

Minimum Requirements for Degree: 120 credits

The BA in English at UAF provides training in rhetorical dexterity, critical acumen and creative ingenuity — habits of mind that develop alongside intellectual inquiries concerning the production and reception of literary (and nonliterary) texts. As effective creators and thoughtful consumers of print and digital information, students learn how to identify critical methods, analyze language in varying historical, cultural and institutional contexts, and employ research in writing and speaking for a professional audience in the humanities.

The department has a particular strength in creative writing; students will have the opportunity to attend lectures and workshops with respected visiting writers and scholars as well as resident faculty. The English major is flexible and comprehensive enough to allow students to choose their own paths. Mindful of how language shapes problems, communities and environments, students are prepared for a variety of graduate programs and careers in diverse fields such as education, law and business.

Major — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA 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 one of the following:
- ENGL F410W,O/2—Studies in American Literature up to 1900.....3
 - ENGL F415W,O/2—Studies in 17th and 18th Century British Literature.....3
 - ENGL F420W,O/2—Studies in Medieval and 16th Century British Literature.....3
 - ENGL F440W,O/2—Studies in 20th and 21st Century British Literature.....3
 - ENGL F450W,O/2—Studies in 19th Century British Literature.....3
 - ENGL F455W,O/2—Studies in 20th and 21st Century American Literature.....3
 - ENGL F460W,O/2—Studies in Comparative/World Literature.....3
- g. Complete one of the following:
- ENGL F435—Authors.....3
 - ENGL F465—Genre.....3
- h. Complete three ENGL F300- and ENGL F400-level courses (at least one at the F400-level)9
4. Minimum credits required120
- * Students must earn a C- grade or better in each course.

Recommended courses for students interested in creative writing:

- ENGL F371W—Intermediate Creative Writing.....3
- ENGL F471W—Undergraduate Writer's Workshop3

Requirements for English Teachers (Grades 7 - 12)*

1. Complete all the requirements for the English BA 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 Schools3
 - 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 BA degree requirements. If ENGL/FL F200X is used to meet core requirements, it may not meet the BA 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 War3
 - ENGL F307—Survey of American Literature: Civil War to the Present3
 - ENGL F308—Survey of British Literature: Beowulf to the Romantic Period3
 - 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 required18

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 BA degree program, including political science, or as an optional addition to any BS degree program. For further information, contact the Department of Political Science.

Minor

1. Complete the following*:
 - PS F101—Introduction to American Government and Politics3
 2. Complete 12 elective political science credits from the following:
 - PS F447—U.S. Environmental Politics.....3
 - PS F454—International Law and the Environment3
 - 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 required15
- * PS F100X is recommended to fulfill the political economy requirement of the core curriculum.

ESKIMO

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

BA Degree

Minimum Requirements for Degree: 120 credits

Eskimo languages are spoken by far northern people from the north-eastern 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 BA 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 BA 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 — BA Degree

1. Complete the general university requirements (page 131).
 2. Complete the BA 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 required120
- * Students must earn a C- grade or better in each course.

Yup'ik Eskimo — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA 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 required120
- * Students must earn a C- grade or better in each course.

Minor

1. Complete Eskimo electives15
2. Minimum credits required15

FILM

College of Liberal Arts
Department of Theatre and Film
907-474-6590
www.uaf.edu/film/

BA Degree

Minimum Requirements for Degrees: 120 credits

A degree in film will provide students with a critical understanding of the history, theory and technologies of cinema and new media arts, while giving students the opportunities, tools and resources needed for careers in media industries, to pursue graduate study, or become media artists. Through an interdisciplinary approach to film and media studies, the program will produce media-literate professionals who can play a leading role in an increasingly information-centered world where every profession will require skilled media creators.

Film students will have opportunities to produce their own creative, time-based content for a wide variety of multimedia applications. Emphasis will be placed on the cultures, lifestyles and environments of Alaska and the North, and the unique opportunities they afford for skilled media creators and artists.

Major - BA Degree

1. Complete the general university requirements (page 131).
To graduate, all students must complete 39 upper-division credits. Some of these will be covered by the upper-division required courses for the film BA, but not all of them. Film students will need to take upper-division electives (in film or other disciplines) to complete the upper-division requirement.
2. Complete the BA degree requirements (page 135).
3. Complete the following program (major) requirements:*
 - a. Complete the following:

FLM/ART F172—Previsualization and Preproduction	
for Digital Cinema.....	3
FLM/ENGL F217—Introduction to the Study of Film.....	3
FLM/JRN F290—Digital Video Editing	3
FLM/THR F271—Let's Make a Movie (3)	
or FLM/JRN F280—Video Storytelling	3
FLM/THR F331—Directing Film/Video (3)	
or FLM/JRN F480—Documentary Filmmaking	3
 - b. Complete minimum of 6 credits from Film Studies, including at least one upper-division course:

FLM/JRN F105—History of the Cinema	3
FLM/ JRN F308—Film Criticism.....	3
FLM/THR F334W—Movies and Films	3
FLM/JRN/HIST F368—Topics in American Film History.....	3
FLM/ANS F381—Alaska Natives in Film	3
FLM/ENG F427—Topics in Film Studies.....	3
FLM/FREN F433—Studies in French and European Cinema.....	3
FLM/RUSS F484—Russian and Soviet Cinema.....	3
 - c. Complete a minimum of 9 credits from Film Production, including at least one upper-division course:

THR F121—Fundamentals of Acting	3
FLM/JRN F251—Introduction to Video Production.....	4

FLM/JRN F280—Video Storytelling.....	3
FLM F298—Film Research	3
FLM/THR F310—Acting for the Camera	3
FLM/ART F371—Digital Photography and Pixel Painting.....	3
FLM F358—Lights, Camera, Audio.....	3
FLM F418—Internship in Film Production	1 – 6
FLM/THR F431—Advanced Film Production.....	3
FLM F458—SFX Up Your Video.....	3
FLM/ART/ANTH F460 – Cross-Cultural Filmmaking	3
FLM/THR F470—Advanced Film and Video Directing.....	3
FLM /ART F472—Visualization and Animation.....	3
FLM/ART F475 – Digital Video Compositing	3
FLM/ENG/THR F488—Dramatic Writing	3
FLM F497—Independent Study	3
FLM F498—Film Research	3
FLM F499—Film Thesis	3
4. Complete a minimum of 6 credits from department-approved electives	
5. Of the above, students must complete 15 credits at the F300- or F400-level, at least 6 credits of which must be at the F400-level	
6. Minimum credits required	120
* Students must earn a C- grade or better in all courses required of the core and major.	

Note: Courses used to satisfy the major cannot be used for the minor.

Film Studies Minor

- Complete the following:
FLM/ART/THR F172—Previsualization and Preproduction for
Digital Cinema.....3
FLM/ENGL F217—Introduction to the Study of Film.....3
FLM/THR/F271—Let's Make a Movie (3)
or FLM/JRN F280—Video Storytelling (3)3
- Complete a minimum of 9 credits from department-approved
electives.
- Minimum credits required 18

FISHERIES

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

BA, BS Degree

Minimum Requirements for Degrees: BA: 125 credits;
BS: 120 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 BS 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 BA 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 — BA Degree

- Complete the general university requirements (page 131).
- Complete the BA degree requirements (page 135).
- Complete the following:*
ACCT F261—Principles of Financial Accounting.....3
ANS F350W,O—Cross Cultural Communication:
Alaskan Perspectives (3)
or ANS F401—Cultural Knowledge of Native Elders3
ANTH F403W/O—Political Anthropology (3)
or ANTH F428—Ecological Anthropology and Regional
Sustainability3
BA F307—Introductory Human Resources Management (3)
or 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 F235—Introduction to Natural Resources3
ENGL F314 W,O—Technical Writing.....3
FISH F101—Introduction to Fisheries.....3
FISH F261—Introduction to Fisheries Utilization3
FISH F288—Fish and Fisheries of Alaska.....3
FISH F411—Human Dimensions of Environmental Systems3
FISH F490—Experiential Learning Internship 1
NRM F407—Environmental Law (3)
or HIST F411—Environmental History (3)3
PS F447—U.S. Environmental Politics (3)
or PS F454—International Law and the Environment (3)
or PS F455O—Political Economy of the Global Environment (3)
or PS F458—Comparative Environmental Politics (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
STAT F200X—Elementary Probability and Statistics.....3
Upper-division fisheries elective3
- Minimum credits required125

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

Major — BS Degree

- Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X or F272X.) To graduate, all students must complete 39 upper-division credits.
- Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete STAT F401 or STAT F402.)
- Complete the following:*

BIOL F115X—Fundamentals of Biology I**	4
BIOL F116X—Fundamentals of Biology II**	4
BIOL F260—Principles of Genetics	4
BIOL F310—Animal Physiology (4)	
or BIOL F213X—Human Anatomy and Physiology I (4)	
and BIOL F214X—Human Anatomy and Physiology II (4)	4 – 8
BIOL F371—Principles of Ecology	4
CHEM F105X—General Chemistry I**	4
CHEM F106X—General Chemistry II**	4
ECON F235—Introduction to Natural Resource Economics (3)	
or ECON F201—Principles of Economics I:	
Microeconomics (3)	3
ENGL F414W—Research Writing	3
FISH F101—Introduction to Fisheries	3
FISH F288—Fish and Fisheries of Alaska	3
FISH F301—Biology of Fishes (4)	
or BIOL F305—Invertebrate Zoology (4)	
or FISH F427—Ichthyology (4)	4
FISH F315—Freshwater Fisheries Techniques (3)	
or FISH F414—Field Methods in Marine Ecology	
and Fisheries (3)	3
FISH F411—Human Dimensions of Environmental Systems (3)	
or GEOG F312—People, Places, and Environment:	
Principles of Geography (3)	
or SOC F440—Environmental Sociology (3)	3
FISH F425—Fish Ecology (3)	
or FISH F426—Behavioral Ecology of Fishes (3)	
or FISH F428—Physiological Ecology of Fishes (3)	3
FISH F487W,O—Fisheries Management	3
FISH F490—Experiential Learning Internship	1
PHYS F103X—College Physics** (4)	
or PHYS F115X—Physical Science I** (4)	
or PHYS F211X—General Physics** (4)	4
STAT F200X—Elementary Probability and Statistics	3
STAT F401—Regression and Analysis of Variance*** (4)	
or STAT F402—Scientific Sampling*** (3)	3 – 4
- Complete 15 credits of electives* from Fisheries, Biology, Marine Science and Limnology or Natural Resource Management (of which at least 5 credits must be upper-division).
- Complete 4 credits of electives* from Chemistry, Geology or Physics.
- Additional electives* to complete minimum credits required.
- Minimum credits required120

* Students 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 BS degree natural science requirements but not both.

*** STAT F401 or STAT F402 may be used to meet the BS degree mathematics requirements.

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

- Complete the following:

FISH F101—Introduction to Fisheries (3)	
or NRM F101—Natural Resources Conservation	
and Policy (3)	3
FISH F288—Fish and Fisheries of Alaska	3

- Students must take at least 6 additional credit hours designated FISH, with the exception of any FISH F492 courses.
- Students may apply at most 3 credit hours 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	3
BIOL F476—Ecosystem Ecology	3
BIOL F483—Stream Ecology	3
NRM F370—Introduction to Watershed Management	3

Fisheries Business Administration and Economics

ACCT F261—Principles of Financial Accounting	3
ACCT F262—Principles of Managerial Accounting	3
BA F151—Introduction to Business	4
BA F307—Introductory Human Resources Management	3
BA F325—Financial Management	3
BA F330—The Legal Environment of Business	3
BA F343—Principles of Marketing	3
BA F390—Organizational Theory and Management	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

ANS F350W,O—Cross Cultural Communication:	
Alaskan Perspectives	3
ANS F401—Cultural Knowledge of Native Elders	3
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
PS F454—International Law and the Environment	3
PS F455O—Political Economy of the Global Environment	3
PS F458—Comparative Environmental Politics	3
RD F200—Community Development in the North	3
RD F245—Fisheries Development in Rural Alaska	3
RD F256—Co-management of Renewable Resources	3
RD F265—Perspectives on Subsistence in Alaska	3
RD F300W—Rural Development in a Global Perspective	3
RD F350O—Indigenous Knowledge and Community Research	3
RD F430—Indigenous Economic Development	
and Entrepreneurship	3

- Minimum credits required15

FOREIGN LANGUAGES

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

BA 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 — BA Degree

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

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

Two Languages

- 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

- 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 required120

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

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 above12
2. Minimum credits required15

GENERAL SCIENCE

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

BS Degree

Minimum Requirements for Degree: 130 credits

The BS 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 — BS Degree

1. Complete the general university requirements (page 131).
 2. Complete the BS 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. 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
 5. 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
 6. Minimum credits required130
- * Students 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 BS 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 BS
 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
907-474-7188
www.uagp.uaf.edu

BA, BS Degrees

Minimum Requirements for Degrees: 120 credits

Geography is a broad holistic study of the interactions among various natural/environmental, political, cultural and economic systems, and how those interactions create the world we see today at both local and global scales. Geography takes a synthesizing and inherently interdisciplinary approach to develop an integrated understanding of climate change, resource development, energy use and conservation, geopolitics, sustainable development, assessment of natural and human-caused environmental hazards, land-use change, regional conflicts, and economic and political developments all over the world. Geography also provides the framework for the integration of emerging technologies such as GIS, remote sensing and geo-visualization into a broad range of academic and professional fields.

The geography BA and BS degrees are built upon a group of required courses that provide students with a firm grounding in the fundamental components of the discipline, including global geographic perspectives, geography of the earth's natural systems, geography of human systems, geospatial sciences (GIS, remote sensing, geo-visualization), and the synthesis of these core perspectives through an integrating capstone experience.

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

BA students are encouraged to coordinate minors, electives, and internships to develop further expertise within a chosen region or topic (see #4, below), to take advantage of the considerable topical and regional expertise found throughout the UAF community, and also to underscore the important role other disciplines play within the field of geography.

Three specialized concentrations are available to students pursuing the BS degree; environmental studies; landscape analysis and climate change studies; and geospatial sciences.

The environmental studies concentration provides the foundation necessary for understanding interactions between natural and human systems, analysis of environmental issues from an interdisciplinary geographic perspective, a diverse technical and scientific approach to environmental issues, and the ability to design balanced solutions to environmental problems.

The landscape analysis and climate change studies concentration integrates and synthesizes courses in geography, climate, geologic and biological sciences, as well as geospatial sciences and technology. Students will gain a sound and interdisciplinary understanding of how environmental change influences landscape patterns and human activity and welfare, 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.

The geospatial sciences concentration emphasizes skills and practices in geographic information systems, remote sensing, geo-visualization and analysis of spatial patterns. Courses in GIS, remote sensing, GPS, map design, spatial statistics and computer programming are integrated with the geography foundation curriculum and courses in natural sciences.

Major — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA degree requirements (page 135).
3. Complete the following:*
GEOG F101—Expedition Earth: Introduction to Geography3
GEOG F111X—Earth and Environment: Elements of Physical Geography4
GEOG F312—People, Places, and Environment: Principles of Human Geography.....3
GEOG F338—Introduction to Geographic Information Systems (3) or GEOG F435—GIS Analysis (4).....3-4
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 Alaska3
GEOG F303—Geography of United States and Canada.....3
GEOG F305W—Geography of Europe3
GEOG F306—Geography of Russia.....3
GEOG F311W—Geography of Asia3
GEOG F410—Geography of the Pacific Rim3
GEOG F427—Polar Geography.....3
 - b. Physical geography: Complete one of the following:
GEOG F307—Weather and Climate.....3
GEOG F339—Maps and Landscape Analysis3
GEOG F412—Geography of Climate and Environmental Change ..3
GEOG F418—Biogeography3
 - c. Human geography: Complete one of the following:
GEOG F203—World Economic Geography3
GEOG F402—Resources and Environment3
GEOG F404—Urban Geography3
GEOG F405—Political Geography.....3
 - d. Techniques: Complete one of the following:
GEOG F301—Geographic Field Studies3
GEOG F309—Digital Cartography and Geo-Visualization4
GEOS F458—Geoscience Applications of GPS and GIS3
 - 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 required120

Note: 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: Students and faculty advisors should carefully review 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 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 — BS Degree

1. Complete the general university requirements (page 131).
2. Complete the BS degree requirements (page 136). See individual BS concentrations for specific course requirements.
3. Complete the following:*
GEOG F101—Expedition Earth: Introduction to Geography3
GEOG F111X—Earth and Environment: Elements of Physical Geography4
GEOG F338—Introduction to Geographic Information Systems (3) or GEOG F435—GIS Analysis (4)..... 3 – 4

4. Complete one of the following concentrations:*

Environmental Studies

a. Complete the following:

GEOG F207—Research Methods and Statistics in Geography	3
GEOG F307—Weather and Climate	3
GEOG F312—People, Places, and Environment: Principles of Human Geography.....	3
GEOG F339—Maps and Landscape Analysis	3
GEOG F402—Resources and Environment	3
GEOG F490W,O—Geography Seminar.....	3

b. Complete two courses from the following environmental studies electives:

GEOG F463—Wilderness Concepts	3
NRM F303X—Environmental Ethics and Actions**	3
NRM F407—Environmental Law	3

c. Complete three courses from the following environmental system electives:

ANTH F428—Ecological Anthropology and Regional Sustainability	3
BIOL F371—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 one of 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 F450—Forest Management	3
NRM F480—Soil Management for Quality and Conservation.....	3

e. Complete one of the following techniques electives:

GEOG F301—Geographic Field Studies	3
GEOG F309—Digital Cartography and Geo-Visualization	4
GEOG F435—GIS Analysis (can fulfill techniques requirement ONLY if not used in section #3 above)	4
GEOS F458—Geoscience Applications of GPS and GIS	3

Landscape Analysis and Climate Change Studies

a. As part of the baccalaureate core requirements, complete CHEM F105X and STAT F200X.

b. As part of the BS degree requirements, complete BIOL F115X and BIOL F116X.

c. Complete the following:

GEOG F312—People, Places, and Environment: Principles of Human Geography.....	3
GEOG F490W,O—Geography Seminar.....	3

d. Complete one of 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 F371—Principles of Ecology.....	4
GEOS F304—Geomorphology	3

e. Complete one of the following processes electives:

NRM F370—Watershed Management.....	3
NRM F380W—Soils and the Environment	3
or a processes-oriented content course approved by a geography faculty advisor.	

f. Complete the following patterns requirements (field methods, GIS/remote sensing tools):

GEOG F222—Fundamentals of Geospatial Sciences	3
GEOG F309—Digital Cartography and Geo-Visualization	4
GEOG F339—Maps and Landscape Analysis	3
GEOG F435—GIS Analysis (4) (can fulfill patterns requirement only if NOT used in section #3 above) or GEOS F458—Geoscience Application GPS and GIS (3).....	3 – 4

g. Complete at least one of the following patterns electives:

GE F471—Remote Sensing for Engineering.....	3
GEOS F422—Geoscience Applications of Remote Sensing	3
NRM F641—Remote Sensing Applications in Natural Resources.....	4

h. Complete the following senior practicum requirements (program synthesis):

GEOG F488—Geographic Assessment and Prediction of Natural Hazards	3
GEOG F489W—Senior Practicum: Research Design and Presentation Methods.....	4

Geospatial Sciences

a. Complete the following:

GEOG F312—People, Places, and the Environment: Principles of Human Geography.....	3
GEOG F490W,O—Geography Seminar.....	3

b. Complete the following:

CS F103—Introduction to Computer Programming.....	3
GEOG F222—Fundamentals of Geospatial Sciences.....	3
GEOG F300—Internship in Natural Resources Management and Geography.....	3
GEOG F338—Introduction to Geographic Information Systems.....	3
GEOG F339—Maps and Landscape Analysis	3–4
GEOG F435—GIS Analysis	4
STAT F200X—Elementary Probability and Statistics.....	3

c. Complete at least two remote sensing electives:

GE F471—Remote Sensing for Engineering.....	3
GEOS F422—Geoscience Applications of Remote Sensing	3
NRM F641—Remote Sensing Applications in Natural Resources.....	4

d. Complete at least two GIS electives:

GE F376—GIS in Geological and Environmental Engineering	3
GEOG F309—Digital Cartography and Geo-Visualization	4
GEOS F458—Geoscience Applications of GPS and GIS	3
NRM F638—GIS Programming***	3

e. Complete at least two landscape electives:

BIOL F469O—Landscape Ecology and Wildlife Habitat.....	3
GEOS F304—Geomorphology	3
GEOS F408—Photogeology.....	2
GEOS F430—Statistics and Data Analysis in Geology.....	3

5. Minimum credits required120

* Students 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.

*** 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 carefully review 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 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**Geography**

1. Complete the following:

GEOG F101—Expedition Earth: Introduction to Geography	3
GEOG F111X—Earth and Environment: Elements of Physical Geography.....	4
GEOG electives.....	8 – 9

2. Minimum credits required15 – 16

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

Geographic Information Systems

1. Complete the following:*

GEOG F111X—Earth and Environment: Introduction to Physical Geography.....	4
GEOG/GEOS F222—Fundamentals of Geospatial Sciences.....	3
GEOG F309—Digital Cartography and Geo-visualization	4
GEOG F338—Introduction to Geographic Information Systems	3

2. Complete one of the following:*
 - GEOG F300—Internship in Geography – in GIS (3)
 - or any GIS-related course approved by geography department chair.....3
 - GEOG F435—GIS Analysis4
 - GEOG F430—Google Earth and Neogeography3
 - NRM F369—GIS and Remote Sensing for Natural Resources.....3
3. Minimum credits required17

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

GEOLOGICAL ENGINEERING

College of Engineering and Mines
Department of Mining and Geological Engineering
907-474-7388
<http://cem.uaf.edu/mingeo/>

BS Degree

Minimum Requirements for Degree: 133 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 in the environment. 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 to produce:

1. Graduates who are employed in one of the following professional areas: mineral and energy exploration and development; geotechnical engineering; groundwater engineering; or geo-environmental engineering.
2. Graduates will possess technical knowledge required to meet the unique challenges of geological engineering problems germane to cold regions, especially Alaska.
3. Graduates will pursue life-long learning through continuing education opportunities, professional registration/certification, and/or graduate studies.

For more information about the Geological Engineering Program mission, goals and educational objectives, visit <http://cem.uaf.edu/mingeo/abet/>.

Major — BS Degree

1. Complete the general university requirements (page 131). As part of the core curriculum requirements, complete: MATH F200X*, CHEM F105X* and CHEM F106X*.
2. Complete the BS degree requirements (page 136). As part of the BS degree requirements, complete: MATH F201X*, PHYS F211X* and PHYS F212X*.
3. Complete the following program (major) requirements:*
 - ES F201—Computer Techniques.....3
 - ES F208—Mechanics.....4
 - ES F331—Mechanics of Materials3
 - ES F341—Fluid Mechanics.....4
 - GE F101—Introduction to Geological Engineering1
 - GE F261—General Geology for Engineers3
 - GE F365—Geological Materials Engineering.....3
 - GE F371—Remote Sensing for 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 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 F202X—Calculus III	4
MATH F302—Differential Equations	3
MIN F202—Mine Surveying	3
MIN F225—Quantitative Methods in Mining Engineering.....	2
MIN F370—Rock Mechanics.....	3
MIN F408O—Mineral Valuation and Economics	3
Technical electives**	6

Highly recommended technical electives:

CE F341—Environmental Engineering.....	4
CE F344—Water Resources Engineering.....	3
CE F422—Foundation Engineering	3
CE F424—Introduction to Permafrost Engineering.....	3
CE F442—Environmental Engineering Design.....	3
CE F603—Arctic Engineering	3
ESM F422—Engineering Design.....	3
GE F322—Erosion Mechanics and Conservation.....	3
GE F376—GIS Applications in Geological and Environmental Engineering	3
GE F384—Engineering Geology of Alaska.....	4
GE F400—Geological Engineering Internship	1 – 3
GE F422—Soil Physics.....	3
GE F430—Geomechanical Instrumentation.....	3
GE F435—Exploration Design	3
GE F440—Slope Stability	3
GE F441—Geohazard Analysis	3
GE F445—Design of Earth Dams and Embankments.....	3
MIN F443—Principles and Applications of Industrial Explosives.....	3
MIN F482—Computer-Aided Mine Design — VULCAN.....	3
NRM F435—GIS Analysis	4
PETE F302—Well Logging.....	3
PETE F407—Petroleum Production Engineering	3
PETE F426—Drilling Engineering.....	3

4. Minimum credits required133

* Students must earn a C- grade or better in each of these courses.

** Technical elective credits must contain engineering design and be selected by the student from the 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 BS 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.

GEOSCIENCE

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

BS Degree

Minimum Requirements for Degree: 120 credits

Graduates in geoscience have broad backgrounds in the earth sciences and firm foundations in mathematics, physics and chemistry. Four concentrations are available to allow students to pursue their own emphasis: geology, paleontology, geospatial science and geophysics. The concentrations allow students to focus earlier in their studies but

are flexible enough to allow students to pursue their own interests in the junior and senior years. All of the concentrations are designed to prepare students for industry jobs in oil, mining and environmental consulting; jobs with agencies such as U.S. Geological Survey, NASA, Alaska Division of Geological and Geophysical Surveys; or graduate studies.

The geology concentration offers students a sound background in a spectrum geological disciplines with an emphasis on current field mapping techniques essential to exploration and research. The paleontology concentration is designed to provide students with the skills necessary to locate, excavate, interpret and curate specimens for museums, agencies or universities. The geospatial sciences concentration focuses on the principles, techniques and applications of remote sensing, GIS and GPS to prepare students for careers that require geospatial data analysis and visualization. The geophysics concentration challenges students to use physics in understanding geoscience concepts, emphasizing applications in seismology, volcanology and glaciology in the context of the Alaskan landscape. This concentration is designed to prepare students for graduate work in geophysics and environmental engineering fields or other disciplines that use geophysical tools such as ground-penetrating radar or exploration seismology.

Major — BS Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X and CHEM F105X.)
2. Complete the following:*
 - GEOS F101X—The Dynamic Earth4
 - GEOS F112X—The History of Earth and Life4
 - GEOS F309—Plate Tectonics3
3. Complete one of the following concentrations:*

Geology

- a. Complete the following:
 - CHEM F106X—General Chemistry II4
 - PHYS F103X—College Physics I4
 - PHYS F104X—College Physics II4
- b. Complete the following (major) requirements:*
 - GEOS F213—Mineralogy4
 - GEOS F214—Petrology and Petrography4
 - GEOS F225—Field and Computer Methods in Geology2
 - GEOS F304—Geomorphology3
 - GEOS F314—Structural Geology4
 - GEOS F315W—Paleobiology and Paleontology4
 - GEOS F322—Stratigraphy and Sedimentation4
 - GEOS F351W—Field Geology**8
 - GEOS F430—Statistics and Data Analysis in Geology3
 - STAT F200X—Elementary Probability and Statistics (3) or STAT F300—Statistics (3)3
- c. Complete 12 additional credits of upper-division GEOS courses or other upper-division courses approved by the undergraduate advisor* including one O (oral intensive) course from any department.

Paleontology

- a. Complete the following:
 - CHEM F106X—General Chemistry II4
 - PHYS F103X—College Physics I4
- b. Complete the following (major) requirements:*
 - GEOS F213—Mineralogy4
 - GEOS F214—Petrology and Petrography4
 - GEOS F225—Field and Computer Methods in Geology2
 - GEOS F314—Structural Geology4
 - GEOS F322—Stratigraphy and Sedimentation4
 - GEOS F351W—Field Geology**8
 - GEOS F430—Statistics and Data Analysis in Geology3
 - STAT F200X—Elementary Probability and Statistics (3) or STAT F300—Statistics (3)3

- GEOS F315W—Paleobiology and Paleontology4
- GEOS F317O—Paleontological Research and Laboratory Methods2
- c. Complete at least two of the following electives:*
 - GEOS F453—Palynology and Paleopalynology4
 - GEOS F485—Mass Extinctions, Neocatastrophism and the History of Life3
 - GEOS F486—Vertebrate Paleontology3
 - GEOS F488—Undergraduate Research2
- d. Complete the requirements for a minor in biological sciences20

Geospatial Sciences

- a. Complete the following:
 - CHEM F106X—General Chemistry II4
 - PHYS F103X—College Physics I4
 - PHYS F104X—College Physics II4
- b. Complete the following (major) requirements:*
 - GEOS F213—Mineralogy4
 - GEOS F214—Petrology and Petrography4
 - GEOS/GEOS F222—Fundamentals of Geospatial Sciences3
 - GEOS F225—Field and Computer Methods in Geology3
 - GEOS F304—Geomorphology3
 - GEOS F314—Structural Geology4
 - GEOS F322—Stratigraphy and Sedimentation4
 - GEOS F351W—Field Geology**8
 - GEOS F430—Statistics and Data Analysis in Geology3
 - STAT F200X—Elementary Probability and Statistics (3) or STAT F300—Statistics3
- c. Complete at least two of the following remote sensing electives:*
 - GEOS F408—Photogeology2
 - GEOS F422—Geoscience Applications of Remote Sensing3
 - GEOS F488—Undergraduate Research2
 - NRM F641—Remote Sensing of Natural Resources4
- d. Complete at least two of the following GIS electives:*
 - GEOS F309—Cartography and Geovisualization4
 - GEOS F435—GIS Analysis3
 - GEOS F458—Geoscience Applications of GPS and GIS3
 - NRM F338—Introduction to GIS3
- e. Complete 9 additional credits of upper-division GEOS courses or other upper-division courses approved by the undergraduate advisor* including one O (oral intensive) course and one additional W (writing intensive) course from any department.

Geophysics

- a. Complete the following:*
 - GEOS F262—Rocks and Minerals3
 - GEOS F318—Solid Earth Geophysics3
 - GEOS F406—Volcanology3
 - GEOS F431—Foundations of Geophysics4
 - GEOS F475W,O—Presentation Techniques in the Geosciences2
 - GEOS F477O—Ice in the Climate System3
 - GEOS F488—Undergraduate Research2
 - MATH F201X and MATH F202X—Calculus II and III8
 - MATH F302—Differential Equations3
 - MATH F314—Linear Algebra4
 - PHYS F211 and PHYS F212—General Physics8
 - PHYS F213X—Elementary Modern Physics4
 - PHYS F220—Introduction to Computational Physics4
- b. Complete at least three of the following science and engineering electives:*
 - ES F331—Mechanics of Materials3
 - ES F341—Fluid Mechanics4
 - GEOS F314—Structural Geology4
 - GEOS F322—Stratigraphy and Sedimentation4
 - GEOS F422—Geoscience Applications of Remote Sensing3
 - ME F441—Heat and Mass Transfer3
 - PHYS F301—Introduction to Mathematical Physics4

PHYS F313—Thermodynamics and Statistical Physics.....	4
PHYS F341—Classical Physics I: Particle Mechanics.....	4
c. Complete 3 additional upper-division GEOS courses or other upper-division courses as approved by the undergraduate advisor*	
d. Complete one W (writing intensive) course approved by the undergraduate advisor.*	
4. Minimum credits required	120
* Students must earn a C- grade or better in each of these courses.	
** GEOS F351 is offered at UAF during the summer of odd-numbered years. Students may substitute a 6-credit field geology class at another institution. The geology and geophysics undergraduate advisor will assist students in placement in an approved field geology class.	

Minor

Geology

1. Complete the following:	
GEOS F101X—The Dynamic Earth	4
GEOS F112X—The History of Earth and Life	4
2. Complete 12 additional credits of GEOS courses as approved by the undergraduate geoscience advisor:	12
3. Minimum credits required	20

Paleontology

1. Complete the following:	
GEOS F101X—The Dynamic Earth	4
GEOS F112X—The History of Earth and Life	4
2. Complete three of the following:	
GEOS F315W—Paleobiology and Paleontology	4
GEOS F317O—Paleontological Research and Laboratory Methods	2
GEOS F322—Stratigraphy and Sedimentation.....	4
GEOS F453—Palynology and Paleopalynology	4
GEOS F485—Mass Extinctions, Neocatastrophism and the History of Life.....	3
GEOS F486—Vertebrate Paleontology.....	3
3. Minimum credits required	16 – 20

Geospatial Sciences

1. Complete the following:	
GEOS F101X—The Dynamic Earth	4
GEOS F112X—The History of Earth and Life	4
GEOS/GEOG F222—Fundamentals of Geospatial Sciences.....	3
GEOS F225—Field and Computer Methods in Geology.....	2
GEOS F422—Geoscience Applications of Remote Sensing	3
GEOS F458—Geoscience Applications of GPS and GIS	3
2. Minimum credits required:	19

Geophysics

1. Complete the following:	
GEOS F101X—The Dynamic Earth	4
GEOS F112X—The History of Earth and Life	4
GEOS F318—Solid Earth Geophysics.....	3
GEOS F406—Volcanology	3
GEOS F431—Foundations of Geophysics.....	4
GEOS F477O—Ice in the Climate System	3
2. Minimum credits required:	21

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/WGS 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/

BA Degree

Minimum Requirements for Degree: 120 credits

The history department seeks to prepare students to critically analyze and interpret cultural heritage, the great problems that have faced humans throughout history and how we have sought to solve them.

If you enjoy studying and researching major cultural, social, economic and political events of the past, then a BA in history may be for you. Through our program you will develop skills in oral and written presentation, research and critical thinking, and gain a greater awareness of the human condition. Our students also acquire an appreciation of the complexity of the discipline, an understanding that historical narratives are constructed, contested and always changing, and the recognition that there are varied perspectives on the past.

As liberal arts majors, history prepares students for a multitude of careers in the public, private and non-profit sectors. History graduates may find work as educators, researchers and analysts, public relations representatives, advocates, and business men and women.

Major — BA Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete HIST F100X.)*
 2. Complete the BA 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 Civilization3
HIST F121—East Asian Civilization3
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 required120
- * Students 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 above6
2. Complete HIST electives12
3. Minimum credits required18

HOMELAND SECURITY AND EMERGENCY MANAGEMENT

School of Management
Department of Homeland Security and Emergency Management
907-474-7461
www.uaf.edu/som/programs/bem/

BEM Degree

Minimum Requirements for Degree: 120 credits

In a post 9/11 environment, the challenges faced by emergency management and homeland security professionals have reached unprecedented levels. As we experience an increase in the frequency, complexity and severity of man-made, natural and technological disasters, ever-increasing demands have been placed on emergency professionals and the skill sets required to succeed. Today, more so than ever before, the integration of federal, state and local resources, and communication and collaboration has become the norm. Issues concerning terrorism, critical infrastructure protection/management, risk, business continuity, fire, hazardous materials, law enforcement, public health and safety are no longer domains unto themselves but part of the new fabric of this highly integrated and complex environment. Consequently, more is now required and expected of our traditional first responders and those charged with the leadership and management roles of these individuals and organizations.

The bachelor of emergency management program focuses on development of skill sets required to lead and manage individuals and organizations in an increasingly complex environment. The program builds upon an individual's technical capabilities derived from education, training and experience in fire, law enforcement, military or other related fields. This technical expertise is then combined with a curriculum of business administration and emergency management, and homeland security instruction. This focus provides students with the operations management knowledge to lead and manage individuals, departments or agencies on a day-to-day basis while simultaneously preparing them to excel and lead during times of crisis at the local, regional, national or international levels. This degree is built specifically to meet the needs of those who provide administrative oversight, supervisory control, leadership or management roles within the fields of fire, law, emergency medical services, and security (to include other related fields) at the local, state, federal and international levels. The degree also provides those at the responder level the opportunity to further their education, increase their competitive advantage for promotion and advance their operational understanding of the highly integrated emergency management and homeland security environment of today.

Major — BEM Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F107X* or MATH F161X*.)
 2. Complete the BEM degree requirements (page 137)*.
 - a. Complete 33 credits of major requirements from the emergency services AAS degree from UAF or any regionally accredited institution within these subject areas: emergency/para-medical, environmental health and safety, fire science, law enforcement, network/cyber security, process technology, public safety or wildland fire, or commensurate military credit from the above subject areas as approved by the program director, with a cumulative GPA of 2.25 or higher.
 - b. Complete the following:*
- | | |
|---|---|
| ACCT F261—Principles of Financial Accounting..... | 3 |
| BA F307—Introduction to Human Resources Management..... | 3 |
| BA F343—Principles of Marketing..... | 3 |
| BA F390—Organizational Theory and Behavior..... | 3 |
| BA F457—Training and Management Development | 3 |
| ECON F201—Principles of Economics I: Microeconomics | 3 |

- ED F486O/2—Media Literacy3
 ENGL F314W,O/2—Technical Writing3
 STAT F200X—Elementary Statistics3
- c. Complete the following (major) courses:*
- HSEM F301—Principles of Emergency Management and Homeland Security3
 HSEM F412—Emergency Planning and Preparedness3
 HSEM F423—Disaster Response Operations and Management3
 HSEM F434—All Hazards Risk Analysis3
 HSEM F445W, O/2—Business Continuity and Crisis Management 3
 HSEM F456W—Leadership and Influence During Crisis3
3. Complete 3 credits from the following:*
- BA F317W—Employment Law3
 BA F452W—Internship in Emergency Management3
 BA F490—Services Marketing3
 COMM F300X—Communicating Ethics3
 COMM F335O—Organizational Communications3
 COMM F353—Conflict, Mediation, and Communication3
4. Minimum credits required120
- * Students 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).

Minor

Emergency Management

1. Complete the following:*
- HSEM F301—Principles of Homeland Security and Emergency Management3
2. Complete three of the following:*
- HSEM F412—Emergency Planning and Preparedness3
 HSEM F423—Disaster Response Operations and Management3
 HSEM F434—All Hazards Risk Analysis3
 HSEM F445W, O/2—Business Continuity and Crisis Management3
 HSEM F456W—Leadership and Influence During Crisis3
3. Complete at least 3 credits from the following:*
- BA F317W—Employment Law3
 BA F452W—Internship in Emergency Management3
 BA F490—Services Marketing3
 COMM F335O—Organizational Communications3
 COMM F353—Conflict, Mediation, and Communication3
 GEOS F120X—Glaciers, Earthquakes and Volcanoes: Past, Present and Future4**
 GEOS/GEOG F222—Fundamentals of Geospatial Sciences (3) or course(s) pre-approved by the program director3
4. Minimum credits required15
- * Students must earn a C- grade or better in each course.
 ** May be used to satisfy half of the core science requirement.

Military Security Studies

1. Complete 10 credits of MILS electives, as approved by the program director, Homeland Security and Emergency Management.*
2. Complete two of the following:*
- HSEM F301—Principles of Emergency Management and Homeland Security3
 HSEM F412—Emergency Planning and Preparedness3
 HSEM F423—Disaster Response Operations and Management3
 HSEM F434—All Hazards Risk Analysis3
 HSEM F445W, O/2—Business Continuity and Crisis Management 3
 HSEM F456W—Leadership and Influence During Crisis3
 MILS F442—History of the American Military (3) or course(s) pre-approved by the program director3
3. Minimum credits required16
- * Students must earn a C- grade or better in each course.

INTERDISCIPLINARY STUDIES

Office of Interdisciplinary Programs

907-474-7716

fyinds@uaf.edu

www.uaf.edu/gradsch/classes/interdisciplinary-program/

BA, BS, BT 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 235 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 BA, BS or BT degree must be met.

In developing an interdisciplinary proposal, the student should specify the degree (BA, BS or BT), 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.

BA, BS or BT 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.
- Minimum credits required 130

Minor

1. Contact the Academic Advising Center at 907-474-6396 or 888-823-8780 for materials and procedures.
2. Prepare and submit a draft declaration of interdisciplinary minor form and submit it electronically to the Academic Advising Center at www.uaf.edu/advising/ or in person at 509 Gruening Building. Include a title for the minor, briefly describe the body of knowledge and skills intended to fulfill the minor, including courses specifying the knowledge and skills relevant to the minor title. For example: Food Science minor, including relevant course work from transfer credits in Food Science from a regionally accredited university, as well as credits from chemistry, fisheries or natural resources management, and biological sciences. An interdisciplinary minor cannot be titled the same as an existing minor and must demonstrate a cohesive body of knowledge skills. The approved title will appear on the student's transcript.
3. Three faculty members approved by the dean of General Studies will serve as the interdisciplinary minor committee. This committee will ensure that an appropriate and cohesive body of knowledge and skills is addressed in the planned minor and that the interdisciplinary minor does not overlap with an existing minor, and will discuss alternatives with the student as needed.
4. Minimum credits required 18

JAPANESE STUDIES

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

BA 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 — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA 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

* Students 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 BA may double count a maximum of 9 credits from the major requirements toward a second major. Students earning two degrees (BA/BBA) 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/

BA Degree

Minimum Requirements for Degree: 120 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 KUAC, a public television and public radio station, student-owned FM and TV station KSUA, and the *Sun Star*, 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 digital newsroom and photography lab, a digital audio bay, a digital video editing/advanced digital printing lab, two wet photography labs and a

photography studio. The department is accredited by the Accrediting Council on Education in Journalism and Mass Communication.

Major — BA Degree

- Complete the general university requirements (page 131).
 - Complete the BA degree requirements. (See page 135. As part of the BA degree requirements, complete HIST F132*.)
 - Complete the following program (major) requirements:

JRN F101—Media and Culture	3
JRN F202—News Writing for the Media	3
JRN F251—Introduction to Video Production	4
JRN F302W—Reporting	3
JRN F400—Professional Media Internship	3
JRN F404—Photojournalism I	3
JRN F413—Mass Media Law and Regulation	3
JRN F421—Journalism in Perspective	3
JRN F432W—Public Relations Techniques	3
JRN F454O—Newscast	3
JRN F490—Online Publication: “Extreme Alaska”	3
 - Complete one of the following four courses:

JRN F215—Radio Production	3
JRN F323—Editing for Journalists	3
JRN F406—Photojournalism II	3
JRN F480—Documentary Filmmaking	3
 - Complete one course from the list of approved journalism electives:**
 - Complete credits outside of Journalism. To assure the journalist a broad liberal arts education, 80 credits must be taken from outside of journalism, 65 of which should be from any of these departments; AKNP, ALST, ANL, ANS, ANTH, ART, ASLF, ATM, BIOL, CHEM, COMM, ECON, ENGL, ENVE, ESK, FISH, FL, FREN, GEOG, GEOS, GER, HIST, HONR, HUM, JPN, JUST, LING, LS, MATH, MSL, MUS, NORS, NRM, PHIL, PHYS, PS, PSY, RUSS, SOC, SPAN, STAT, THR and WGS
- Approved journalism electives:***
- | | |
|--|---|
| JRN F204/ART F284—Basic Digital Photography | 3 |
| JRN F215—Radio Production | 3 |
| JRN F240—Foreign Corresponding | 3 |
| JRN F250—Website Design | 3 |
| JRN/FLM 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/WGS F380O—Women, Minorities and the Mass Media | 3 |
| JRN F390—New Media Toolkit | 3 |
| JRN F402/ART F483—Advanced Photography | 3 |
| JRN F405/ART F465—Advanced Photography Seminar | 3 |
| JRN F406—Photojournalism II | 3 |
| JRN F407/ART F487—Digital Darkroom | 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 F454O—Newscast | 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 |
| JRN F498—Undergraduate Research | 3 |
- Minimum credits required120
- * Students must earn a C- grade or better in each course in the major requirements and any course offered through the Department of Journalism.

Minor*

- Complete the following:

JRN F101—Media and Culture	3
JRN F202—News Writing for the Media	3
Approved JRN electives	9

 (Any journalism course taken for the major serves as an approved elective for the minor. Other approved electives for the minor are the same as those listed for the major).
 - Minimum credits required15
- * Students 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/

BA Degree

Minimum Requirements for Degree: 120 credits

The justice discipline represents a melding of theoretical and applied concepts, and the BA degree in justice, as well as the MA 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 BA 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 — BA Degree

- Complete the general university requirements (page 131).
 - Complete the BA degree requirements (page 135).
 - 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
 - Complete 18 credits from the following:
 - Justice electives12
 - 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
 - Minimum credits required120
- * Students must earn a C- grade or better in each course.
- ** If taken to meet the upper-division baccalaureate core requirement for ethics/values and choices in the Perspectives on the Human Condition, then the 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 Justice3
JUST electives.....12
2. Minimum credits required15

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:
PS F303—Politics and the Judicial Process.....3
PS F435W—Constitutional Law I: Federalism3
PS F436W—Constitutional Law II: Civil Rights and Liberties3
2. Complete 6 credits from the following:
ANS F425—Federal Indian Law and Alaska Natives.....3
BA F317W—Employment Law3
BA F330—The Legal Environment of Business.....4
JRN F413—Mass Media Law and Regulation3
JUST F352—Criminal Law3
JUST F354—Procedural Law.....3
PS F322O—International Law and Organization3
PS F450—Comparative Aboriginal Rights and Policies3
SOC F435—Sociology of Law3
3. Minimum credits required15

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 Choice3
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 Society3
PS F263—Alaska Native Politics3
PS F301—American Presidency3
PS F315—American Political Thought.....3
PS F462—Alaska Government and Politics.....3
HIST F131—History of the United States3
HIST F361—Early American History.....3
HIST F364—History of the U.S. 1945 – Present.....3
RD F300W—Rural Development in a Global Perspective3
RD F325—Community Development Strategies.....3
3. Minimum credits required15

LINGUISTICS

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

BA 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 — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA degree requirements (page 135).
3. Complete the following program (major) requirements:*
- a. Complete the following:**
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 Grammar3
LING F318—Introduction to Phonetics and Phonology3
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/WGS F308W,O—Language and Gender3
COMM F320—Communication and Language3
ENGL F462—Applied English Linguistics3
ENGL F472—History of the English Language3
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 I3
LING F434—Field Methods in Descriptive Linguistics II3
LING F450O—Language, Policy and Planning.....3
or other upper-division LING electives.
4. Minimum credits required120

Minor

1. Complete the following:
LING F101—Nature of Language.....3
LING F318—Introduction to Phonetics and Phonology3
LING F320—Introduction to Morphology (3)
or ENGL F318—Modern English Grammar (3).....3
2. Complete two LING electives. ****6
3. Minimum credits required15
* Students must earn a C- grade or better in each course.
** Where appropriate, these courses may be counted toward fulfillment of core requirements or BA 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.

MARINE SCIENCE

School of Fisheries and Ocean Sciences
907-474-7824
www.sfos.uaf.edu/academics/

Minor only

Though the marine science minor is available to students in all degree programs, fisheries students will particularly benefit from the breadth this minor offers. The program will also appeal to students from other disciplines (e.g., political science, earth sciences, biology and wildlife, environmental science, resource management, and education) in which possible career paths may require and/or benefit from training in marine science (policy-making, resource management, education, the seafood industry, etc.).

Students who complete the minor in marine science will possess a knowledge base and skill set that will make them more competitive for a wide variety of agency and organization positions, particularly within the state of Alaska. The education and training will be applicable to jobs within government management agencies such as the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service, as well as Alaska Native organizations, non-profit conservation organizations, the seafood industry, or in other policy development, fisheries, education, or outreach capacities.

1. Complete the following:
MSL F211—Introduction to Marine Science I3
MSL F212—Introduction to Marine Science II.....3
MSL F213L—Marine Science Laboratory1
2. Complete 6 credits from the following:
MSL F317—Introduction to Marine Mammal Biology.....3
MSL F330—The Dynamic Alaskan Coastline.....3
MSL F403—Estuaries Oceanography.....3
MSL F412—Early Life Histories of Marine Invertebrates3
MSL F431—Polar Marine Science.....3
MSL F449 – Biological Oceanography3
MSL F463—Chemical Coastal Processes.....3
3. Complete 2 additional credits from the following:
Marine Science and Limnology
MSL F220—Scientific Diving2
MSL F317—Introduction to Marine Mammal Biology.....3
MSL F330—The Dynamic Alaskan Coastline.....3
MSL F403—Estuaries Oceanography.....2
MSL F412—Early Life Histories of Marine Invertebrates3
MSL F421—Field Course in Subtidal Studies.....2
MSL F431—Polar Marine Science.....3
MSL F449—Biological Oceanography3
MSL F450—Marine Biology and Ecology Field Course4
MSL F456—Kelp Forest Ecology.....4
MSL F463—Chemical Coastal Processes.....3
MSL F497—Marine Field Experience (Independent Study) 1 – 2

Fisheries

FISH F288/BIOL F288—Fish and Fisheries of Alaska	3
FISH F301—Biology of Fishes.....	3
FISH F425—Fish Ecology	3
FISH F440—Oceanography for Fisheries	3

Biology and Wildlife

BIOL F305—Invertebrate Zoology	5
BIOL F473—Limnology	4

Economics

ECON F235—Introduction to Natural Resource Economics.....	3
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4. Minimum credits required15

MATHEMATICS

College of Natural Science and Mathematics
Department of Mathematics and Statistics
907-474-7332 or 474-5374
www.uaf.edu/dms/

BA, BS 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 a minor in statistics (see separate listings).

Major — BA or BS Degree

1. Complete the following pre-major requirement:
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) to include a total of 39 upper-division credits, in any field, to satisfy the general university requirements for baccalaureate degrees.
3. Complete the BA or BS degree requirements. (See page 135 – 136. As part of the BS 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 III4
MATH F215—Introduction to Mathematical Proofs3
MATH F314—Linear Algebra3
5. Complete one of the following options: *
Mathematics Option
 - a. Complete the following:
MATH F401W—Introduction to Real Analysis3
MATH F405W—Abstract Algebra3
MATH F490O—Senior Seminar.....2
 - b. Complete at least 21 additional credits of electives. * Acceptable elective courses include any math or statistics course at the 300-level or above, and CS F201. At least 15 credits must be math courses (for exceptions see below**). Following are some suggested elective packages.
 - i. Pure math:
MATH F305—Geometry.....3
MATH F320—Topics in Combinatorics (3)
or MATH F321—Number Theory (3)3

MATH F404—Topology	3
MATH F422—Complex Analysis.....	3
Additional elective credits	9

ii. Applied math:

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

Statistics Option

• Complete the following:

ENGL F314W/O/2—Technical Writing (3) or ENGL F414W—Research Writing (3)	3
CS F201—Computer Science I (3) or NRM F338—Introduction to Geographic Information Systems (3)	3
MATH F371—Probability	3
MATH F401W—Introduction to Real Analysis (3) or MATH F405W—Abstract Algebra (3)	3
MATH F408—Mathematical Statistics	3
STAT F300—Statistics.....	3
STAT F401—Regression and Analysis of Variance.....	4
STAT F402—Scientific Sampling	3
STAT F454—Statistical Consulting Seminar	1
Additional elective credits 300-level or above	3

6. Minimum credits required120

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

** Satisfies core or BA or BS 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: In addition to meeting all the general requirements for the specific degree, certain mathematics courses are required of all mathematics majors. At least 12 approved mathematics credits at the 300-level or above must be taken while in residence on the Fairbanks campus. All electives must be approved by the department.

Requirements for mathematics teachers (grades 7 - 12):****

1. Complete the following:

CS F201—Computer Science I.....	3
MATH F305—Geometry.....	3
MATH F306—Introduction to the History and Philosophy of Mathematics	3
MATH F320—Topics in Combinatorics (3) or MATH F321—Number Theory (3) or MATH F307—Discrete Mathematics (3)	3
STAT F300—Statistics (3) or MATH F371—Probability (3) and MATH F408 —Mathematical Statistics (3)	3 - 6

2. Complete two of the following:

MATH F302—Differential Equations.....	3
MATH F310—Numerical Analysis	3
MATH F421—Applied Analysis	4
MATH F422—Introduction to Complex Analysis.....	3
MATH F460—Mathematical Modeling	3

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 math- ematics advisor	9

2. Minimum credits required21

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
<http://cem.uaf.edu/me/>

BS, BS/MS Degrees

Minimum Requirements for Degree: BS: 130 credits;
BS/MS: 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 BS 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 BS 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 — BS Degree

- Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X, CHEM F105X and CHEM F106X.)
- Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete MATH F201X, PHYS F211X and PHYS F212X.)
- 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 F486—Senior Design	1
ME F487W/O—Design Project	3
ME electives**	6
Technical electives***	3

- Minimum credits required130

* Students 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 courses (ME F409; ME F416; PETE F407; PETE F426) 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 — BS/MS Degree

- Complete the following admission requirements:
 - ME major (junior preferred) or senior standing.
 - 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.
 - Submit three letters of reference.
 - Submit GRE (general) scores.
 - Submit a study goal statement.
 - Submit a UAF graduate application for admission.
- Complete the general university requirements (page 131).
- Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete: MATH F201X, PHYS F211X and PHYS F212X.)
- Complete the master's degree requirements (page 206).

- Complete the following BS 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	4
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 F486—Senior Design	1
ME F487W/O—Design Project	3

- Complete the following MS 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

- 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)	

- 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 BS degree will be awarded if: 1) course work is completed in 10 years, and 2) the student meets all ME BS requirements.

MILITARY SCIENCE AND LEADERSHIP

School of Management
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 program for training military officers. 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 BA 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 required19
- * Electives must be approved by the department.

MINING ENGINEERING

College of Engineering and Mines
Department of Mining and Geological Engineering
907-474-7388
<http://cem.uaf.edu/mingeo/>

BS 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 employed in the mineral and energy industries,
- can solve problems germane to Alaska, and
- are professionals and understand the need to stay technically current.

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 BS 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 <http://cem.uaf.edu/mingeo/abet/>.

Major — BS 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 BS degree requirements. (See page 136. As part of the BS 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.....	3
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
* Students 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 the following:*	
MIN F103—Introduction to Mining Engineering	1
MIN F104—Mining Safety and Operations Lab.....	1
MIN F226—Introduction to Mine Development.....	2
2. Complete 11 – 12 MIN credits from advisor-approved electives at 300 or 400 level*	11 – 12
3. 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/

BA, BM Degrees

Minimum Requirements for Degrees: BA: 120 credits;
BM: 122 – 145 credits

The music curriculum is designed to satisfy cultural and professional objectives. The BA degree in music provides a broad, liberal education with a concentration in music. The BM degree in music education offers thorough preparation in teacher training with sufficient time to develop excellence in performance areas. The BM 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 BM 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 F307, F313, F317 are repeatable for credit. MUS F161 – F162, F261 – F262, F361 – F362, F461 – F462 are repeatable up to 6 credits.

Major — BA Degree

1. Complete the general university requirements (page 131).	
2. Complete the BA 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	6
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 required120
- * Students must earn a C grade or better in each course.

Major — BM Degree (Performance)

- Complete the following BM degree admission requirement:
Audition on the major instrument.
 - 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.)
 - Complete a piano placement test during the first week of classes.
 - Complete the following degree and program (major) requirements:*
- Complete the following:

MUS F161 – F462—Private Lessons (major)	24
MUS F131 and F132—Basic Theory	6
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
 - 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
 - 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
 - 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 required122
- * Students must earn a C grade or better in each course.
- ** Courses from 4b and 4c not already applied to program requirements may also meet this requirement.

Major — BM Degree (Music Education)

Concentrations: Elementary, Secondary, K – 12

- Complete the following BM degree admission requirement:
Audition on the major instrument.
- Complete the general university requirements (page 131).

- Complete a piano placement test during the first week of classes.
 - Complete the following degree and program (major) requirements:*
- | | |
|--|----|
| Large ensembles | 8 |
| MUS F131 and F132—Basic Theory | 6 |
| 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 Computer-based Music Technology ... | 3 |
| MUS F351O—Conducting | 3 |
| MUS F390—Junior Recital..... | 0 |
| MUS F432—Orchestration and Arranging..... | 3 |
- Complete the following education requirements:
 - Contact the School of Education for application procedures for admission to the teacher education program.**
 - 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
 - Complete a multicultural elective***.....
 3 |
 - Complete one of the following concentrations:

Elementary

 - Complete the following:

MUED F309—Elementary School Music Methods.....	3
ED F452O—Elementary Internship	3 – 12
 - Minimum credits required
 133 |

Secondary

 - Complete the following:

MUED F405W—Secondary School Music Methods	3
ED F453O—Secondary Internship.....	3 – 12
 - Minimum credits required
 130 |

K – 12

 - Complete the following:

MUED F309—Elementary School Music Methods.....	3
MUED F405W—Secondary School Music Methods	3
ED F454O—Student Teaching K – 12	15
 - Minimum credits required
 145 |
- * Students must earn a C grade or better in each course.
- ** Music education majors must have completed the necessary prerequisites and be 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

- Students must select from one of the options defined below:*

Option 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	3
MUS F132—Basic Theory.....	3
MUS F133—Basic Ear Training.....	2
MUS F134—Basic Ear Training	2
MUS F221—History of Music.....	3
MUS F222—History of Music	3

NATURAL RESOURCES MANAGEMENT

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

BS Degree

Minimum Requirements for Degree: 130 credits

Natural resources management involves 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 BS degree offers three concentrations: forestry; high latitude agriculture; and humans and the environment. 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; to maintain close student interaction with faculty and provide opportunities 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 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, re-vegetation, domestic and native animal production, and agricultural and ecological aspects of soil science.

The humans and the environment concentration focuses on human interactions with the environment and the balancing of uses, needs and values regarding natural resources. Humans and the environment students will gain a solid foundation in the physical sciences relevant to resources management, but will be distinguished by a focus on social science course work. Students have the opportunity to integrate international study into the degree option. Humans and the environment graduates will have skills needed to identify differing social values, understand policy and the legal foundations of resource management issues, and have knowledge of methods to develop management plans and implement decisions. Graduates will be well-positioned for a variety of careers in public resource management agencies, tribal organizations, private firms and non-profits.

Graduates of the program will have acquired a foundation in the biological, social and physical sciences and a blend of classroom, laboratory and fieldwork experience needed to develop skills for a career. The forestry program leads to a professional degree in forestry. The program is accredited by the Society of American Foresters.

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 fieldwork opportunities for students.

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	3
MUS F132—Basic Theory.....	3
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

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

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.

Major — BS Degree**Concentrations: Forestry; High Latitude Agriculture; Humans and the Environment**

- Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete a MATH—Calculus course.)
- Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete STAT F200X*.)
- 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 F304W,O—Environmental Decision Making	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
- Complete one of the following concentrations:

Forestry

 - 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 F322W—Principles and Techniques of Wildlife Management (3)	
or FISH F487W,O—Fisheries Management (3)	3
 - Complete three of the following to total at least 8 credits:***
 - 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 F322W—Principles and Techniques of Wildlife Management (3)	
or FISH F487W,O—Fisheries Management (3)	3
 - 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

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

** Satisfies core natural science requirement.

*** Satisfies BS 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

- 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)	
or NRM F466—Environmental Soil Chemistry (3)	3
- 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.
- Complete at least 9 credits in natural resources management electives:

any NRM course at the F200-level or above that has not been used to meet other requirements.
- 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.

Humans and the Environment

- Complete the following:

ECON F335—Intermediate Natural Resource Economics	3
NRM F204—Public Lands Law and Policy	3
NRM F365—Principles of Outdoor Recreation Management	3
NRM F430—Resource Management Planning	3
NRM F465—Survey Research in Natural Resources Management	3
- Complete at least 12 credits from the following:

FISH F487W,O—Fisheries Management	3
NRM F312—Range Management	3
NRM F340—Natural Resources Measurement and Inventory	3
NRM F370—Introduction to Watershed Management	3
NRM F410—Numerical Methods for Natural Resources Management	3
NRM F450—Forest Management	3
NRM F463—Wilderness Management	3
NRM F480—Soil Management for Quality Conservation	3
WLF F322W—Principles and Techniques of Wildlife Management	3
- Complete at least 2 credits from the following:

NRM F290—Resource Management Issues at High Latitudes (2)	
or NRM F300—Internship in Natural Resources Management and Geography (2)	2 – 6

- d. Complete 9 credits in a skills-building single field of study:
Skills building provides depth of study in fields employed in humans and the environment-related careers. Courses to be determined by students in consultation with their advisor and approval of the department head. Examples of skills-building fields are: agriculture, art, aviation, business, computer application, curation, fire science, fisheries management, forestry, GIS/remote sensing, hazardous materials, language, law enforcement, statistics and wildlife management.9
- e. Complete 15 credits in breadth electives:
Electives in humans and the environment provide exposure to a breadth of topic areas relevant to understanding human interaction with the natural environment. A list of approved classes for each topic area is available from the department.
9 credits must be at the F300-level or above. Students are required to complete at least 3 credits from three separate topic areas in meeting the 15 credit requirement:
Alaska and Native Alaskans
Energy and Minerals
Environmental Issues
Law and Politics
Parks and Wilderness15
5. Minimum credits required130
- Note: Courses required for the major may also be used to satisfy the general university and BS degree requirements as appropriate.*

Minor

1. Complete the following:
NRM F101—Natural Resources Conservation and Policy3
NRM electives*15
2. Minimum credits required18
- * *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/

BA 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 80.

Major — BA Degree

- Complete the general university requirements (page 131).
- Complete the BA degree requirements (page 135).

- Complete the following:*
ANL F256—Alaska Native Languages: History, Status and Maintenance (3)
or ANL F315—Alaska Native Languages: Eskimo Aleut (3)
or ANL F315—Alaska Native Languages: Indian Languages (3)3
ANTH F242—Native Cultures of Alaska3
BIOL F104X—Natural History of Alaska**4
ART F425W—Visual Images of the North (3)
or ENGL F349—Narrative Art of Alaska Native Peoples (in English Translation) (3)
or ENGL F350—Literature of Alaska and the Yukon Territory (3)3
GEOG F427—Polar Geography3
HIST F483W—20th Century Circumpolar History3
NORS F484W—Seminar in Northern Studies3
PS F263—Alaska Native Politics (3)
or PS F462—Alaska Government and Politics (3)3
 - Complete 15 credits* from two of the following groups:***
 - Anthropology
ANTH F302—Ethnography of Siberia (s)3
ANTH F309—Circumpolar Archaeology3
ANTH F313—Ethnography of Alaska (s)3
ANS/ANTH F320W—Language and Culture: Applications to Alaska3
ANTH F383—Athabaskan Peoples of Alaska and Adjacent Canada3
ANTH F472—Culture and History of the North Atlantic3
 - Geography
GEOG F302—Geography of Alaska3
GEOG F303—Geography of United States and Canada3
GEOG F306—Geography of Russia3
 - History
HIST F404—Modern Scandinavia3
HIST F461W—History of Alaska3
HIST F463—Foundations of Russian History3
HIST F464—History of Russia3
HIST F481—Polar Exploration and Its Literature3
 - Political Science
PS/ANS F325—Native Self-Government3
PS/ANS F450—Comparative Aboriginal Rights and Policies3
PS F452—International Relations of the North3
PS F454—International Law and the Environment3
PS F460W—Government and Politics of Canada3
PS F468W—Government and Politics of Russia3
 - Humanities
ART F365—Native Art of Alaska3
ART F367—Eskimo Art3
ENGL F349—Narrative Art of Alaska Native Peoples (in English Translation)3
ENGL F350—Literature of Alaska and the Yukon Territory3
Northern language****10
 - Minimum credits required130
- * *Students must earn a C- grade or better in each course.*
- ** *Students may take this course as one of the two required lab science courses within the university's general requirements.*
- *** *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

- Complete the following:
ANL F256—Introduction to Alaska Native Languages: History, Status and Maintenance (3)
or ANL F315—Alaska Native Languages: Eskimo Aleut (3)
or ANL F316—Alaska Native Languages:
Indian Languages (3)3
ANTH F242—Native Cultures of Alaska3
ART F425W—Visual Images of the North (3)
or ENGL F349—Narrative Art of Alaska Native Peoples
(in English Translation) (3)
or ENGL F350—Literature of Alaska and the Yukon
Territory (3)3
BIOL F104X—Natural History of Alaska*4
GEOG F427—Polar Geography3
HIST F483W—20th Century Circumpolar History3
PS F263—Alaska Native Politics (3)
or PS F462—Alaska Government and Politics3
 - Minimum credits required18
- * Students may take this course as one of the two required lab science courses within the university's general requirements.

PETROLEUM ENGINEERING

College of Engineering and Mines
Department of Petroleum Engineering
907-474-7734
<http://cem.uaf.edu/pete/>

BS Degree

Minimum Requirements for Degree: 133 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:

- Our graduates will possess the technical knowledge and skills required to analyze real world petroleum engineering problems, and develop innovative solutions that meet the needs of multiple stakeholders.
- Our graduates will recognize the value of continuing professional development throughout their careers. This may take the form of advanced degrees, industry courses, and formal mentoring and coaching.
- Our graduates will compete effectively in the global petroleum engineering profession and they will exhibit the behaviors necessary to become leaders in the Alaska petroleum industry and beyond.

For more information about the petroleum engineering program mission, goals and educational objectives, visit <http://cem.uaf.edu/pete/abet/>.

Major — BS Degree

- 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.)
 - Complete the BS degree requirements. (See page 136. As part of the BS degree requirements, complete: MATH F201X, PHYS F211X and F212X.)
 - 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 F101—Fundamentals of Petroleum, Drilling and
Production..... | 3 |
| 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 |
- Complete the following program (major) requirements:
MATH F202X—Calculus III4
MATH F302—Differential Equations3
MATH F310—Numerical Analysis (3)
or ES F301—Engineering Analysis.....3
 - Complete the Fundamentals of Engineering Exam (as approved by the Board of Architects, Engineers and Land Surveyors).
 - Minimum credits required133
- * Students 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/

BA 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 — BA Degree

1. Complete the general university requirements (page 131).
2. Complete the BA 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—Critical Thinking.....	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 and Research 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—BA Thesis in Philosophy.....	3
5. Minimum credits required130

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—Critical Thinking.....	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 and Research 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 required18

* Non-English language may be used to meet general degree requirements.

** Students 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/

BS Degrees

Minimum Requirements for Degrees: 120 credits

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 in industry, government or the private sector that require refined abilities in problem-solving.

The **Physics** concentration represents the classical undergraduate physics curriculum while the **Applied Physics** concentration provides a solid foundation in general physics with the flexibility to include applied or interdisciplinary course work, aimed at e.g., engineering physics, biophysics, or oceanography.

The **Atmospheric Physics** concentration is a solid foundation at the interface of physics, climate sciences and meteorology. The **Computational Physics** concentration is relevant for students seeking careers in any areas that require expertise in computational modeling and simulation of physical systems.

The **Technical Management** concentration provides an opportunity to combine basic knowledge of physics with a 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 MBA program in UAF's School of Management.

Major — BS Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete MATH F200X)*
2. Complete the BS degree requirements. (See page 136. As part of the BS degree requirement, complete MATH F201X, PHYS F211X, and PHYS F212X.)*
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 F341—Classical Physics I: Particle Mechanics.....	4
PHYS F342—Classical Physics II: Electricity and Magnetism.....	4
4. Complete the following program (major) requirements:**

MATH F200X—Calculus I.....	4
MATH F201X—Calculus II	4
MATH F202X—Calculus III	4
5. Complete one of the following concentrations:*

Physics

- a. Complete 6 credits of MATH electives at the F300-level or above. (MATH F314, MATH F421, or MATH F422 are recommended.)* ...6
- b. Complete the following:*

PHYS F313—Thermodynamics and Statistical Physics.....	4
PHYS F343—Classical Physics III: Vibration and Waves	4
PHYS F381W,O—Physics Laboratory	3
PHYS F421—Quantum Mechanics	4
PHYS F462—Geometrical and Physical Optics.....	4

- c. Complete 6 credits from the following:*
 PHYS F471—Advanced Topics in Physics I
 PHYS F472—Advanced Topics in Physics II

Applied Physics

- a. Complete 6 credits of MATH electives at the F300-level or above.
 (MATH F314, MATH F421, or MATH F422 are recommended.).....6
 b. Complete 9 physics credits at the 300-level or above9
 c. Complete 17 credits from applied physics17
Note: The 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.

Atmospheric Physics

- a. Complete 9 physics credits at the 300-level or above.*9
 b. Complete the following:*
 ATM F401—Introduction to Atmospheric Science.....3
 ATM F413—Atmospheric Radiation.....3
 ATM F445—Atmospheric Dynamics.....3
 c. Complete 8 credits in other relevant upper-division courses.*8
Note: The 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.

Computational Physics

- a. Complete 6 credits of MATH electives at the F300-level or above.
 (MATH F314, MATH F421, or MATH F422 are recommended.)*6
 b. Complete credits in other relevant upper-division courses5
Note: The 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.
 c. Complete the following:*
 MATH F310—Numerical Analysis.....3
 CS F201—Computer Science I.....3
 CS F202—Computer Science II.....3
 d. Complete 12 credits in applied physics*12
Note: The 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.

Technical Management

- a. Complete 6 credits of MATH electives at the F300-level or above.
 (MATH F314, MATH F421, or MATH F422 are recommended.)*6
 b. Complete STAT F200X—Elementary Probability and Statistics.....3
 c. Complete 12 physics credits at the 300-level or above.*12
 d. Complete the following:*
 ACCT F261—Principles of Financial Accounting.....3
 ACCT F262—Principles of Managerial Accounting.....3
 e. Complete the following:
 (Students must take ACCT F26, MATH F202X, and PHYS F220 before taking these courses; or have permission of the MBA director. The School of Management agrees that such students will be allowed to register for these courses.)
 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
 6. Minimum credits required120

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

** Satisfies core curriculum or BS degree requirements, but not both.

*** Students can be required to earn a B grade or higher if applying for the MBA program.

Note: Other courses suggested to fulfill minimum credit requirements: ES F201, F307 and F308.

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

Requirements for physics teachers (grades 7 – 12)

- Complete all the requirements of the BS degree.
- All prospective physics teachers must complete the following:*
 CHEM F105X and CHEM F106X—General Chemistry.....8
 PHYS F211X—General Physics4
 PHYS F212X—General Physics4
 PHYS F213X—Elementary Modern Physics.....4
 PHYS F220—Introduction to Computational Physics4
 PHYS F301—Introduction to Mathematical Physics3
 MATH electives3
 3. Complete 16 credits of physics-approved electives.....16
 4. All prospective science teachers must complete the following:*
 PHIL F481—Philosophy of Science (3).....3
 * Students must earn a C- grade or better in each course.
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. 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

- Complete the following:*
 PHYS F211X—General Physics4
 PHYS F212X—General Physics4
 PHYS F213X—Elementary Modern Physics.....4
 2. Complete 8 credits of physics electives at the 300 – 400-level8
 3. Minimum credits required20
 * Students must earn a C- grade or better in each course.

POLITICAL SCIENCE

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

BA Degree

Minimum Requirements for Degree: 120 credits

The Department of Political Science offers a BA 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 BA 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 — BA 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 BA degree requirements (page 135).
3. Complete the following major (program) requirements:*
 - PS F101—Introduction to American Government and Politics3
 - PS F222—Political Science Research Methods3
 - 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 Administration3
 - PS F301—American Presidency3
 - PS F302—Congress and Public Policy3
 - 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: Federalism3
 - PS F436W—Constitutional Law II: Civil Rights and Liberties3
 - c. Group C—Comparative Politics
 - PS F201—Comparative Politics.....3
 - PS F202—Democracy and Global Society3
 - PS F460W—Government and Politics of Canada.....3
 - PS F464W—East Asian Governments and Politics3
 - PS/HIST F467W—Political Development in Latin America and the Caribbean3
 - PS F468W—Government and Politics of Russia.....3
 - d. Group D—International Politics
 - PS F321—International Politics.....3
 - PS F322O—International Law and Organization3
 - PS F323—International Political Economy3
 - PS F437—United States Foreign Policy3

- e. Group E—Political Theory
 - PS F314W—Political Ideologies.....3
 - PS F315—American Political Thought.....3
 - PS/WGS F340—Women and Politics3
 - PS/PHIL F411W,O—Classical Political Theory3
 - PS/PHIL F412W—Modern Political Theory3
5. Minimum credits required120

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

Minor

1. Complete the following:
 - PS F101—Introduction to American Government and Politics3
 - Complete at least four political science courses at the F200-, F300- or F400-level12
2. Minimum credits required15

PSYCHOLOGY

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

BA, BS Degrees

Minimum Requirements for Degrees: 120 credits

The Department of Psychology offers BA and BS 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, multi-cultural, indigenous, and gay and lesbian perspectives.

In addition to active engagement in the classroom, students can 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 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. The program strives to attract Native high school and undergraduate students seeking a degree in psychology.

Major — BA or BS Degree

1. Complete the general university requirements (page 131).
2. Complete the BA or BS degree requirements (page 135 or 136).
3. Complete the following program (major) requirements:*
 - a. **Foundation** (15 credits)
Complete the following:
 - PSY F101—Introduction to Psychology3
 - PSY F201—Psychology and Culture3
 - PSY/SOC F250—Introductory Statistics for Social Sciences (3) or STAT F200X—Elementary Probability and Statistics (3).....3
 - PSY F275—Introduction to Social Science Research Methods3
 - PSY F475W—Research Design and Analysis in Psychology (3) or PSY F485—Senior Seminar (3) or PSY F499—Thesis (3)3

b. **Theoretical** (6 credits)

Complete 6 credits from the following:

PSY F304—Personality	3
PSY F320—History and Systems of Psychology	3
PSY/SOC F330—Social Psychology	3
PSY/SOC F333/WGS F332—Human Sexualities Across Cultures.....	3
PSY F335—Brain and Behavior.....	3
PSY F345—Abnormal Psychology.....	3
PSY/WGS F360O—Psychology of Women Across Cultures	3
PSY F370—Drugs and Behavior.....	3
PSY F440—Learning and Cognition.....	3
PSY F470W,O—Sensation and Perception	3

c. **Applied** (6 credits)

Complete 6 credits from the following:

PSY F337W—Sport Psychology	3
PSY F390W,O—Industrial and Organizational Psychology.....	3
PSY F445W—Community Psychology	3
PSY F455—Clinical Psychology.....	3
PSY F469—Health Psychology	3
PSY F475W—Research Analysis and Design	3
PSY/SOC F480W—Qualitative Social Science Research.....	3
PSY F485—Senior Seminar in Psychology	3
PSY F488—Practicum in Psychology.....	1 – 6
PSY F498—Research in Psychology	1 – 6
PSY F499—Thesis	1 – 6

d. **Breadth** (9 credits)

Complete 9 additional psychology credits selected from the catalog or from electives approved by psychology faculty.

4. Minimum credits required120

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

** STAT F200X may count for both CORE and major requirement.

Note: No course may count in more than one area (e.g. PSY F475W may NOT count toward both 3a and 3c).

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

Note: Students 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.

Note: Students should work closely with an advisor to ensure completion of 39 upper division credits for graduation.

Minor

1. Complete the following:

PSY F101—Introduction to Psychology	3
PSY electives.....	12

2. Minimum credits required15

RURAL DEVELOPMENT

College of Rural and Community Development
 Department of Alaska Native Studies and Rural Development
 Fairbanks Campus 907-474-6528 Toll-free 888-574-6528
 Anchorage Office 907-279-2700 Toll-free 800-770-9531
 Bristol Bay Campus 907-842-8316
 Chukchi Campus 907-442-3400
 Interior-Aleutians Campus 907-474-5405
 Kuskokwim Campus 907-543-4500
 Northwest Campus 907-443-2201
www.uaf.edu/danrd/

BA 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 BA degree can be earned either on the Fairbanks campus or through distance delivery. Special application requirements and deadlines apply for distance BA degree programs.

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, 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.

Within the BA degree program, students will select and develop a concentration in one of five areas:

- The **Community Health and Wellness** concentration is designed for students with a strong interest in health and wellness. Students focus on the various facets of a healthy rural community. Going beyond the basics of health care, they explore different aspects of wellness within a community and develop tools to attain community wellness goals. Students blend and apply both contemporary and traditional health and wellness tools. Graduates may find employment with tribal governments, health consortiums, clinics and schools.
- The **Community Research and Indigenous Knowledge** concentration is for students with interests in applied research involving 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 to do ethnographies, oral histories, community surveys and needs assessments, and archival research. Graduates may find employment with museums, ANCSA corporations, tribal governments, and state and federal agencies.
- The concentration in **Indigenous Organization Management** is designed for students interested in development and operations of indigenous organizations in rural Alaska. Students develop an understanding of the history and constitutional basis for tribal governance, basics of federal Indian law, principles and practices of self-determination, and the mandates of the Alaska Native Claims Settlement Act. They develop skills in planning, budgeting and human resources management. Students can pursue a special interest, such as management of health programs, tribal governance programs or Alaska Native Corporations, and tailor the concentration to these specifications through choice of related courses and electives. Graduates may find employment with tribal and municipal governments and organizations, ANCSA corporations, and state and federal agencies.
- The **Natural Resource Development** concentration is designed for students with an interest in land and resources development, co-management and conservation. Students learn about traditional ecological knowledge, principles of natural resources management and policy, adaptive management, conservation and eco-tourism, and skills for effective public/private/tribal collaboration in resource management. Management strategies for addressing climate change are explored. Graduates may find employment with ANCSA corporations, regional and tribal entities, state and federal agencies
- The concentration in **Rural Community Business and Economic Development Planning** is designed for students interested in creating sustainable economies in 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.

For more information contact the department toll-free at 888-574-6528 or visit our website: www.uaf.edu/danrd/.

Major — BA Degree

Concentrations: Community Health and Wellness; Community Research and Indigenous Knowledge; Indigenous Organization Management; Natural Resource Development; or Rural Community Business and Economic Development Planning.

1. Complete the general university requirements (page 131).
2. Complete the BA degree requirements (page 135).
3. Complete the following:*
 - RD F300W—Rural Development in a Global Perspective3
 - 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:*
 - RD elective.....3
 - RD, ANS or ED electives6

5. Complete one of the following concentrations:

Community Health and Wellness

Complete 21 credits from the following:**

ANS F242—Native Cultures of Alaska	3
ANS F275—Yup'ik Practices in Spirituality and Philosophy	3
ANS F330—Yup'ik Parenting and Child Development (Kuskokwim Campus only)	1 – 3
ANS F348W—Native North American Women	3
ANS F350W,O—Cross Cultural Communication: Alaskan Perspectives	3
ANS/ED F370—Issues in Alaska Bilingual and Multicultural Education.....	1
ANS/ED F420—Alaska Native Education.....	3
ANS F461—Native Ways of Knowing	3
EBOT F100—Introduction to Ethnobotany.....	3
HUMS F260—History of Alcohol in Alaska.....	1
HUMS F263—Fetal Alcohol Spectrum Disorder (FASD)	1
HUMS F264—Culture, Chemical Dependency and Alaska Natives.....	1
HUMS F265—Substance Abuse and the Family	1
HUMS F280—Prevention and Community Development	3
RD F401—Cultural Knowledge of Native Elders.....	3
RD F462—Rural Health and Human Service Systems	3
RD F465—Community Healing and Wellness.....	3
RD F470/670—The Alaska Native Claims Settlement Act: Pre-1971 to present.....	3
RD F492—Rural Development Leadership Seminar	1 – 3
RHS; any advisor-approved courses	varies
RNS F120—Alaska Native Food Systems.....	3
TM F114—Tribal Justice in Tribal Court.....	1
TM F116—Juvenile Justice in Tribal Court	1
TM F117—Tribal Court Enforcement of Decisions.....	1
TM F118—Tribal Community and Restorative Justice	1

Community Research and Indigenous Knowledge

Complete 21 credits from the following:**

ANL F256—Introduction to Alaska Native Languages: History, Status and Maintenance.....	3
ANL F287—Teaching Methods for Alaska Native Languages.....	3
ANL F315—Alaska Native Languages: Eskimo-Aleut.....	3
ANL F316—Alaska Native Languages: Indian Languages.....	3

ANS F202X—Aesthetic Appreciation of Alaska Native Performance	3
ANS F242—Native Cultures of Alaska	3
ANS F275—Yup'ik Practices in Spirituality and Philosophy	3
ANS F315—Tribal People Development	3
ANS/ANTH F320W—Language and Culture in Alaska	3
EBOT F200—Seminar in Ethnobotany	1
HIST F446—American Indian History	3
HIST F490W—Researching and Writing North American History	3
NORS F470—Oral Sources: Issues in Documentation	3
NORS F484W,O—Seminar in Northern Studies.....	3
RD F110—Alaska Native Claims Settlement Act: Land Claims in the 21st Century.....	1
RD F265—Perspectives on Subsistence in Alaska.....	3
RD F268—Rural Tourism: Planning and Principles	3
RD F280—Resource Management Research Techniques.....	3
RD F401—Cultural Knowledge of Native Elders.....	3
RD F425—Cultural Resource Issues	3
RD F430—Indigenous Economic Development and Entrepreneurship.....	3
RD F470—The Alaska Native Claims Settlement Act: Pre-1971 to present.....	3
RD F492—Rural Development Leadership Seminar (may earn up to six credits)	1 – 3

Indigenous Organization Management

Complete 21 credits from the following:

ABUS F232—Contemporary Management Issues	3
ABUS F263—Public Relations.....	3
ABUS F273—Managing a Small Business	3
ANS F310—Indigenous Land Settlements.....	3
ANS F325—Native Self Government.....	3
ANS/PS F425—Federal Indian Law and Alaska Natives.....	3
ANS F450—Comparative Indigenous Rights and Policies.....	3
BA F307—Introductory Human Resources Management	3
BA F317W—Employment Law	3
BA F457—Training and Management Development	3
NORS/PS F205—Leadership, Citizenship and Choice	3
NRM F101—Natural Resources Conservation Policy	3
NRM F464—Wilderness Management	3
RD F280—Resource Management Research Techniques.....	3
RD F401—Cultural Knowledge of Native Elders.....	3
RD F427—Tribal Contracting and Compacting.....	3
RD F430—Indigenous Economic Development and Entrepreneurship.....	3
RD F451—Human Resource Management for Indigenous Communities.....	3
RD F460—Women and Development	3
RD F492—Rural Development Leadership Seminar (may earn up to six credits)	1 – 3
TM F101—Introduction to Tribal Government.....	3
TM F105—Introduction to Tribal Finance Applications	3
TM F120—Introduction to Tribal Natural Resource Management.....	3
TM F130—Introduction to Utility Management.....	2
TM F201—Advance Tribal Government.....	3
TM F205—Advanced Tribal Finance Applications.....	3
TM F225—Cross Connections: Adapting and Integrating Principles of Management Conservation.....	3

Natural Resource Development

Complete 21 credits from the following:

ABUS F158—Introduction to Tourism	1 – 3
AMIT F101—Introduction to Mining.....	3
EBOT F100—Introduction to Ethnobotany.....	3
EBOT F200—Seminar in Ethnobotany	1
ENVI F101—Introduction to Environmental Science	3
FISH F101—Introduction to Fisheries.....	3
FISH F261—Introduction to Fisheries Utilization	3
HLMR F120—History of Domesticated Alaskan Ungulates.....	1

HLRM F140—High Latitude Range Management	2
NRM F101—Natural Resources Conservation and Policy	3
NRM F453—Harvesting and Utilization of Forest Products	3
NRM F461—Interpretive Services	3
NRM F464—Wilderness Management	3
RD F245—Fisheries Development in Rural Alaska	3
RD F255—Rural Alaska Land Issues	3
RD F265—Perspectives on Subsistence in Alaska	3
RD F268—Rural Tourism: Planning and Principles	3
RD F280—Resource Management Research Techniques	3
RD F425—Cultural Resource Issues	3
RD F430—Indigenous Economic Development and Entrepreneurship	3
RD F492—Rural Development Leadership Seminar (may earn up to six credits)	1 – 3
TM F120—Introduction to Tribal Natural Resource Management	3
TM F170—Fundamentals of Rural Transportation	4
TM F225—Cross Connections: Adapting and Integrating Principles of Management Conservation	3
TM F271—Rural Transportation Planning	1
Rural Community Business and Economic Development Planning	
Complete 21 credits from the following:	
ABUS F101—Principles of Accounting I	3
ABUS F151—Village Based Entrepreneurship	1 – 3
ABUS F154—Human Relations	3
ABUS F155—Business Math	1 – 3
ABUS F161—Personal and Business Finance	3
ABUS F272—Small Business Planning	3
AMIT F101—Introduction to Mining	3
ANS/RD F315—Tribal People and Development	3
ANS F325—Native Self Government	3
ANS/PS F450—Comparative Indigenous Rights and Policies	3
CM F201—Construction Project Management	3
CM F202—Project Planning and Scheduling	3
NRM F101—Natural Resources Conservation and Policy	3
RD F110—Alaska Native Claims Settlement Act: Land Claims in the 21st Century	1
RD F250—Grant Writing for Community Development	1 – 3
RD F268—Rural Tourism: Planning and Principles	3
RD F427—Tribal Contracting and Compacting	3
RD F460—Women and Development	3
RD F470/670—The Alaska Native Claims Settlement Act: Pre-1971 to present	3
RD F492—Rural Development Leadership Seminar (may earn up to six credits)	1 – 3
TM F170—Fundamentals of Rural Transportation	4
TM F171—Introduction to the Indian Reservation Roads Program	1
6. Minimum credits required	120
* Students must earn a C- grade or better in each course.	
** Concentration area and elective credits may also fulfill the humanities, social science or mathematics general requirements for the BA degree. Prerequisites are required for many of these courses; however, prerequisites do not apply to the credit requirement.	
*** Recommended courses. Course substitutions relevant to the concentration area may be made with approval of the Rural Development faculty advisor.	

Minor

- Complete the following:
RD F300—Rural Development in a Global Perspective3
RD electives at the F200-level or above15
- Minimum credits required18

RUSSIAN STUDIES

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

BA 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 — BA Degree

- Complete the general university requirements (page 131).
 - Complete the BA degree requirements (page 135).
 - Complete the following:*
RUSS F201—Intermediate Russian I4
RUSS F202—Intermediate Russian II4
RUSS F301W,O—Advanced Russian3
RUSS F302W,O—Advanced Russian3
RUSS F432—Studies of Russian Literature3
 - Complete two of the following Russian studies core requirements:*
RUSS F431—Studies in Russian Culture3
RUSS F482—Selected Topics in Russian Literature3
RUSS F484—Russian and Soviet Cinema3
 - Complete 9 credits from the following Russian studies electives:*
ANTH F302—Ethnography of Siberia3
BA F460O—International Business3
ECON F463W—International Economics3
GEOG F306—Geography of Russia3
HIST F315—Europe: 1900 – 19453
HIST F461—History of Alaska3
HIST F463—Imperial Russia, 1700 – 19173
HIST F464—Soviet and Post-Soviet Russia3
PS F468W—Government and Politics of Russia3
 - Minimum credits required120
- * Students must earn a C- grade or better in each course.
Note: Electives must include at least 12 upper-division credits. 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

- Complete 15 credits from the Russian studies core or an advisor-approved combination from the Russian studies core and Russian studies electives.
- Minimum credits required15

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/

BA 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 — BA Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete SOC F100X or ANTH F100X; and BIOL F100X, F103X, F115X, F116X, F213X, or F214X.)
2. Complete the BA degree requirements. (See page 135. As part of the BA degree requirements, complete ANS/ANTH F242 and PSY F101.)
3. Complete 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

* Students 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
3. Minimum credits required

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 following:

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

SOCIOLOGY

College of Liberal Arts
 Department of Sociology
 907-474-5494

www.uaf.edu/sociology/

BA, BS 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 — BA or BS Degree

1. Complete the general university requirements (page 131).
2. Complete the BA or BS degree requirements. (See page 135 or. As part of the baccalaureate core requirements, complete SOC F100X.)
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 Social 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 F309—Urban Sociology | 3 |
| SOC F310—Sociology of Aging..... | 3 |
| SOC/WGS F320—Sociology of Gender | 3 |
| SOC/PSY F330—Social Psychology..... | 3 |
| SOC/PSY F333/WGS F332—Human Sexualities
Across Cultures..... | 3 |
| SOC F335—Deviance and Social Control | 3 |
| SOC/ED F345—Sociology of Education..... | 3 |
| SOC F350W—Sociology of Childhood | 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 required120
- * Students must earn a C- grade or better in each course.
- ** Courses from this group not used toward the major may be applied toward BA general degree requirements where applicable.

Minor

- Complete the following:
SOC F201—Social Problems3
SOC electives.....15
- Minimum credits required18

STATISTICS

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

Minor Only

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.

Minor

- Complete the following:
STAT F200X—Elementary Probability and Statistics (3)
or STAT F300—Statistics (3)3
STAT F401—Regression and Analysis of Variance4
MATH F371—Probability*3
MATH F408—Mathematical Statistics.....3
MATH, STAT or STAT related course work**3
 - Minimum credits required16
- * MATH F371 requires MATH F200X, F201X and F202X as prerequisites.
e.g., BA F360, GEOS F430, ANTH F424, MATH F460, etc.
- ** 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

BT Degree

Minimum Requirements for Degree: 120 credits

This program offers qualified applicants the opportunity to expand upon their vocational/technical education.

The interdisciplinary studies BT 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 — BT Degree

- Complete the general university requirements (page 131).
 - Complete the following BT degree requirements.
ENGL F314W,O/2—Technical Writing3
MATH/CS/STAT elective at the F100-level3
TTCH F301—Technology and Society3
Computer competency.....3
Specialty Electives6
(Advisor-approved upper-division internship or advanced technical experience.)
 - Complete 30 credits of interdisciplinary studies approved by a faculty committee.*
 - 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:
 - 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.
 - Substitute one of the following qualifications in an applied or technical field with the approval of the Curricular Affairs Committee of the Faculty Senate:
 - AAS 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.
 - Minimum credits required120
- * Students must earn a C- grade or better in each course.
Note: At least 39 credits must be F300-level or above.
See Interdisciplinary Studies.

THEATRE

College of Liberal Arts
Department of Theatre and Film
907-474-6590
907-474-7751 Ticket Office
907-474-7048 Fax
www.uaf.edu/theatre/

BA Degree

Minimum Requirements for Degrees: 120 credits

The theatre and film 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.

Additional upper-division credits are required to complete the program.

Major — BA Degree

Concentrations: Design/Technical Theatre, Directing, Performance

1. Complete the general university requirements (page 131).
Please be advised: To graduate, all students must complete 39 upper-division credits. Some of these will be covered by the upper-division required courses for the Theatre, BA, but not all of them. Theatre students will need to take upper-division electives (in Theatre or elsewhere) to complete the upper-division requirement.
2. Complete the BA degree requirements (page 135).
3. Complete the following program (major) requirements:

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—Beginning Costume Construction and Crafts	3
THR F290—Audition or Portfolio Review Participation II	0
THR F291—Audition or Portfolio Review Participation II	0
THR F332—Stage Directing I	3
THR F335—The Collaborative Process	3
THR F411W—Theatre History I	3
4. Complete one of the following concentrations:

Design/Technical Theatre
 - a. Complete the following:

THR/FLM F245—Stage and Film Production Management	3
THR/FLM F271—Let's Make a Movie	3
 - b. Complete three of the following:

THR F343—Scene Design	3
THR/ART F347O—Lighting Design	3
THR F348—Sound Design in the Entertainment Industry	3
THR F356—Costume Design	3
 - c. Complete a minimum of 3 credits of the following:

THR F341—Intermediate Stagecraft	3
THR F354—Intermediate Costume Construction	3
THR F447—Lighting Design II	3
THR F456—Advanced Topics in Costume Design and Construction	3

Directing

- a. Complete the following:

THR F221—Acting II	3
THR/FLM F245—Stage and Film Production Management	3
THR F432—Stage Directing II	3
- b. Complete two of the following:

THR/FLM F271—Let's Make a Movie	3
THR F320—Voice and Speech for the Actor	3
THR F321—Acting III	3
THR/FLM F331—Directing Film/Video	3
THR/ART F347O—Lighting Design	3
THR F343—Scene Design	3
THR F356—Costume Design	3

Performance

- a. Complete the following:

THR F221—Acting II	3
THR F310—Acting for the Camera	3
THR F320—Voice and Speech for the Actor	3
THR F321—Acting III	3
THR F423—Acting IV	3

- b. Complete one of the following:

THR F343—Scene Design	3
THR F347O—Lighting Design	3
THR F348—Sound Design for the Entertainment Industry	3
THR F356—Costume Design	3
5. Minimum credits required

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
- * Students must earn a C- or higher in each course.
- ** 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 strongly encouraged to take at least 3 credits of upper-division theatre practicum to help fulfill the general university requirement of 39 upper-division credits. 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.

WILDLIFE BIOLOGY AND CONSERVATION

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

BS Degree

Minimum Requirements for Degree: 120 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 BS 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 fieldwork. Thus, an unusually good opportunity is available for students to gain experience and to make job connections.

Major — BS Degree

1. Complete the general university requirements. (See page 131. As part of the core curriculum requirements, complete COMM F141X.)
2. Complete the BS degree requirements (page 136).
3. Complete the following program (major) requirements:*

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 F260—Principles of Genetics	4
BIOL F310—Animal Physiology	4
BIOL F317—Comparative Anatomy of Vertebrates	4
BIOL F331—Systematic Botany	4
or BIOL F488—Arctic Plants and Vegetation Ecology-Lecture	2
BIOL F371—Principles of Ecology	4
ENGL F314W,O/2—Technical Writing (3)	
or ENGL F414W—Research Writing (3)	3
WLF F101—Survey of Wildlife Science	1.5
WLF F301—Design of Wildlife Studies	3
WLF F322W—Principles and Techniques of Wildlife Management	3
WLF F410—Wildlife Populations and Their Management	3
WLF F460O/2—Wildlife Nutrition	4

- a. Complete at least one of the following:

BIOL F471—Population Ecology	3
WLF F305—Wildlife Diseases	3
WLF F433—Conservation Genetics	3
WLF F469O—Landscape Ecology and Wildlife Habitat	3

- b. 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)	
or GEOS F101X—The Dynamics of Earth (4)	
or NRM F380W—Soils and the Environment (3)	3 – 4
STAT F200X—Elementary Probability and Statistics (3)**	
or STAT F300—Statistics (3)**	3
STAT F401—Regression and Analysis of Variance***	4

- c. Complete at least one from each of the following pairs:

WLF F420O—Ecology and Management of Birds (3)	
or BIOL F426W,O/2 Ornithology (3)	3
WLF F421—Ecology and Management of Large Mammals (3)	
or BIOL F425—Mammalogy (3)	3

- d. Complete two of the following:*

NRM F204—Public Lands Law and Policy	3
ECON F235—Introduction to Natural Resources Economics	3
NRM F407—Environmental Law	3
HIST F411—Environmental History	3
PS F447—Environmental Politics	3

- e. Complete at least one additional course at the 300-level or higher (3 or 4 credits) in biology, wildlife biology, fisheries or natural resources management.*

4. Minimum credits required120

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

** Satisfies a core requirement.

*** Satisfies a BS degree requirement.

Note: BS 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 BS degree.
2. All prospective biology teachers must complete the following:
BIOL F342—Microbiology4
BIOL F481—Principles of Evolution4
BIOL F303—Principles of Metabolism and Biochemistry (4)
or CHEM F321 and CHEM F322—Organic Chemistry (7) 4 – 7
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 F301—Design of Wildlife Studies3
WLF F410—Wildlife Populations and their Management3
WLF F460 O/2—Wildlife Nutrition4
Approved BIOL and WLF electives*6
2. Minimum credits required15

* Only biology or wildlife electives that are not required for the student's major.
Note: Prerequisites for required courses include BIOL F115X–F116X, BIOL F371, BIOL F310, STAT F200X or F300, and WLF F322W. 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:
WGS F201—Introduction to Women's and Gender Studies3
2. Complete at least 12 additional credits from courses cross-listed with WGS [and that are from two or more disciplines] subject to the approval of a Women's Studies advisor.12
3. Minimum credits required15

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/
Program available at Kuskokwim Campus only

BA 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 — BA Degree

1. Complete the general university requirements (page 131).
 2. Complete the BA 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 F375O—Yup'ik Philosophy and Spirituality (Umyuarteqsaraq)	3
ESK F330W—Central Yup'ik Literature (Yupiit Quliraitnek Igaryaraq)	3
ESK F488W—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 required120
- * Students must earn a C- grade 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. Most professional schools do not require a specific major for admission to their program. However, many courses may be required before admittance into the program, so a student must research admissions requirements carefully.

The Academic Advising Center provides academic advising for all pre-professional areas. The Biology and Wildlife Department and the Chemistry Department provide additional academic advising for the medical, dental, pharmacy, veterinary and allied health pre-professional programs. The Justice Department provides academic advising for law pre-professional programs.

Descriptions of each of the following professions and some information about required undergraduate course work are at www.uaf.edu/advising/preprof/. Contact the Academic Advising Center at 907-474-6396 or uaf.advising@alaska.edu for more information.

- Architecture
- Chiropractic
- Dentistry
- Law
- Library Science
- Medicine (allopathic and osteopathic)
- Museum Studies
- Naturopathic Medicine
- Occupational Therapy
- Optometry
- Pharmacy
- Physical Therapy
- Physician Assistant
- Podiatry
- Speech/Language Pathology
- Veterinary Medicine