Accreditation
- Commission on Colleges of the Northwest Association of Schools and Colleges

Specialized Accreditations
- Accreditation Board for Engineering and Technology
- Accrediting Council on Education in Journalism and Mass Communication
- Alaska State Board of Education through National Association of State Directors of Teacher Education and Certification
- American Assembly of Collegiate Schools of Business
- American Association of Museums
- American Chemical Society
- Computing Sciences Accreditation Board
- Council on Social Work Education
- National Association of Schools of Music
- National Council for Accreditation of Teacher Education

About this Catalog
This catalog offers you a complete guide to studying at the University of Alaska Fairbanks. It includes information on admission and graduation requirements, as well as program and course listings for certificate, associate and bachelor's degree students. You should refer to this catalog for clarification on what's required of you as a UAF student, and for specific information about what's offered on campus. Information on graduate programs is also available; contact the Graduate School for details.

If you're a current or enrolling student, you should also refer to the Class Schedule or the Community Bulletin, which list classes offered, their locations, and when they meet. Schedules and bulletins are available a few weeks before semesters begin.

If you need more information, refer to the directory on Page 2 for a list of UAF offices and phone numbers.

Cover: Mount McKinley, North America's highest mountain, has been a part of the university's heritage since it inspired President Charles Bunnell to create the school motto, ad summum—to the summit—in 1923. © Photo by Kenneth R. Kolodge 1995.

Inside photos taken by John Brecher (page 216), Brenda Gibson (page 1, 14, 36, 39 and 45) and Cal White (page 7, 34 and 104).
Questions? Call or write

| Information | 474-7211
| TTY only | 474-6709
| Academic Computing Services, 428 Library | 474-6564
| Administrative Services, Vice Chancellor for, 206 Administrative Services Center | 474-7340
| Admissions and Records, 1st floor Signers' Hall | 474-7500
| From within Alaska | 1800 474 1UAF
| TTY only | 474-6708
| Advising Center, 5th floor Gruening | 474-6396
| Agricultural and Forestry Experiment Station, 172 Arctic Health Research Building | 474-7083
| Agriculture and Land Resources Management, School of, 172 Arctic Health Research Building | 474-7083
| Alaska Cooperative Extension, Arctic Health Research Building | 474-7246
| Alaska Native Human Resource Development Program, 707 A Street, Room 205, Anchorage, AK 99501 | 272-9531
| Alaska Native Language Center, 218 Eielson | 474-7874
| Alaska Teacher Placement, M-B-S Complex | 474-6644
| Alumni Relations, 201 Constitution Hall | 474-7081
| Arctic Biology, Institute of, 311 Irving | 474-7640
| Arctic Research, Office of, 315 Signers' Hall | 474-7314
| Associated Students of UAF, Wood Center | 474-7355
| Athletics and Recreation, Patty Center | 474-7205
| Bookstore, 2nd floor Constitution Hall | 474-7348
| Bristol Bay Campus, Box 1070, Dillingham, AK 99576 | 842-5109
| Business Office, 1st floor Signers' Hall | 474-7551
| Career Services, 502 Gruening | 474-7596
| Chancellor's Office, 3rd floor Signers' Hall | 474-7112
| Chukchi Campus, Box 297, Kotzebue, AK 99752 | 442-3400
| Computing and Communications, 428 Library | 474-6564
| Conferences and Special Events, 117 Eielson | 474-7800
| Delta Learning Center, Box 412, Delta Junction, AK 99777 | 895-4292
| Development, Office of, 316 Signers' Hall | 474-6402
| Developmental Studies, Downtown Center | 451-7223
| Disabilities, Services for Students with, HS&S Building | 474-5655
| TTY only | 474-1827
| Distance Education, Center for, 129 Harper | 474-5353
| Downtown Center, 310 Second Ave., Fairbanks, AK 99701 | 451-7223
| TTY and voice | 451-1985
| Education, School of, 7th floor Gruening | 474-7341
| Elderhostel, 207 Gruening | 474-6933
| Engineering, School of, 248 Duckering | 474-7330
| Environmental Health and Safety, Old U Park School | 474-5496
| Equal Employment Opportunity, 3rd floor Signers' Hall | 474-6991
| Faculty Senate, 312 Signers' Hall | 474-7964
| Financial Aid, 101 Eielson | 474-7256
| Fisheries and Ocean Sciences, School of, 217 O'Neil | 474-7824
| Fishery Industrial Technology Center, 900 Trident Way, Kodiak, AK 99615 | 486-1500
| Geophysical Institute, Elvey Building | 474-7558
| TTY and voice | 474-7249
| GNOSIS (Library Computing System), 457 Library | 474-6310
| Graduate School, 305 Signers' Hall | 474-7464
| Health and Counseling, Center for, 2nd floor HS&S Building | 474-7043
| TTY only | 474-7045
| Honors Program, 515 Copper Lane | 474-6612
| Hutchison Career Center, 3750 Geist Road, Fairbanks, AK 99709 | 474-5240
| TTY and voice | 474-5249
| Interior-Aleutians Campus, 145 Harper | 474-5439
| International Student Adviser, 514 Gruening | 474-7317
| Juneau Center, School of Fisheries and Ocean Sciences, 11120 Glacier Hwy., Juneau, AK 99801 | 465-6441
| KSUA-FM, 303 Constitution Hall | 474-7054
| Kuskokwim Campus, Box 368, Bethel, AK 99559 | 543-4500
| Learning Resource Center, Downtown Center | 451-7223
| Liberal Arts, College of, 405 Gruening | 474-7481
| Library, Rasmussen | 474-6744
| Management, School of, 201 Bunnell | 474-7461
| Marine Advisory Program, 2225 E. Northern Lights Blvd., Suite 110, Anchorage, AK 99508-4140 | 274-9691
| Marine Science, Institute of, 233 Irving II | 474-7531
| McGrath Center, Box 269, McGrath, AK 99627 | 524-3074
| Mineral Engineering, School of, 209 Brooks | 474-7366
| Mineral Industry Research Laboratory, 212B O'Neil | 474-7135
| Museum, UA | 474-7505
| NANA House | 474-6552
| Native Studies, 508 Gruening | 474-7181
| Natural Sciences, College of, 465 Duckering | 474-7608
| Northern Engineering, Institute of, 248 Duckering | 474-7330
| Northwest Campus, Box 400, Nome, AK 99762 | 443-2201
| Patty Center | 474-5057
| Personnel Services, 108 Administrative Services Center | 474-7700
| Petroleum Development Laboratory, 425 Duckering | 474-7743
| Polar Ice Corrific Office, 205 O'Neil | 474-5585
| Police Department, UAF, HS&S Building | 474-7721
| TTY and voice | 474-7721
| Provoq's Office, 3rd floor Signers' Hall | 474-7096
| Pub, Wood Center | 474-7766
| Residence Life/Housing, 5th floor Gruening | 474-7247
| Rural Alaska Honors Institute, 507 Gruening | 474-6886
| Rural Alaska, College of, 503 Gruening | 474-7106
| Rural Student Services, 5th floor Gruening | 474-7871
| Sea Grant College Program, 304 Eielson | 474-7086
| SLED (Statewide Library Electronic Doorway) | 474-6310
| Small Business Development Center, Downtown Center | 456-1701
| Staff Council, 312 Signers' Hall | 474-7256
| Student Services, 5th floor Gruening | 474-7317
| TTY and voice | 474-6710
| Summer Sessions, 2nd floor Signers' Hall | 474-7021
| Sun Star, Wood Center | 474-7540
| Tanana Valley Campus, Downtown Center | 451-7223
| TTY and voice | 451-1985
| Testing Services, 1st floor Signers' Hall | 474-5277
| Tok Center, Box 464, Tok, AK 99780 | 983-5613
| University Relations and Institutional Advancement, 310 Signers' Hall | 474-7581
| Veterans' Information, 1st floor Signers' Hall | 474-7500
| Women's Center, Walsh Hall | 455-7103
| Wood Center | 474-7211
| Yukon Flats Center, Box 194, Ft. Yukon, AK 99740 | 662-2521

The address for all Fairbanks campus departments is: University of Alaska Fairbanks Fairbanks, Alaska 99775

The area code for UAF offices is (907).
The University of Alaska Fairbanks Experience 4

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>4</td>
</tr>
<tr>
<td>Faculty</td>
<td>5</td>
</tr>
<tr>
<td>UAF Mission Statement</td>
<td>5</td>
</tr>
<tr>
<td>Main Campus in Fairbanks</td>
<td>5</td>
</tr>
<tr>
<td>Fairbanks Area</td>
<td>6</td>
</tr>
<tr>
<td>Branch Campuses</td>
<td>6</td>
</tr>
</tbody>
</table>

**How to Enroll**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applying for Admission</td>
<td>8</td>
</tr>
<tr>
<td>Admission Requirements</td>
<td>8</td>
</tr>
<tr>
<td>Academic Bankruptcy for Returning Students</td>
<td>10</td>
</tr>
<tr>
<td>Course Placement</td>
<td>11</td>
</tr>
<tr>
<td>Transfer of Credit</td>
<td>11</td>
</tr>
<tr>
<td>Transfer Within the UA System</td>
<td>11</td>
</tr>
<tr>
<td>Alternative Ways to Earn Credit</td>
<td>12</td>
</tr>
</tbody>
</table>

**How to Register**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>15</td>
</tr>
</tbody>
</table>

**Academic Regulations**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to Earn a Degree</td>
<td>22</td>
</tr>
<tr>
<td>General University Requirements</td>
<td>22</td>
</tr>
<tr>
<td>Degree Requirements</td>
<td>23</td>
</tr>
<tr>
<td>Certificate Programs</td>
<td>23</td>
</tr>
<tr>
<td>Associate Degrees</td>
<td>23</td>
</tr>
<tr>
<td>Baccalaureate Degrees</td>
<td>23</td>
</tr>
</tbody>
</table>

**Fees and Financial Aid**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>27</td>
</tr>
<tr>
<td>Other Fees Associated with Registration</td>
<td>27</td>
</tr>
<tr>
<td>Other General Fees</td>
<td>28</td>
</tr>
<tr>
<td>Paying Fees</td>
<td>29</td>
</tr>
<tr>
<td>Refunds</td>
<td>29</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>30</td>
</tr>
</tbody>
</table>

**Housing (Residence Life)**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence Halls</td>
<td>35</td>
</tr>
<tr>
<td>Student Family Housing</td>
<td>36</td>
</tr>
</tbody>
</table>

**Student Services: Helping You Stay on Track** 37

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Advising and Career Development</td>
<td>37</td>
</tr>
<tr>
<td>Admissions and Records</td>
<td>38</td>
</tr>
<tr>
<td>Bookstore</td>
<td>38</td>
</tr>
<tr>
<td>Center for Health and Counseling</td>
<td>38</td>
</tr>
<tr>
<td>Orientation Program</td>
<td>39</td>
</tr>
<tr>
<td>Services for Students with Disabilities</td>
<td>39</td>
</tr>
<tr>
<td>Wood Center</td>
<td>39</td>
</tr>
</tbody>
</table>

**Campus Resources: What’s Available** 40

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASUAF</td>
<td>40</td>
</tr>
<tr>
<td>Academic Computing</td>
<td>40</td>
</tr>
<tr>
<td>Alumni Relations</td>
<td>40</td>
</tr>
<tr>
<td>Athletics and Recreation</td>
<td>40</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>41</td>
</tr>
<tr>
<td>Exchange Programs in the U.S. and Abroad</td>
<td>41</td>
</tr>
<tr>
<td>Honor Societies</td>
<td>42</td>
</tr>
<tr>
<td>Honors Program</td>
<td>42</td>
</tr>
<tr>
<td>Library</td>
<td>43</td>
</tr>
<tr>
<td>Museum</td>
<td>43</td>
</tr>
<tr>
<td>Student Support Services/Project</td>
<td>43</td>
</tr>
<tr>
<td>Summer Sessions</td>
<td>43</td>
</tr>
</tbody>
</table>

**Graduate School**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>46</td>
</tr>
</tbody>
</table>

**Colleges and Schools** 47

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degrees and Programs</td>
<td>49</td>
</tr>
</tbody>
</table>

**Course Descriptions** 105

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Register</td>
<td>197</td>
</tr>
<tr>
<td>UA Board of Regents</td>
<td>197</td>
</tr>
<tr>
<td>UAF Administration</td>
<td>197</td>
</tr>
<tr>
<td>Faculty and Staff</td>
<td>197</td>
</tr>
<tr>
<td>Emeriti</td>
<td>212</td>
</tr>
</tbody>
</table>

**Index** 214
The University of Alaska Fairbanks Experience

In 1917, just 15 years after Felix Pedro found gold in the heart of the Alaskan wilderness, the University of Alaska Fairbanks was born. It wasn’t called UAF back then; it was the Alaska Agricultural College and School of Mines, created by a special act of the Alaska Territorial Legislature. In 1922 the college opened, with six faculty members and six students. A year later, commencement was held, in honor of the school’s first graduate.

As Alaska grew, so did the institution. In 1931, the Agricultural Experiment Station (established in 1906 by the U.S. Department of Agriculture on a site that was later to become part of the campus) was transferred from federal ownership to the college. This action established the Agricultural and Forestry Experiment Station and its experiment farm as a unit of the college in line with agricultural experiment stations in other land-grant universities. In 1935, the Territorial Congress decided the school had graduated from a college to something more, and the “University of Alaska” was born.

World War II brought many changes to Alaska. Battles were fought on Alaska soil, the Alaska Highway was built, and the activity spawned the first major migration of people into the state since the gold rush. As people moved to Alaska, so did money, ideas and energy.

In 1946, the Geophysical Institute was established by the U.S. Congress. GI has since earned an international reputation for its studies of the earth and the physical environment at high latitudes. It also operates the Poker Flat Research Range, the only university-owned rocket range in the world.

In 1947, the first summer session was held at the university, symbolizing its growth into a year-round center for knowledge. Ten years later, the university awarded its first Ph.D. All this at the University of Alaska, when Alaska itself had yet to become a state.

Statehood changed the political system for the people who inhabited the vast land mass and waterways known as Alaska. Alaska’s constitution was hammered out in what’s now Constitution Hall on the UAF campus, and the document was signed, fittingly enough, in stately Signers’ Hall, now the home of the UAF administration. Alaska’s admission into the Union in 1959 also coincided with major changes at the university itself.

In 1960, the Institute of Marine Science, a unit of the School of Fisheries and Ocean Sciences, was established by the Alaska Legislature. Its offices are on the main UAF campus, with its principal shore facility in Seward. The Seward Marine Center is also the home port of the RV *Alpha Helix*, a 133-foot research vessel operated by IMS for the National Science Foundation.

Three years later, the Alaska Legislature created the Institute of Arctic Biology. IAB manages the Large Animal Research Station just north of campus, the home of musk oxen, caribou and reindeer.

As the Fairbanks campus expanded, so did the educational needs of the rest of the state. In 1975, the University of Alaska statewide system was created. Campuses in Anchorage and Juneau were given their own central staff and chancellor, with the statewide administration, and the overall university president, still located in Fairbanks. This period of consolidation coincided with rapid expansion and improvement at the university’s main campus in Fairbanks.

The University of Alaska Museum, the most popular man-made visitor attraction in the state, moved into the Otto Geist Building in 1980. More than 100,000 people visit the museum every year, each soaking in just a small portion of the substantial collections organized and displayed at the museum.

In 1981, enrollment topped 5,000 students for the first time. The university also began to emphasize its shared scholarship and global education effort in a series of agreements signed with schools in Japan, Denmark, Canada, the People’s Republic of China and Russia.

Today, UAF continues to grow, both in size and stature. In addition to the main campus in Fairbanks, UAF has branch campuses in Bethel, Dillingham, Kotzebue, Nome and the Interior. UAF provides an important resource to rural Alaskans with its education centers in Fort Yukon, McGrath, Nenana, Tok and Unalaska.

UAF’s School of Fisheries and Ocean Sciences combines programs in Juneau and Kodiak with those in Fairbanks, and administers the Alaska Sea Grant College Program and the Marine Advisory Program.

Public service is an important part of UAF’s mission. The statewide Alaska Cooperative Extension, with 10 field offices, is headquartered at UAF. UAF’s public broadcasting stations KUAC-FM and -TV were the first public stations in the state; the stations offer an important resource for students who can get hands-on experience at the facilities.

UAF is the state’s land-, sea- and space-grant institution. Its rural college has the primary responsibility for Alaska Native education and study, and UAF remains the only university offering doctoral degrees in Alaska. UAF’s colleges and schools offer more than 70 fields of study, and a wide variety of technical and vocational programs.

As it expands the frontiers of knowledge, UAF will continue to play a major role in making Alaska, and the world, a better place to live, to learn and to prosper.

Students

UAF students aren’t afraid to be different. The University of Alaska Fairbanks isn’t the right school for everyone, but if it is for you, you can take advantage of small classes, first-rate faculty and access to hands-on research—not to mention some of the most breathtaking scenery in the world.

UAF’s students come from 50 states and 47 foreign countries, which can make for an exciting educational environment. A freshman from an Alaska village may share insights with a classmate from Tallahassee or even Tokyo in one year, and take advantage of a UAF exchange program located in Canada, Denmark or Japan the next.

As a UAF student, you won’t be bored. There are more than 70 student organizations, and students sponsor the weekly *Sun Star* newspaper, KSUA-FM radio station and scores of special interest groups.

No matter which UAF campus you attend, your credits are fully transferable if you should move to another. This means that you won’t have to worry about transfer requests and losing credits if you switch campuses.
UAF’s enrollment in the fall of 1994 was 9,274 students. Many of UAF’s students are “non-traditional.” They study at night or after work, and juggle family responsibilities and class studies. Recognizing their needs, UAF offers a wide variety of night and weekend classes.

Some UAF students live in remote areas of the state, but they still “attend” UAF classes. Through distance delivery of classes, using computers, telephones and the latest technology, students can work toward their degrees without ever leaving home.

In short, being “different” is almost normal at UAF. All in all, UAF students are a diverse group who aren’t afraid to be different.

If you’re interested in statistics, here are a few about UAF’s student body:

- 56 percent are female, 44 percent are male
- 30 is the average age
- 85 percent are Alaska residents, 12 percent are from other states,
- 3 percent are from foreign countries
- 91 percent are undergraduate students, 9 percent are graduate students

Faculty

UAF’s faculty members are among the best in the country, and with a low student/faculty ratio, you’ll get lots of personal attention. You’ll get more one-on-one attention, in fact, than you would at almost any other public university in the country.

Once you’ve chosen a major, you’ll be assigned a faculty member from your academic department as an adviser. Your adviser can help you choose the classes you take each semester, as well as explain various programs and requirements.

It’s been said that “It’s not what you know, but who you know.” At UAF, students get to know their faculty as friends, and not just as the medium through which an endless stream of facts and figures are delivered for future examination.

Education is an individual process, different for every person—and at UAF, that’s what you’ll be—a person, and not just a face in the crowd.

UAF Mission Statement

The University of Alaska Fairbanks was established in 1917 as the Alaska Agricultural College and School of Mines. Today, as a comprehensive land grant and sea grant university, the multi-campus University of Alaska Fairbanks exists as a vital resource to teach, to inquire and to serve.

The University of Alaska Fairbanks offers instructional programs covering a broad postsecondary spectrum and is the major research center for Alaska. The university is committed to providing a free and open forum where ideas and issues may be professionally pursued and frankly debated in an environment of mutual respect and intellectual integrity. It seeks to provide an intellectually stimulating learning process which is culturally sensitive and empowering to its students. The university is committed to assuring that its graduates receive a balanced education in the arts, humanities, natural and social sciences through which creativity is fostered and historical and philosophic perspectives are gained. As a result, the state benefits from an educated citizenry capable of the independent pursuit of further learning, of contributing to the economic well being of the state and nation and of participating in and contributing to global society. The university seeks a culturally diverse environment that values and promotes equal treatment of sexes, races, cultural and ethnic groups throughout its academic programs, student body, faculty and staff.

The University of Alaska Fairbanks as a residential institution of higher education serves students from all of Alaska as well as from other states and nations. It is particularly committed to enhancing educational opportunities for Alaska’s rural and native populations. Through its branch campuses in Bethel, Kotzebue and Nome and its rural education centers, the university is responsive to local and regional needs, including open educational access to its programs. Special strengths exist in the use of educational technology which provide for the distance delivery of selected programs to many areas of the state. In seeking to serve a broad array of students, admission to several associate degree and certificate programs is open to all. Admission requirements to all baccalaureate and graduate programs as well as some Associate of Applied Science degree programs vary depending on the specific field of study.

The University of Alaska Fairbanks offers developmental programs and certificate, associate, baccalaureate and graduate/professional programs in the arts, sciences, career fields and professions. It is a center for graduate education and is Alaska’s only doctoral-granting institution. It possesses unique strengths in the physical and natural sciences and offers a broad array of engineering programs with a particular emphasis on the stresses of northern environments. UAF is a major center for the study of natural resources including minerals, forestry, wildlife, geology, agriculture, fisheries and ocean sciences and their associated economics. It has been recognized for its work in multi-cultural understanding, rural health problems, and cross-cultural interaction in the human service professions.

As a major center for research and scholarship, the University of Alaska Fairbanks is committed to the mutual enhancement of teaching and research and creative activity, and public service. Scholarship which produces new knowledge instills a vigor into teaching which in turn stimulates inquiry and the quest for further answers to the unknown. The university seeks to use its particular location in the north as a natural laboratory for the study of questions and issues, whose solutions are not only applicable to Alaskan problems but to a broader understanding of our global community. As part of a network of state research universities, this institution has an active program of basic and applied research resulting in a well earned national and international reputation. Specific recognition has been achieved in space physics, marine science, and high latitude biology, environmental sciences, engineering and geophysics. The university has recognized programs in definition, exploration, development and management of Alaska’s renewable and nonrenewable resources. It is the state’s center for study of Alaskan native cultures and languages.

Through its Cooperative Extension Service and Marine Advisory Programs, research results are interpreted and transferred to people of the state. Its continuing education programs extend the expertise of the university to adult learners needing alternative learning opportunities. The university’s library and museum provide the state’s major information resources and cultural collections with a particular strength in Alaska and polar regions. Finally, through its programs in fine and performing arts, the university provides cultural enrichment to the state’s Interior-Alutians and rural populations. In accomplishing this mission, the university seeks the advice and guidance of Alaska’s residents and friends.

Board of Regents Policy 10.020.01, adopted 02-25-88

Since the mission statement was adopted, UAF has added the Bristol Bay and Interior-Alutians Campus sites. UAF was granted space grant status in 1991.

Main Campus in Fairbanks

UAF’s main campus is located in Fairbanks, which is near the center of the state. On the 2,250-acre campus are two lakes and 35 miles of ski trails.

If you’re interested in fitness, the main campus has a major intramural sports program, and the Student Recreation Complex offers areas for basketball, volleyball, badminton, tennis, calisthen-
ics, dance, gymnastics, judo and karate; a rifle and pistol range; courts for handball, racquetball and squash; a jogging track; a swimming pool; weight training and modern fitness equipment areas; an ice arena for recreational skating and hockey; a special aerobics area; and a climbing wall.

Whether you like to play or just watch, UAF sponsors intercollegiate athletics teams in men’s and women’s basketball, men’s and women’s cross-country running and skiing, co-ed riflery, men’s ice hockey and women’s volleyball.

As a UAF student on the main campus, you’ll become very familiar with the Wood Center. The center is the focus of many of UAF’s out-of-class activities. With a pub, snack bar, conference rooms, lounge and games area, Wood Center is a gathering place for the entire university community.

You’ll find some of the best facilities in the state at UAF. Whether you’re a performer or a spectator, you’ll find something to suit your taste going on almost every weekend during the academic year at the Davis Concert Hall or the Salisbury Theater. The Rasmusson Library is Alaska’s largest, and offers traditional ways to access library materials, as well as extensive computer databases to extend the library resources beyond the state. Aside from being among the top 10 visitor attractions in the state, the UA Museum is also a student resource; its vast collections are used for demonstration and comparative studies in classrooms and labs.

The Fairbanks campus is the university’s principal research center, with internationally respected research institutes. As an undergraduate, these institutes provide you with an opportunity to see research in action, and perhaps participate in research activities.

Fairbanks Area

Fairbanks, Alaska’s second largest city, is situated on the banks of the Chena River in the heart of Alaska. The UAF campus is only four miles from the downtown business district, and the university is easily accessible via the local bus system and a network of bike trails.

Steeped in a history of riverboat captains and gold seekers, today Fairbanks is the dynamic, thriving city that helped build the Trans-Alaska Pipeline. Here striking contemporary buildings sit side-by-side with log cabins built in the early part of the century. It's a city where the old quietly blends with the new.

With a population of more than 70,000, the Fairbanks area offers the conveniences of a big city, yet rolling hills and spectacular panoramas are only minutes away.

Literally millions of acres of wilderness surround Fairbanks. Mt. McKinley, the highest mountain in North America, is often visible from many residence hall windows. Whether the sport is canoeing, climbing, running, skiing or fishing, nowhere else compares with Alaska.

Transportation to Fairbanks

Fairbanks is easily accessible by both land and air. Anchorage is only 365 miles away via the Parks Highway or the Alaska Railroad, and Seattle is 2,300 miles away via the Alaska Highway. Major airlines offer several daily flights to Anchorage and Seattle, as well as to many other destinations.

The Alaska Railroad provides all full-time UAF students with a round trip ticket for the price of a one-way ticket. This rate applies to Summer Session students as well as students attending during the regular sessions of the university. To get this special price, students should ask for the special student rate when they purchase their first ticket. When they get to UAF, students need to have their ticket receipts certified by the Office of Admissions and Records when they pay their fees.

Branch Campuses

When the University of Alaska system was restructured in 1987, UAF’s instructional, research and public service programs were expanded throughout Alaska. In addition to the main campus in Fairbanks, UAF now has branch campuses in downtown Fairbanks, Bethel, Dillingham, Kotzebue and Nome, and administers a number of education centers through its Interior-Aleutians Campus. These branches serve rural Alaskans and are central to fulfilling the UAF mission of providing educational opportunities throughout the state.

No matter which UAF campus you attend, your credits are fully transferable among all UAF campuses. This means that you won’t have to worry about transfer requests and losing credits when you switch campuses.

Bristol Bay Campus in Dillingham — The Bristol Bay Campus is administered from Dillingham, with two subregional centers in Naknek and Iliamna. The campus serves 32 villages in an area of approximately 55,000 square miles, with boundaries that stretch south as far as Ivanof Bay, north to Lake Clark and west to Togiak. The campus is located in Dillingham, the region’s hub, 322 air miles from Anchorage and 570 air miles from Fairbanks.

The average enrollment at Bristol Bay Campus ranges from 250 to 300 students. The campus offers an Associate of Arts degree in general studies and Associate of Applied Science degrees in community health practitioner studies, early childhood education and applied small business, as well as course work in support of the UAF Bachelor of Arts degree in rural development and the Bachelor of Education degree through the Cross-Cultural Educational Development (XCED) Program. In addition, vocational and general interest courses are available.

Courses are offered throughout the region by distance delivery, correspondence and itinerant instructors, as well as more traditional methods.

Chukchi Campus in Kotzebue — The Chukchi Campus is located 26 miles north of the Arctic Circle, on the shores of the Chukchi Sea. The campus serves Kotzebue and 10 villages in a region of more than 36,000 square miles. Chukchi offers the Associate of Arts and Associate of Applied Science degrees, as well as courses leading to baccalaureate degrees in education, rural development and social work. Courses are offered by local instructors and through the College of Rural Alaska audioconferencing system.

Interior-Aleutians Campus — The Interior-Aleutians Campus in Fairbanks services 54 towns and village within the Doyon region and the Aleutians/Pribilof Islands, an area of approximately 200,000 square miles. The Interior-Aleutians Campus is the most decentralized of the College of Rural Alaska campuses. Although the director’s office and some faculty are located at the University of Alaska Fairbanks main campus, there are Interior-Aleutians Campus centers in Fort Yukon, McGrath, Tok and Unalaska. Courses are offered throughout the region via distance delivery, on site by local or itinerant instructors and by correspondence. The campus offers a range of degree programs, including the Associate of Arts and several Associate of Applied Science vocationally oriented degrees, as well as skill-building and community interest classes.

Kuskokwim Campus in Bethel — The Kuskokwim Campus is located in what can most accurately be described as a regional center serving an extended community. Bethel, located 80 miles inland on the Kuskokwim River, is a community of approximately 4,000 and serves as the transportation and service center of the region. Housing is available on campus in Sackett Hall, which provides full-service apartments with space for four students in each.

Northwest Campus in Nome — This campus serves not only
the residents of Nome, but also the people in the 15 Eskimo villages surrounding Nome. Northwest offers a general program with courses leading to three baccalaureate degrees: education, social work and rural development, as well as Associate of Arts and Associate of Applied Science degrees. Vocational and applied courses involve about half the student body.

**Tanana Valley Campus in Fairbanks** — The Tanana Valley Campus provides general education at the certificate and associate degree levels, as well as vocational/technical training. UAF’s Downtown Center in Fairbanks is headquarters for the Tanana Valley Campus. You can take classes at the center which focus on business, computers, office professions and general developmental education. Computer labs and an office lab are also located at the center. The Hutchison Career Center, an integral part of the Tanana Valley Campus, located on Geist Road near the main campus, is the home of several vocational/technical programs. With more than 12,000 square feet of shop, classroom and office areas, the space is organized and equipped for skill development.

---

Sled dog teams race by the UAF Downtown Center—headquarters of the Tanana Valley Campus—each March during the Open North American Sled Dog Race, part of Winter Carnival.
How to Enroll

Applying for Admission

When to Apply
If you’re a high school senior, you should apply for admission during the first semester of your senior year. If you’re a transfer student, you should apply six to nine months before the beginning of the semester in which you plan to enroll. You need to send your application by August 1 for the fall semester and December 1 for the spring semester. If you send your application after the deadlines, it will be processed as time permits.

You may reserve on-campus housing when your application for admission has been accepted. If you’re interested in single student housing, you should send your application materials at least six months before you plan to enroll. For information on married student housing, contact the UAF Housing Office.

How to Apply
You can get application forms from the Office of Admissions and Records. The following must be received by the Office of Admissions and Records before your application will be considered:

1. Application for Admission — A $35 non-refundable processing fee must accompany your application.
2. Transcripts — If you haven’t enrolled in a college or university before, you must have your official high school transcript sent to the Office of Admissions and Records.
   If you’ve attended other colleges and/or universities, you must request official transcripts from each college or university you attended. The transcripts should be sent to the Office of Admissions and Records by the schools. TRANSCRIPTS WILL NOT BE ACCEPTED IF YOU SUBMIT THEM.
   If you’re a transfer applicant with less than 30 semester hours of credit, you must submit your high school transcript as well as college transcripts.
3. Test Results — If you’re an entering freshman in a bachelor’s degree program, you must submit the results of either the ACT or SAT examinations. Being accepted to UAF doesn’t depend on minimum test scores; however, these test scores are used to determine your placement in English, mathematics and other freshman level courses. It’s your responsibility to have the test results sent to the Office of Admissions and Records.
   If you’re applying for admission to an associate degree program or to a certificate program requiring English or mathematics, you must submit the results of the SAT, ACT or ASSET test.
   If you qualify for an associate or baccalaureate program, and have transferred in 30 semester hours of credit which include appropriate courses in English and mathematics, you don’t need to submit test results.
   You can get information on ACT or SAT testing centers, ASSET testing, test dates and obtaining test results, from your high school or from the UAF Testing Office.

Conditional and Final Acceptance
If you’re a qualified applicant, a letter of acceptance will be mailed to you once the above items are received and processed. Your letter of acceptance will spell out any conditions under which you are being admitted.

If you’re a qualified applicant in your last year of high school, or attending another college, your acceptance will be conditional until official transcripts are received which show you have satisfactorily completed the work in progress and, if you’re a high school senior, that you have graduated.

Your acceptance to UAF is final only when all your credentials have been accepted by the Office of Admissions and Records.

Being accepted at UAF constitutes an agreement of mutual responsibility. You agree to abide by the rules and policies and to act in a responsible, mature manner. The university’s contribution is to provide an appropriate academic atmosphere.

Immunization Policy
If you’re a new student accepted for nine or more credits and/or live in university housing, you must submit the following:

1. A completed health inventory form to be submitted to the Center for Health and Counseling;
2. Negative tuberculin skin test or chest X-ray results;
3. Written proof from a medical authority of immunity to:
   a. Rubella (measles)
   b. Rubella
   c. Diphtheria and Tetanus
   d. Polio

Your registration may be withheld for your second semester until these items are submitted.

Admission Requirements

Freshman
To qualify for admission as a freshman, you must meet one of the following:

Associate Degree
For admission to associate degree programs, you must be at least 18 years old or have earned a high school diploma or successfully completed the GED examination.

If you’re an associate degree or certificate student in good standing with a high school diploma or its equivalent, and later wish to enter a baccalaureate degree program, you may be admitted after earning, with a “C” average, 14 credits at the 100 level or above, of which nine credits must satisfy general baccalaureate degree requirements.

Baccalaureate Degree (Bachelor’s Degree)

A. For admission to a baccalaureate degree program, you must have graduated from high school with an overall grade point average (GPA) of 2.0 (C) or higher. Your admission to a specific baccalaureate degree program is based on a combination of your
high school grade point average and your completion of specific high school courses.

In addition, you must complete, with a minimum grade point average of 2.5, a high school core curriculum of at least 16 academic units. The units must include four credits in English, three in college preparatory mathematics (selected from Algebra I, II, geometry, trigonometry, elementary functions, precalculus or calculus), three in social sciences and three in natural or physical sciences (including at least one laboratory course in biology, chemistry or physics). Two years of study in a non-English language are strongly recommended.

Test results from the ACT or SAT must be received before you can be admitted.

B. If you’ve graduated from high school with a satisfactory GPA, but don’t meet minimum entrance requirements for the baccalaureate degree, you may be provisionally accepted provided you make up deficiencies by earning at least a “C” grade in each of the appropriate developmental or university courses, and complete nine credits of general baccalaureate degree requirements with a grade of “C” in each course.

C. If you haven’t graduated from high school, are 18 years of age or older, or if you completed high school by passing the G.E.D test or its equivalent, or if you do not meet admission requirements, you may be considered for restricted admission to a baccalaureate degree program on a case-by-case basis. You will need to provide for review supporting evidence of your academic ability including test results from either the ACT or SAT examinations.

Transfer Students

If you’re an applicant who has attended other accredited institutions, you are eligible for admission if you have a 2.0 GPA in your previous college work and an honorable dismissal from previous schools. If you’re applying to a technical or scientific program, you may need to present a higher grade average and proof that you’ve completed appropriate background courses before you will be admitted to the program. If you’re transferring in with fewer than 30 semester hours of transferable credit, you must also have a high school GPA of 2.0 or higher and must complete the ACT or SAT before registering. If you have attended an unaccredited postsecondary institution, your admission status will be determined on an individual basis.

International Students

If you’re an international student or a recent immigrant to the United States, additional admission requirements apply to you:

A. English Language Proficiency Policy: In addition to meeting regular admission requirements, you must be able to read, write and speak English well enough to successfully complete your program.

TOEFL Test Requirements

1. If you’re from a country where English is not the native language, you must present a satisfactory score on the Test of English as a Foreign Language (TOEFL). You can’t use any other proof of English competency (such as English credits from other schools).

2. If you’re a permanent resident on an immigrant visa, a TOEFL score is required if all your formal education is from a country where English is not the primary language, or when the documents presented for admission don’t clearly indicate your proficiency in English.

3. You must present a TOEFL score of at least 550.
B. Other Requirements

1. When preparing the I-20 form that is necessary to obtain an F-1 (student) visa, the university must certify to the Immigration and Naturalization Service that you have been accepted for full-time enrollment and that you have funds to meet estimated expenses for one academic year. If you’re in the U.S. on an F-1 visa, you must maintain a full-time course load; you may not enroll as a part-time student (less than 12 credits per semester).

2. You must sign a statement that funds are available to pay all expenses while you attend UAF, as well as the amount needed for round trip transportation between your home and Alaska. The minimum cost for attending UAF for one school year is $12,000. This amount covers university fees, room and board on campus, and a reasonable amount of personal expenses. It does not include transportation to and from Alaska, summer living or cold weather clothing costs. Since the application for the F-1 visa requires affirmation that you don’t intend to live in the United States permanently, you aren’t eligible for resident tuition fees.

3. Your application should reach Admissions and Records by March 1 for the fall semester or October 1 for the spring semester. Your application must be completed and accepted by August 1 for the fall semester and December 1 for the spring semester in order to allow time for your I-20 form to be issued. You can’t reserve on-campus housing until your application for admission has been accepted. If you’re interested in single student housing, you should file your application materials at least eight months before you plan to enroll.

Readmission of Former Degree-Seeking Students

As an undergraduate degree student, if you don’t enroll for a semester or more, or if you enroll through the non-degree student registration process, you need to notify the Office of Admissions and Records in advance when you plan to resume studies in your degree program.

If you left UAF in good standing, haven’t enrolled in an institution outside the University of Alaska system, and haven’t been absent more than two years, you must request readmission and an update of your degree status before you register. No processing fee is required if your readmission update is received by Aug. 1 for the fall semester and Dec. 1 for the spring semester. Requests for readmission received after these dates must be accompanied by a $35 fee and will be processed if time permits.

If you were on probation at UAF, or were enrolled in an institution outside the UA system, or if it’s been more than two years since you were last enrolled in your degree program at UAF, you will need to submit the regular undergraduate application for admission form, pay the $35 processing fee and submit official transcripts from any colleges or universities you attended since you last enrolled at UAF.

If you’re a UAF graduate and are seeking to enter a second undergraduate degree program, you must submit an undergraduate application for admission. If you’re a UAF associate or certificate student and you wish to enter a bachelor’s degree program, you will have to submit an application for admission.

Non-Degree Students

If you wish to attend UAF, but not as a degree student, you must be a high school graduate, or at least 18 years old. As a “non-degree student,” you are subject to the placement examination requirements for freshman courses. You must maintain a 2.0 GPA to remain in good standing. You won’t be considered a degree candidate until you’ve met regular admission requirements and filed transcripts. As a non-degree student you aren’t eligible for financial aid or priority registration.

High School Students

If you’re a qualified high school student, you may enroll in one or two UAF courses while you’re still in high school. To enroll, you must present written approval from your high school counselor or principal and your parents, and an official transcript indicating a satisfactory GPA in your high school work. If you’re a high school senior with a GPA of at least 2.5, you may register for two courses for a maximum of six credits. If your GPA is between 2.0 and 2.5, you may register for one course each semester. If you’re a junior with a GPA of at least 2.75, you may register for one course each semester.

If you’re an academically exceptional freshman or sophomore high school student, you may register for one course each semester with the approval of the Director of Admissions and Records. You must submit all of the documents listed above. You may continue to take UAF courses as long as your high school and college grades are satisfactory and you have permission from your high school principal or counselor and from your parents each time you enroll. Students in elementary, junior high or middle school are not eligible to register for UAF classes.

Students with Bachelor’s Degrees

If you hold a bachelor’s degree but have not defined or declared your graduate program, you may enroll as a non-degree student if space permits. You’re in this category if you are:

1. Planning to take “interest courses.”
2. Strengthening your preparation in order to be admitted to graduate study.
3. A transient student expecting to be at UAF only briefly.
4. Awaiting action on applications for graduate status.

Second Bachelor’s Degree Programs — If you wish to complete a second bachelor’s degree, you must apply for admission as an undergraduate transfer student.

Academic Bankruptcy for Returning Students

If you performed at an academic level which made you ineligible to continue your studies at UAF, and dropped out or were dismissed from school, academic bankruptcy can offer you a new undergraduate start.

When you want to resume your college work but find your previous UAF academic record an obstacle, you may apply for readmission on the basis that your prior academic record be disregarded. You begin your college study again with no credits attempted, no credits earned and no quality points reflected in subsequent grade point average calculations. You may use academic bankruptcy only once. You may request academic bankruptcy for records from present UAF units which were not part of UAF prior to fall 1987.

To declare academic bankruptcy, you must submit an Application for Academic Bankruptcy form and receive the approval of the dean of the college or school to which you are being admitted or readmitted. Before applying for admission on this basis, at least two years must have elapsed since the end of the last full-time semester you attended. Academic bankruptcy application forms are available at the Admissions and Records Office.

Your prior academic record remains a part of your overall academic record and appears on your transcript, but none of the credits you earned previously can be used in your new program. The only
time these credits will be included, however, is in GPA computations for graduation with honors (See "Graduation with Honors"). You may be allowed advanced standing or a waiver of requirements just as any non-bankrupt student, but you won't be allowed credit-by-examination for courses lost in bankruptcy.

Course Placement

English and Mathematics

On the basis of test scores, if your background appears to be deficient in English and mathematics, you may be required to take remedial English and mathematics or both in addition to curriculum requirements. The basic English and mathematics courses are especially designed to help you achieve competency in the least amount of time.

Generally, you will be placed in ENGL 111 if both your ACT English and composite scores are 16 or above, if your enhanced ACT (EACT) English score is 18 and your composite score is 19, or if you have an SAT English score of 350 or above and a combined SAT score of 720 or above.

Transfer of Credit

Credit accepted for transfer to UAF which has been earned at other regionally accredited institutions, through military educational experiences or credit accepted by special approval, is considered transfer credit. Where possible, transfer credit is equated with UAF courses.

The following regulations apply to transfer of credit:
1. You're only eligible for transfer of credit if you're an undergraduate degree or certificate candidate.
2. The applicability of transfer credit to your major and/or minor requirements must be approved by your major and/or minor department. As a transfer student, you must fulfill the UAF graduation and residency requirements, including those required for a particular program.
3. Undergraduate credits earned at the 100-level or above with a grade of "C" or higher at institutions accredited by one of the six regional accrediting agencies, will be considered for transfer. Transfer credit normally isn't granted for courses with doctrinal religious content or for graduate courses (for undergraduate programs). Credit is not transferred for advanced placement credit or credit by examination awarded by another institution.
4. Transfer credit is not included in computing your UAF grade point average.
5. Your class standing is based on the number of credits UAF accepts of your previous college work.
6. Credits may be awarded for formal service schooling and military occupational specialties (MOS) based on recommendations in the "Guide to the Evaluation of Educational Experience," published by the American Council on Education. A total of 49 credits from these sources can be applied toward your associate or bachelor's degree. Credit completed through the Community College of the Air Force or in Department of Defense courses are included in the category of military experience.
7. You will be awarded credit for your government and professional certifications which have been reviewed and approved for designated course equivalencies at UAF. A list of these programs is available in the Office of Admissions and Records.
8. Credit may also be awarded for satisfactory completion of training programs, based on recommendations of the American Council on Education and the National Program on non-Collegiate Sponsored Instruction. The award of credit is subject to review and approval of appropriate UAF faculty.
9. You may request special review for approval of transfer credit not meeting the requirements above by contacting the Office of Admissions and Records.

Transfer Within the UA System

In order to serve students who transfer among the three institutions that make up the University of Alaska system, UAF, UAA and UAS have identified fully transferable general education requirements for their baccalaureate degrees. These include:

<table>
<thead>
<tr>
<th>Category</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written communication skills</td>
<td>6</td>
</tr>
<tr>
<td>Oral communication skills</td>
<td>3</td>
</tr>
<tr>
<td>Humanities/social sciences/fine arts</td>
<td>15</td>
</tr>
<tr>
<td>Quantitative skills/natural sciences</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>34</td>
</tr>
</tbody>
</table>
Credit for course work successfully completed at one UA institution toward fulfillment of the general education requirements at that institution shall transfer toward fulfillment of the same categories at all other University of Alaska institutions. This applies even if there is no directly matching course work at the institution to which the student transfers. If you are a transfer student from either UAA or UAS who has completed fully all general education requirements prior to transfer to UAF you will be considered to have completed all requirements of the UAF baccalaureate core. If you are a transfer student who has not completed all general education requirements, courses taken to complete those requirements at UAA or UAS will meet UAF baccalaureate core requirements according to the current table of substitutions for intra-UA transfers. (You may obtain a copy of the current table from the Admissions and Records office at UAF, UAA or UAS.)

Completion of the 35-credit lower division requirements (100- and 200-level courses) of the UAF baccalaureate core will meet the general education requirements at the University of Alaska Anchorage and the University of Alaska Southeast.

### Alternative Ways to Earn Credit

#### Advanced Placement Credit

Advanced placement credit is awarded based on national or departmental placement examinations. Methods and standards for awarding advanced placement credit are listed below.

#### Local Advanced Placement Credit

**English** — Only freshmen with appropriate test scores may receive local advanced placement credit in English. If you’re an incoming freshman with:

1. an English ACT score of 26 or higher or
2. an English enhanced ACT (EACT) score of 30 or higher or
3. a verbal SAT score of 600 or higher (or 670 on the Recentered Scale),

you may receive credit for ENGL 111X by:

1. enrolling in a 200- or 300-level literature course at UAF and completing it with a grade of "C" or better or
2. waiting until you have sophomore standing (30 credits or more) and completing ENGL 211X or 213X with a grade of "C" or better.

You must submit an “application for ENGL 111X credit” form to the Office of Admissions and Records at the end of the semester in which you completed an advanced English course.

**Foreign Language** — If you have previous exposure to a language outside of college, and want to continue studying that language, you will need to take a placement test. See Course Placement.

After completing the course in which you were placed (above 101) and earning a grade of "C" or higher, you may ask to receive “bonus credit” for the two immediately preceding prerequisite courses, if any. However, credit cannot be awarded for such courses if university credit has already been granted for them (for example, through College Board A.P. national tests or credit transfer from another college). Bonus credit will not awarded for special topics courses, individual study courses, literature or culture courses.

**Mathematics** — If you are placed in an advanced math course and you complete MATH 201, 202, 273 or 302 at UAF with a grade of "C" or better, you may also receive credit for any prerequisite calculus course. See “Course Placement.”
College Board Advanced Placement

UAF grants advanced credit, with waiver of fees, for a score of three or higher in the College Board (CEEB) Advanced Placement Tests. Normally, you take these tests during your senior year in high school.

To receive CEEB Advanced Placement credit, you must request that an official report of your examination scores be sent to the Office of Admissions and Records. When you enroll, you will be awarded appropriate credit. You may receive credit for more than one Advanced Placement examination.

<table>
<thead>
<tr>
<th>CEEB Examination</th>
<th>UAF Course Equivalent</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Govt &amp; Politics</td>
<td>PS 101</td>
<td>3</td>
</tr>
<tr>
<td>American History</td>
<td>HIST 131/132</td>
<td>6</td>
</tr>
<tr>
<td>Art: History</td>
<td>ART 261/262</td>
<td>6</td>
</tr>
<tr>
<td>Art: Studio (drawing)</td>
<td>ART electives</td>
<td>6</td>
</tr>
<tr>
<td>Art: Studio (gen portfolio)</td>
<td>ART electives</td>
<td>6</td>
</tr>
<tr>
<td>Biology</td>
<td>BIOL 105X/106X</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry</td>
<td>CHEM 105X/106X</td>
<td>8</td>
</tr>
<tr>
<td>Classics: Virgil (Level 3)</td>
<td>LANG electives</td>
<td>8</td>
</tr>
<tr>
<td>Classics: Latin Lyric</td>
<td>LANG electives</td>
<td>8</td>
</tr>
<tr>
<td>Comparative Govt &amp; Politics</td>
<td>PS 201</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science A</td>
<td>CS 201</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science AB</td>
<td>CS 201/202</td>
<td>6</td>
</tr>
<tr>
<td>Economics-Macro</td>
<td>ECON 202</td>
<td>3</td>
</tr>
<tr>
<td>English Lit &amp; Comp</td>
<td>ENGL 111X</td>
<td>3</td>
</tr>
<tr>
<td>English Lang &amp; Comp</td>
<td>ENGL 111X</td>
<td>3</td>
</tr>
<tr>
<td>European History</td>
<td>HIST 101/102</td>
<td>6</td>
</tr>
<tr>
<td>French Language</td>
<td>FREN 101/102</td>
<td>10</td>
</tr>
<tr>
<td>French Literature</td>
<td>FREN elective (200 level)</td>
<td>2</td>
</tr>
<tr>
<td>German Language</td>
<td>GER 101/102</td>
<td>10</td>
</tr>
<tr>
<td>Math: Calculus AB</td>
<td>MATH 200X</td>
<td>4</td>
</tr>
<tr>
<td>Math: Calculus BC</td>
<td>MATH 200X/201X</td>
<td>8</td>
</tr>
<tr>
<td>Music Listening &amp; Literature</td>
<td>MUS 123</td>
<td>3</td>
</tr>
<tr>
<td>Music electives</td>
<td>MUS electives</td>
<td>3</td>
</tr>
<tr>
<td>Music Theory</td>
<td>MUS 131/132/133/134</td>
<td>8</td>
</tr>
<tr>
<td>Physics B</td>
<td>PHYS 103X/104X</td>
<td>8</td>
</tr>
<tr>
<td>Physics C: Mechanics</td>
<td>PHYS 211X</td>
<td>4</td>
</tr>
<tr>
<td>Physics Elec &amp; Mag</td>
<td>PHYS 212X</td>
<td>4</td>
</tr>
<tr>
<td>Psychology</td>
<td>PSY 101</td>
<td>3</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>SPAN 101/102</td>
<td>10</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>SPAN 101/102</td>
<td>10</td>
</tr>
<tr>
<td>Spanish Literature</td>
<td>SPAN 201</td>
<td>3</td>
</tr>
</tbody>
</table>

X = Course meets baccalaureate core requirement. Students should consult the “Table of Substitutions” to determine what other courses may meet baccalaureate core requirements.

Credit by Examination

There are several ways that you can earn college credit by receiving a passing score on an exam. For any of the credit by exam options, grades are not computed in the GPA. Credit by examination is not considered UAF residence credit, and is not considered as part of the semester course load for full-time classification.

You will only be awarded credit by examination if you’re currently enrolled, or if you were previously enrolled at UAF as a degree student.

The credit by examination options are briefly outlined below. More information can be obtained from the UAF Testing Services Office.

A. CLEP (College Level Examination Program)

CLEP is a national testing program that awards college credit for some introductory courses. The exams cost $40 each, and are administered by appointment. To register for a CLEP exam or to receive more information, contact Testing Services.

The following criteria apply to CLEP General Exams:
1. If you’ve earned as many as six semester credits in an area covered by a CLEP General Exam, no credit will be awarded for successfully completing that exam.
2. UAF currently accepts credit for all five CLEP General Exams listed below.

**English Composition w/Essay** — Three credits for ENGL 111X are granted for a 500 score.

**Humanities** — Six humanities elective credits are granted for a 500 score.

**Mathematics** — Three mathematics elective credits are granted for a 500 score.

**Natural Sciences** — Six natural science elective credits are granted for a 500 score.

**Social Sciences/History** — Six social science elective credits are granted for a 500 score.

The following criteria apply to CLEP Subject Exams:
1. You may not duplicate a course for which you’ve already been given credit, or for which you’re currently enrolled.
2. If you’ve audited a course, you can’t take the CLEP Subject Exam for that course for one year.
3. The minimum passing scores for approved CLEP Subject Exams is 50 with the exception of the listed foreign languages. French Level I minimum score is 42; Level II - 50; German Level I - 44; Level II - 55; Spanish Level I - 45; Level II - 55.

### CLEP Subject Exams Currently Accepted

<table>
<thead>
<tr>
<th>Test Name</th>
<th>UAF Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Government</td>
<td>PS 101</td>
<td>3</td>
</tr>
<tr>
<td>American History I</td>
<td>HIST 131</td>
<td>3</td>
</tr>
<tr>
<td>American History II</td>
<td>HIST 132</td>
<td>3</td>
</tr>
<tr>
<td>Biology</td>
<td>BIOL 105X/106X*</td>
<td>8</td>
</tr>
<tr>
<td>Calculus w/Elem. Functions</td>
<td>MATH 200</td>
<td>4</td>
</tr>
<tr>
<td>College Algebra</td>
<td>MATH 107 or 161</td>
<td>3</td>
</tr>
<tr>
<td>College Algebra/Trig.</td>
<td>MATH 107/108</td>
<td>5</td>
</tr>
<tr>
<td>Educational Psychology</td>
<td>ED 330</td>
<td>3</td>
</tr>
<tr>
<td>French/Level I</td>
<td>FREN 101/102</td>
<td>10</td>
</tr>
<tr>
<td>French/Level II</td>
<td>FREN 201/202</td>
<td>6</td>
</tr>
<tr>
<td>General Chemistry</td>
<td>CHEM 105X/106X</td>
<td>8</td>
</tr>
<tr>
<td>General Psychology</td>
<td>PSY 101</td>
<td>3</td>
</tr>
<tr>
<td>German/Level I</td>
<td>GER 101/102</td>
<td>10</td>
</tr>
<tr>
<td>German/Level II</td>
<td>GER 201/202</td>
<td>6</td>
</tr>
<tr>
<td>Human Growth &amp; Devmt.</td>
<td>PSY 240</td>
<td>3</td>
</tr>
<tr>
<td>Info. Syst. &amp; Computer Apps.</td>
<td>AJS 310</td>
<td>3</td>
</tr>
<tr>
<td>Intro. Accounting</td>
<td>ACCT 101</td>
<td>3</td>
</tr>
<tr>
<td>Intro. Business Law</td>
<td>BA 330</td>
<td>4</td>
</tr>
<tr>
<td>Intro. Marketing</td>
<td>BA 343</td>
<td>3</td>
</tr>
<tr>
<td>Intro. Microeconomics</td>
<td>ECON 201</td>
<td>3</td>
</tr>
<tr>
<td>Intro. Macroeconomics</td>
<td>ECON 202</td>
<td>3</td>
</tr>
<tr>
<td>Intro. Sociology</td>
<td>SOC 101</td>
<td>3</td>
</tr>
<tr>
<td>Spanish/Level I</td>
<td>SPAN 101/102</td>
<td>10</td>
</tr>
<tr>
<td>Spanish/Level II</td>
<td>SPAN 201/202</td>
<td>6</td>
</tr>
<tr>
<td>Trigonometry</td>
<td>MATH 108</td>
<td>2</td>
</tr>
<tr>
<td>Western Civilization I</td>
<td>HIST 101</td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization II</td>
<td>HIST 102</td>
<td>3</td>
</tr>
</tbody>
</table>

* Laboratory experience required
** Minimum score required varies on each subject level

B. DANTES-DSST (Standardized Subject Tests)

DSST is a national testing program which offers exams in traditional academic, vocational/technical and business subject areas. Although UAF doesn't administer the exams, credit is awarded for successfully completing DANTES tests as recommended by the American Council of Education. Acceptance of the DANTES exam for a specific catalog course or as a major/minor requirement is subject to departmental approval.
C. Local Credit by Exam Program
You can be awarded credit through the local credit by exam program if you’re currently enrolled. Subject to departmental approval, most courses are available for credit by exam, except those with numbers ending -90 through -99 (193, 292, 497, etc.). A course challenged for credit can’t duplicate a course for which you’ve already been granted credit, or for which you are currently enrolled. If you’ve audited a class, you can’t request credit by examination for that class until one year has passed since the end of the semester in which you audited the course.

As part of the application process, you and your instructor will agree on the topics to be covered, the type of exam, the date of the exam and the grading method. You must complete the examination within 90 days of applying. If you miss this deadline, you’ll have to reapply and pay an additional fee.

The nonrefundable fee is $40 per credit hour for undergraduate and graduate courses. Contact the Testing Services Office to obtain credit by examination forms or for more information on challenging a course.

Independent Learning
The Independent Learning Program, administered by the Center for Distance Education and Independent Learning, offers an alternative for people who seek a college education but cannot attend classes. The unique advantage of independent learning (correspondence study) is its flexibility. You select your own hours of study and work at your own pace in surroundings you choose. Independent learning offers you the freedom to structure a personal academic schedule and continue educational progress even when personal circumstances make it impossible to attend scheduled classes.

For UAF students, UAF independent learning courses count as residence credit. When you enroll in an independent learning course during the regular semester enrollment period and complete the course during the same semester, the course may be used in determining full-time/part-time status, consolidated tuition, and eligibility for financial aid and scholastic action. The grade will average in the semester and cumulative grade point averages. When you enroll in an independent learning course at other times of the year, the credit and grade will not impact the credit load or semester grade point average for any other UAF semester enrollments.

An Independent Learning Program catalog detailing policies regarding enrollment, transfer, withdrawal, extension, reinstatement, fees, materials and course descriptions is available from the Center for Distance Education and Independent Learning, 130 Harper Building, (907) 474-5353; fax (907) 474-5402; Internet: SYCDE@orca.alaska.edu.

Credit for Prior Learning
In acknowledging that individuals learn a great deal outside the walls of educational institutions, some UAF departments participate in a program where up to 25 percent of the total credit requirements may be granted to you for prior learning if you’re an enrolled certificate, associate or bachelor’s degree student. Credentials are reviewed by faculty from participating departments who make recommendations for awarding prior learning credit for specific courses that will apply toward certificate, associate or baccalaureate degree requirements. Credit received for prior learning doesn’t impact your GPA and is not considered as residence credit. For further information concerning credit for prior learning, contact the Advising Center at the Fairbanks campus. The university will award transfer credit for specified national and state authorizations, certificates, credentials and/or examinations (see “Transfer of Credit.”) which don’t need to be reviewed for credit for prior learning.
How to Register

Registration

You must register and pay your fees to attend classes and earn credit. Registration is held at the beginning of each semester on dates published in the academic calendar (see the inside front cover). For special programs, short courses, seminars and other classes that aren’t part of the regular academic calendar, registration is held as needed.

Placement Tests

Results from American College Testing Program (ACT) or the Scholastic Aptitude Test (SAT) tests, or, for associate degree or certificate student, the ASSET test, are required if you’re a first-time degree or certificate student, a transfer student with less than 30 acceptable credits, or planning to take 100-level written communication or mathematics courses. A placement test is recommended for all first-time students. The test results must be on file with the Office of Admissions and Records before you can register. Contact the UAF Testing Office for further information.

To determine the best options, alternatives and sequences of classes to take, you should discuss your course selections early with your adviser (all degree and certificate students are required to have an adviser). Your adviser’s signature is needed to enter the registration process.

Non-degree students may also see an adviser, and it is recommended for those taking nine or more credits in a semester, or for those who have accumulated 30 or more UAF credits.

Registration Drop Policy

You’re expected to begin attending classes on the first day of instruction. In order to identify potentially available spaces in courses, departments may require that you attend the first class session or notify the department in advance that you can’t attend the first class. If you miss the first class without notifying the department, you may be dropped from the course and the space assigned to a student on the waiting list.

At the Fairbanks campus, the class schedule provides information on which courses use the registration drop policy. After the first class session, lists of the names of the students who are to be dropped from classes are forwarded by the department head to the Office of Admissions and Records so the course can be removed from the students’ enrollment files.

Because of the high demand for these courses, if you don’t attend the first two meetings of a composition course (ENGL 111X, 211X, 213X, 313 or 414), or the first two meetings of a basic speech course (COMM 131X or 141X), you will be dropped from the class even if you registered in advance.

If space becomes available in a class from which you have been dropped by the department, you will have to follow the drop/add procedure to add the course.

Credit-No-Credit Option

The credit-no-credit option encourages you to explore areas of interest not necessarily related to your major.

You may elect the credit-no-credit option for one undesignated elective each semester during the first two weeks of the semester. The instructor doesn’t know your status in the course, and you complete the course the same way as other students in the class. Credit for the course is awarded if your performance is at the “C” level or higher; if your performance falls below that level, the course will not be recorded on your academic record. In either case, the course won’t be included in any GPA calculations and, if credit is granted, a grade of “CR” will be entered for the course.

Elective courses taken to complete general university requirements or to meet the minimum credit requirements for the degree may be taken under this option. Major or minor requirements and those specified as foundation courses aren’t allowed under this option.

Auditing

If you want to enroll in one or more courses for informational purposes only, you may register as an auditor if there is space in the class. You pay the standard credit fees for the course, but the credits are not included in the computation of study load for full-time/part-time determination or for overload status.

The requirement, acceptance and review of work, and lab privileges are at the discretion of the instructor. No grades are given, no credit is awarded and audited courses don’t apply toward degree requirements, nor will they transfer to other institutions.

If you want to audit a course, you should indicate that at registration on your registration form.

If you want to change from audit to credit, you must request that before the deadline to add a course; changing from credit to audit made subsequent to the third Friday after classes begin must be approved by the instructor of the course. All changes must be made before the deadline for student-initiated withdrawals.

Instructors set the requirements under which an “AU” is to be recorded, and submit “AU” for auditors who satisfy the requirements. Auditors not receiving a grade of “AU” receive a “W.”

If you’ve audited a class, you can’t request local credit by examination for that class for one year.

Adding, Dropping and Withdrawing from Classes

If you wish to add, drop or withdraw from a class, you will need to follow the add/drop procedure. Your academic adviser must sign the appropriate form for either an add or drop unless you are a non-degree student. Instructors’ signatures aren’t required for a drop or withdrawal and the instructor will be notified of your drop or withdrawal by the Office of Admissions and Records. When you drop or withdraw from a class or classes, your signature is required. Information about the add/drop process and forms may be obtained from the Office of Admissions and Records. Added, drops and withdrawals are not final until you have completed the appropriate procedure, paid any additional fees that are due and turned in all completed paperwork to the Admissions and Records office.

Adding a Class — You may add classes to your scheduled until the end of the published late registration period. If you are on a wait list for a class and have kept up with class activity, as vacancies occur
you may be allowed to register for the class until the fourth Friday after classes begin with instructor approval.

Dropping a Class — You may drop a class during the first two weeks of the semester. Dropped classes don’t appear on your academic record.

Withdrawing from a Class — If you withdraw from a class after the second week of the semester, a grade of "W" will appear on your academic record. The "W" grade does not affect your GPA. The last day you can withdraw from a class is the fourth Friday of the semester unless you are a freshman or a non-degree student. Freshman and non-degree students may withdraw from classes until the sixth Friday of the semester. The specific dates are published in the official university calendar in the front of this catalog.

Withdrawing from All of Your Classes — You will need to obtain a total withdrawal form from the Office of Admissions and Records if you want to withdraw from all of your classes. A student-initiated total withdrawal is subject to the same deadlines as withdrawal from a class (see above).

Withdrawing after the Student-Initiated Deadlines — After the last day for student-initiated withdrawals, late withdrawals are allowed for exceptional cases only and approval is not automatic. You’ll need to provide evidence to support your request for a withdrawal. Acceptable reasons might include documented family emergency, major employment change, documented medical condition or other non-academic reasons such as disciplinary sanctions. Escaping an unsatisfactory grade is not an acceptable reason for seeking a late withdrawal.

Late withdrawal from a class: To support your request to drop a class after the deadline, the dean of the college or school in which the class is offered will need to have documentation from you concerning your reasons for withdrawing. You’ll also need to obtain an Add/Drop form from the Admissions and Records office and have the class instructor, department head and your advisor sign the form before presenting it to the dean.

Late withdrawal from all of your classes: If you need to withdraw from all of your classes, pick up a total withdrawal form from the Admissions and Records office and obtain your advisor’s signature on that form before seeing the dean of the college or school in which your major is located. You’ll need to present documentation to your dean supporting your reasons for withdrawing.

The appeals route for students or faculty regarding the dean’s decision concerning a request for a dean-initiated withdrawal is the Chancellor’s Office, and then the Fairbanks Grievance Council.

Changing from Credit to Audit — You may change from a credit enrollment in a class to audit status by following the add/drop process. Subsequent to the third Friday after classes begin, all registrations for audit, including changes from credit to audit, must be approved by the instructor of the course being audited. You may not change from credit to audit after the last day for student-initiated withdrawals.

### Registration Changes

<table>
<thead>
<tr>
<th>Action</th>
<th>Begins**</th>
<th>Ends</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding a Class or Registering Late</td>
<td>First day of instruction for the semester</td>
<td>Fifth day of instruction for the semester</td>
<td>Adviser’s signature required for student in degree program</td>
</tr>
<tr>
<td>Dropping a Class (Class does not appear on transcript)</td>
<td>First day of instruction for the semester</td>
<td>10th day of instruction for the semester</td>
<td>Adviser’s signature required for student in degree program</td>
</tr>
<tr>
<td>Withdrawing from a Class (Class appears on transcript with “W” grade)</td>
<td>11th day of instruction for the semester</td>
<td>Fourth Friday after classes begin (except freshmen and non-degree students) Sixth Friday after classes begin for freshmen and non-degree students</td>
<td>Adviser’s signature required for student in degree program</td>
</tr>
<tr>
<td>Withdrawing from All of Your Classes</td>
<td>First day of instruction for the semester</td>
<td>Fourth Friday after classes begin (except freshmen and non-degree students) Sixth Friday after classes begin for freshmen and non-degree students</td>
<td>Adviser’s signature required for student in degree program</td>
</tr>
<tr>
<td>Late Withdrawal from a Class***</td>
<td>After the last day for student-initiated withdrawals</td>
<td>Last day of instruction for the semester</td>
<td>Adviser’s signature required for student in degree program; class instructor, department head and dean’s signature required for all students</td>
</tr>
<tr>
<td>Late Withdrawal from All of Your Classes</td>
<td>After the last day for student-initiated withdrawals</td>
<td>Last day of instruction for the semester</td>
<td>Must be initiated by the dean of the college or school in which the student is majoring or by the Dean of Student Services for undeclared majors or non-degree students</td>
</tr>
<tr>
<td>Credit-No-Credit Option</td>
<td>First day of instruction for the semester</td>
<td>10th day of instruction for the semester</td>
<td>Only free electives may be taken under this option</td>
</tr>
</tbody>
</table>

Add/drop forms, total withdrawal forms and credit-no-credit forms must be submitted to the Office of Admissions and Records by the appropriate deadlines.

** The first day of instruction for all semester-length courses is the date indicated as the first day of instruction in the official semester academic calendar. It may not be the first day that a class meets.

Add, drop, withdrawal and credit-no-credit option deadlines will be adjusted proportionally for courses that are less than a semester in length.

*** Late withdrawals are allowed for exceptional cases only and approval is not automatic.
Academic Honors

To be eligible for academic honors at the end of a semester, you must be a full-time undergraduate degree or certificate student who has completed at least 12 UAF credits that are graded with the letter grades A, B, C, D, or F. If you have received an Incomplete or Deferred grade, your academic honors cannot be determined until those grades have been changed to permanent grades. The academic honors are recorded on your permanent record.

Chancellor’s List — You will make the Chancellor’s List with a semester GPA of 4.0.

Dean’s List — A GPA of 3.5 or higher earns you a place on the Dean’s List.

Academic Progress

Instructors are responsible for making sure that you’re aware of the grading policy for their course and that homework, exams, etc., are returned in a timely manner so that you know how you’re doing in class. Freshman low grade reports are optional for each campus of UAF. When used, as they are on the Fairbanks campus, they are required for all freshmen with a grade of less than “C.”

Academic Standards

UAF’s scholastic standards are designed so you can take action before your academic record deteriorates to the point that readmission to UAF or to another college or university becomes a problem. In all cases involving poor scholarship, you’re encouraged to consult with your adviser, instructor or dean.

If you’re an undergraduate or certificate student, or a non-degree student enrolled in more than nine credits, and you fail to earn a GPA of 2.0, you will be subject to scholastic action at the end of the semester. Depending on your circumstances, scholastic action may result in your being placed on probation, continued on probation or disqualified from the university.

Probation — If you’re an undergraduate, certificate or non-degree student taking more than nine credits, you will be put on academic probation if your grade point average falls below 2.0. If you’ve previously been on probation and your semester and/or cumulative GPA is less than 2.0, you may be continued on probation if circumstances warrant. Your probation determination, which is made by the dean of the college/school in which you’re majoring, may include conditions and/or credit limitations which you’re expected to fulfill during your next enrollment at UAF. As a probation student, you may be referred for developmental advising/education and/or to a counseling center. In order to be removed from probation, your cumulative and semester GPAs must be at least 2.0.

Academic Disqualification — If your cumulative academic record indicates poor scholarship, the dean of the college/school in which you’re majoring may recommend that you be disqualified from degree status. As a disqualified student, you may continue your enrollment at UAF only as a non-degree student, limited to enrolling in nine credits per semester, until reinstated into your program. You must apply for readmission when you wish to be restored to degree seeking status.

Good Standing — You are in good standing if you are an undergraduate student and your cumulative GPA and most recent semester GPA are 2.0 or better.

Appeal Procedure

Students wanting to appeal an academic decision should begin an appeal within 30 days after the beginning of the next regular semester in which the decision was made.

Appeals can be made in writing or in person. You can get advice and answers to questions about the process from the Dean of Student Services. During your appeal, you should be prepared to explain what you wish to appeal, why you are appealing it and how you attempted to resolve the issue so far. If possible, propose potential solutions and compromises.

To appeal grades, contact the Dean of Student Services.

To appeal the denial of admission, contact the Director of Admissions and Records, who will forward the appeal to the appropriate officials.

To appeal academic actions such as academic warnings, academic probation and disqualification, you should address the person who made the decision. Often problems can be resolved and misunderstandings cleared up through this step. If the issue isn’t resolved to your satisfaction, you should appeal to the department head, dean, Provost (Vice Chancellor for Academic Affairs and Research), in that order. The decision of the Provost is final.

Attendance

You are expected to regularly attend classes; unexcused absences may result in a failing grade. You are responsible for confirming with your instructor concerning absences and the possibility of arranging to make up missed work.

If you choose to be absent from class to participate in university-sponsored or other activities, you may be permitted to make up any work you have missed, but you must make arrangements with your instructor before the absence. You and your instructor should make a good faith effort to assure that you are not unduly penalized for each absence. Such activities shouldn’t be scheduled so that they conflict with the finals schedule.

Change of Grade Policy

A grade, other than an incomplete or deferred, submitted by your instructor after a course is completed, is assumed to be your final grade and it becomes part of your permanent academic record. Your grade won’t be changed unless your instructor made a legitimate error in calculating the grade; a grade change must be approved by the instructor’s unit head and dean. Grading errors must be corrected within 30 days after the beginning of the next regular semester.

Class Standing

Class standing is determined based on the total credits you’ve earned. Classifications are:
Transfer students are given class standing based on the number of transfer credits accepted by UAF. Non-degree students are registered without class standing. Graduate students are given the class standing of "graduate" only after being officially admitted to master's or doctoral programs.

**Course Classifications**

**The Baccalaureate Core**

Courses that may be used to satisfy general baccalaureate core requirements have course numbers ending with "X." For example, English 111X, Communication 141X and other such courses meet specific core requirements. See the requirements for the baccalaureate core for a listing of other specific 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.

**Specific Degree Requirements**

Courses that may be used to satisfy specific degree requirements (e.g., humanities elective for the B.A. degree, or natural science elective for the B.S. degree) are identified in the course description section of the catalog by the following designators:

- h - humanities
- n - natural science
- m - mathematics
- s - social science

For example, you may use ANTH 309, Arctic Prehistory (3+0) to satisfy the "social science elective" requirement for the Bachelor of Arts degree. Some courses, including all special topics and individual study courses, are not given course classifications.

**Full-, Part-time Status/Study Load**

If you're an undergraduate student registered for 12 or more semester credits, you are classified as a full-time student. In order to complete an undergraduate program in four years, you must earn 16 or 17 credits each semester. You may enroll in up to 18 credits per semester without special permission. To enroll in 19 credits or more, you need a 3.0 cumulative grade point average, and an overload approval by your adviser, department head and dean.

Credits carried at any UAF unit are considered in determining study load hours and full-time or part-time classification. Courses that are audited or taken for credit by examination are not included in the study load computation. Only semester-based correspondence study courses count in the study load.

**Grading System and Grade Point Average (GPA) Computation**

All course grades are letter grades unless otherwise specified in the class schedule. The method of grading (letter or pass/fail) is an integral part of the course structure and is included in the course description. It is the same for all students taking the course. Instructors are expected to state their grading policies in writing at the beginning of each course.

Grades appearing on academic records are as follows:

- A. An honor grade, indicates originality and independent work, a thorough mastery of the subject, and the satisfactory completion of more work than is regularly required.
- B. Indicates outstanding ability above the average level of performance.
- C. Indicates a satisfactory performance.
- D. The lowest passing grade, indicates work of below average quality and performance.
- F. Indicates failure. All "F" grades, including those earned in pass/fail courses, are included in the GPA calculations.

- P. A pass grade indicates satisfactory completion of course requirements at either the undergraduate or graduate level. A "pass" grade does not affect your grade point average but credits earned with "pass" grades may meet degree requirements and may be used as a measure of satisfactory progress. Satisfactory performance is the equivalent of a grade of "C" or better in undergraduate course work and "B" or better in graduate courses. The entire class must be graded pass/fail and the grading system is noted in the class schedule.

- Cr. Indicates credit was given under the credit-no-credit option.

- DF. Deferred. Indicates that the course requirements cannot be completed by the end of the semester, that credit may be withheld without penalty until the course requirements are met within an approved time. This designation will be used for courses such as theses, special projects, etc., that require more than one semester to complete.

- AU. Indicates credit was given for the purposes of audiological instruction only. No academic credit is granted. Only credit that no grade is assigned. You may be given a "W" if you don’t attend a course you are auditing. See “Auditing.”

- W. Withdrawn. Indicates withdrawal from a course after the first two weeks of a semester.

- I. Incomplete. A temporary grade used to indicate that you’ve satisfactorily completed (C or better) the majority of the work in a course, but for personal reasons beyond your control, haven’t been able to complete the course during the regular semester. Normally, an incomplete is assigned when you’ve been in class until at least the last three weeks of the semester or session. Negligence or indifference aren’t acceptable reasons for an "I" grade. When the "I" grade is given, the instructor includes a statement of the work required of you to complete the course.

You must make up an incomplete within one year or it will automatically be changed to an "F" grade. The "I" grade is not computed in your GPA until it has been changed to a regular letter grade by the instructor or until one year has elapsed, at which time it will be computed as an "F." Seniors cannot graduate with an "I" grade in either a UAF or major course requirement. To determine a senior’s GPA at graduation, an "I" grade will be computed as a failing grade.

- NB. No Basis. Instructors may award a No Basis (NB) grade if there is insufficient student progress and/or attendance for evaluation to occur. No credit is given, nor is "NB" calculated in the GPA. This is a permanent grade and may not be used to substitute for the Incomplete (I). It can’t be removed by later completing outstanding work.

**Computing Your GPA**

Your grade point average (GPA) is a weighted numerical aver-
age of the grades you earn in your courses at UAF. To compute your GPA, the total number of credits you have attempted is divided into the total number of grade points you have earned. Grade points are calculated by multiplying the number of grade points awarded, according to the chart below, by the number of credits attempted for the course. The following grades are figured in your GPA: A, B, C, D and F. Grades of I, DF, NB, W, P, AU and CR don't carry grade points and don't affect your GPA.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points per Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Noncredit courses, transfer credits and credit by examination do not affect the GPA calculations. Undergraduate work is not included in the GPA for graduate students. Once you complete your bachelor's degree, your GPA in future work is calculated only on the credits and grades earned since your degree was awarded. An exception to this is made if you're officially admitted to a second bachelor's degree program.

All grades (original and retakes) for a course completed are included on your academic record, but only the last grade earned for a course is computed in your GPA unless the course is one that can be repeated for credit.

**Honor Code**

As a UAF student, you're subject to the Honor Code. The university assumes that the integrity of each student and of the student body as a whole will be upheld. Honesty is a primary responsibility of you and every other UAF student. It is your responsibility to help maintain the integrity of the student community. UAF's Honor Code is as follows:

1. Students will not collaborate on any quizzes, in-class exams, or take-home exams that will contribute to their grade in a course, unless permission is granted by the instructor of the course. Only those materials permitted by the instructor may be used to assist in quizzes and examinations.
2. Students will not represent the work of others as their own. A student will attribute the source of information not original with himself or herself (direct quotes or paraphrases) in compositions, theses and other reports.
3. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors. Violations of the Honor Code will result in a failing grade for the assignment and, ordinarily, for the course in which the violation occurred. Moreover, violations of the Honor Code may result in suspension or expulsion.

Instructors can either deal with suspected violations of the Honor Code themselves or refer such matters to the University Disciplinary and Honor Code Committee (UDHCC). If the instructor believes that a student should be suspended or expelled from the university for an Honor Code violation, the instructor must request a hearing before the UDHCC. The UDHCC shall decide if the Honor Code has been violated. If it has not been violated, the instructor will evaluate the assignment according to his or her normal procedures. If it has been violated, the instructor will determine how this violation affects the student's grade for the course; the UDHCC will recommend to the Dean of Student Services whether the student should be dismissed from UAF.

**Student Behavioral Standards**

Education at the university is conceived as training for citizenship as well as for personal self-improvement and development.

Generally, UAF behavioral regulations are designed to help you work efficiently in courses and live responsibly in the campus environment. They are not designed to ignore your individuality but rather to encourage you to exercise self-discipline and accept your social responsibility. These regulations, in most instances, were developed jointly by staff and students. You should become familiar with campus policies and regulations as published in the student handbook.

**Information Release**

**Access to Records**

Under the Family Educational Rights and Privacy Act of 1974, you are entitled, as a UAF student, to review your records. Except for directory information, no personally identifiable information is disclosed to agencies outside UAF without the written permission of the student. Records are made available for legitimate UAF professional use on a need-to-know basis.

**Directory Information**

Directory information is disclosed to the public on a routine basis unless you request, in writing, to the Director of Admissions and Records that such information not be released. Forms to request that directory information not be released are available in the Office of Admissions and Records. You must complete this form each semester. No directory information is released during the first five working days of each semester. After that, information will be released when appropriate, unless you return the form to Admissions and Records.

The following is considered directory information:

1. Name
2. Address, telephone
3. Home address (permanent)
4. Weight and height of students on athletic teams
5. Date of birth
6. Dates of attendance and current class standing
7. Major field(s) of study
8. Degrees and awards received, including dates
9. Participation in officially recognized activities
10. Chancellor's List and Dean's List recognition each semester

**Majors**

You may declare a major when you are admitted as an undergraduate student to UAF. If you do not follow a curriculum leading to a specific degree, you will be enrolled as an "undeclared" major. If you are interested in a particular school or college, but have not selected a major, you will be enrolled as a non-major within that division. Non-degree students aren't eligible to declare a major or to be assigned class standing.

You may change majors only at the beginning of a semester. Change of major forms, available from Admissions and Records, must be completed. You need to have the written consent of the department heads concerned and turn the completed form into the Admissions and Records Office before a change of major is final.

If you're an associate degree or certificate student wishing to declare a baccalaureate degree major, you must complete the admissions process for bachelor's degree programs. (See "Admission Requirements.")

**Petitions**

Deviations from academic requirements and regulations for undergraduate students must be approved by academic petition. Petition forms, which require the signatures of your adviser, department head and dean, are available from the Office of Admissions and
Records.

Petitions to waive general university or degree requirements must be approved by the Provost (Vice Chancellor for Academic Affairs and Research), but you should first submit them to the Office of Admissions and Records.

**Reserving Courses for Graduate Programs**

If you're a senior with only a few remaining requirements for your bachelor's degree, you may take courses at the upper division or graduate level if space is available, and have them reserved for an advanced degree. To do this, you must be in your final year of an undergraduate program and must submit a written petition during the first four weeks of the semester identifying which courses being taken that semester are to be reserved for graduate study and are not to be counted toward your bachelor's degree. (Reserving these courses, however, does not assure that they will be accepted by a graduate advisory committee as part of your eventual graduate program.)

---

### General University Requirements for Undergraduate Degrees

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>ASSOCIATE DEGREE</th>
<th>BACHELOR'S DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Number of Credits Required</td>
<td>60 credits</td>
<td>120 credits</td>
</tr>
<tr>
<td>Credits that Must be Earned at UAF (residence credit)</td>
<td>15 credits</td>
<td>30 credits</td>
</tr>
<tr>
<td>Upper Division Credit (Courses with numbers between 300 and 499)</td>
<td>39 credits total (some degrees require more); of the 39 credits, 24 must be earned at UAF</td>
<td></td>
</tr>
<tr>
<td>Additional Credit that Must be Earned at UAF by Transfer Students</td>
<td>12 credits in the major; 3 credits in the minor</td>
<td></td>
</tr>
<tr>
<td>Grade Point Average Required</td>
<td>2.0 cumulative and in major</td>
<td>2.0 cumulative and in major and minor</td>
</tr>
<tr>
<td>Minimum Grades Required for Major</td>
<td>No grade lower than “C” in courses required for major</td>
<td>No grade lower than “C” in courses required for major</td>
</tr>
<tr>
<td>Correspondence Study Courses</td>
<td>Maximum of 15 credits accepted for degree</td>
<td>Maximum of 32 credits accepted for degree</td>
</tr>
<tr>
<td>Catalog Year that Can be Used to Meet Requirements</td>
<td>May use any catalog in effect when enrolled as a degree-seeking student, regardless of major - 5 year limit on catalog year</td>
<td>May use any catalog in effect when enrolled as a degree-seeking student, regardless of major - 7 year limit on catalog year</td>
</tr>
<tr>
<td>Second Degree Requirements</td>
<td>Only one A.A. degree may be earned; 12 credits beyond first A.A.S. degree and all requirements for the second degree must be met</td>
<td>24 credits beyond the first bachelor's degree and all requirements for the second degree must be met</td>
</tr>
</tbody>
</table>

---

**Students’ Rights and Responsibilities**

The university prescribes to principles of due process and fair hearings as specified in the "Joint Statement on Rights and Freedoms of Students." You are encouraged to familiarize yourself with this document which can be found in the Office of Student Services.

Most students find it relatively easy to adjust to the privileges and responsibilities of university citizenship. For those who find this more difficult, the university attempts to provide needed counsel to help you gain insight and confidence in adjusting to your new environment. In some cases, if you are unable or unwilling to assume your social responsibilities as a citizen in the university community, the institution may terminate your enrollment, or take whatever action is deemed necessary and appropriate.
### Baccalaureate Degree Requirements in Brief - 1995-96

<table>
<thead>
<tr>
<th>Academic Discipline</th>
<th>Baccalaureate Core</th>
<th>Bachelor of Arts</th>
<th>Bachelor of Science</th>
<th>Bachelor of Technology</th>
<th>Bachelor of Business Administration</th>
<th>Bachelor of Music</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications</td>
<td>ENGL 111X - 3 cr</td>
<td>2 designated</td>
<td>2 designated</td>
<td>ENGL 314 and 1 other</td>
<td>2 designated</td>
<td>ENGL 314 and 1 other</td>
</tr>
<tr>
<td></td>
<td>ENGL 211X OR</td>
<td>upper-division</td>
<td>upper-division</td>
<td>designated</td>
<td>upper-division</td>
<td>designated</td>
</tr>
<tr>
<td></td>
<td>ENGL 213X - 3 cr</td>
<td>writing intensive</td>
<td>writing intensive</td>
<td>upper-division</td>
<td>writing intensive</td>
<td>upper-division</td>
</tr>
<tr>
<td></td>
<td>COMM 313X OR</td>
<td>(W) and</td>
<td>(W) and</td>
<td>upper-division</td>
<td>(O) course</td>
<td>(O) course</td>
</tr>
<tr>
<td></td>
<td>COMM 141X - 3 cr</td>
<td>either 1</td>
<td>either 1</td>
<td>oral intensive</td>
<td>OR 2 upper-division</td>
<td>OR 2 upper-division</td>
</tr>
<tr>
<td></td>
<td></td>
<td>designated</td>
<td>designated</td>
<td>oral intensive</td>
<td>oral intensive</td>
<td>oral intensive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>upper-division</td>
<td>upper-division</td>
<td>oral intensive</td>
<td>courses</td>
<td>courses</td>
</tr>
<tr>
<td></td>
<td></td>
<td>oral intensive</td>
<td>oral intensive</td>
<td>courses</td>
<td>designated</td>
<td>designated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>courses</td>
<td>courses</td>
<td>courses</td>
<td>O2</td>
<td>O2</td>
</tr>
<tr>
<td>Humanities and</td>
<td>Perspectives on the</td>
<td>No additional</td>
<td>No additional</td>
<td>ECON 200 - 4 cr</td>
<td>LING 101 - 3 cr</td>
<td>No additional</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>Human Condition</td>
<td>humanities or</td>
<td>humanities or</td>
<td>ECON 227 - 3 cr</td>
<td>Humanities Elec - 3 cr</td>
<td>humanities or</td>
</tr>
<tr>
<td></td>
<td>(18 cr)</td>
<td>social sciences</td>
<td>social sciences</td>
<td></td>
<td>OR 2 upper-division writing</td>
<td>social sciences</td>
</tr>
<tr>
<td></td>
<td>ANTH SOC 100X - 3 cr</td>
<td>unless required</td>
<td>unless required</td>
<td>intensive</td>
<td>intensive</td>
<td>unless required</td>
</tr>
<tr>
<td></td>
<td>ECON/POLS 100X - 3 cr</td>
<td>by major or</td>
<td>by major or</td>
<td>STAT 200 - 3 cr</td>
<td>OR 2 upper-division oral intensive</td>
<td>by major or</td>
</tr>
<tr>
<td></td>
<td>HIST 100X - 3 cr</td>
<td>minor</td>
<td>minor</td>
<td>MATH 161 - 3 cr</td>
<td>OR 2 upper-division oral courses</td>
<td>minor</td>
</tr>
<tr>
<td></td>
<td>ART/MUS/THR 200X OR</td>
<td></td>
<td></td>
<td>(MATH 262 should</td>
<td>designated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HUM 210X - 3 cr</td>
<td></td>
<td></td>
<td>be taken to meet the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGL/LIT 200X - 3 cr</td>
<td></td>
<td></td>
<td>core math requirement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHIL 322X or PS 300X - 3 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- or 12 credits from above plus 2 semester length courses in a single Alaska Native or other non-English language taken at the university level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>MATH 131X or MATH 200, 201, 202, 262 or 272 or any math course having one of the above as a prerequisite - 3 or 4 cr</td>
<td>One 3-credit course at the 100-level or above from math, computer sciences or statistics</td>
<td>One 3-credit course at the 100-level or above from math, computer sciences or statistics</td>
<td>One 3-credit course at the 100-level or above from math, computer sciences or statistics</td>
<td>MATH 205 - 3 cr</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>from math, computer sciences or statistics</td>
<td>from math, computer sciences or statistics</td>
<td>from math, computer sciences or statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>Complete one emphasis:</td>
<td>No additional natural science unless required by the major or minor</td>
<td>No additional natural science unless required by the major or minor</td>
<td>No additional natural science unless required by the major or minor</td>
<td>One 3-credit course at the 100-level or above from math, computer sciences or statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Breadth emphasis (8 credits):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 103X OR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 104X - 4 cr OR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 213X - 4 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 100X - 4 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOG 205X - 4 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOG 100X - 4 cr OR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOG 120X - 4 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSL 111X - 4 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS 102X - 4 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS 275X - 4 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Depth emphasis (8 credits):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Complete one sequence):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 103X and 106X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BIOL 211X and 212X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 103X and 104X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEM 105X and 106X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOG 101X and 102X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEOG 103X and 112X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS 103X and 104X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS 211X and 212X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ANT/HIST 103X and 213X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS 212X and 213X - 8 cr</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library and</td>
<td>Successful completion of library</td>
<td>Computer competency</td>
<td>Common Body of Knowledge - 31-34 cr</td>
<td>Concentration - 18-31 cr</td>
<td>No additional natural science required</td>
<td></td>
</tr>
<tr>
<td>Information Skills</td>
<td>skills competency test or LS I00X OR I03X - 0.1 cr (to be completed during the first two years)</td>
<td>(any computer science</td>
<td>Knowledge - 31-34 cr</td>
<td>Education - 48 cr</td>
<td>required</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>computer applications course)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 3 cr</td>
<td>Technology &amp; society - 3 cr</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Area of specialization - 3 cr</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>designated</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Option - 33 or 38 cr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Complex</td>
<td>At least 30 credits</td>
<td>At least 30 credits</td>
<td>At least 30 credits</td>
<td>At least 30 credits</td>
<td>85 or more cr</td>
<td></td>
</tr>
<tr>
<td>Minor Complex</td>
<td>Required</td>
<td>At least 15 credits</td>
<td>Optional</td>
<td>At least 15 credits</td>
<td>Optional for business administration and economics</td>
<td>At least 15 credits</td>
</tr>
<tr>
<td>Total Credits</td>
<td>38-40 cr</td>
<td>120 cr</td>
<td>120 cr</td>
<td>120 cr</td>
<td>120 cr</td>
<td>120 cr</td>
</tr>
<tr>
<td>Required</td>
<td>20 cr</td>
<td>120 cr</td>
<td>120 cr</td>
<td>120 cr</td>
<td>120 cr</td>
<td>120 cr</td>
</tr>
</tbody>
</table>
How to Earn a Degree

Requirements

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 Degrees and Programs section.

General University Requirements

You must earn at least 60 semester hours for an associate degree, and 120 semester hours for a bachelor’s degree, including transfer credits, to earn a UAF degree. You must earn at least 39 upper division credits for bachelor’s degrees.

At least 15 semester credits applicable to any associate degree must be earned at UAF. If you’re a bachelor’s degree student, you must earn at least 30 semester credits applicable to any baccalaureate degree at UAF. For transfer students, you need to earn at UAF at least 24 hours of upper-division semester credits, at least 12 semester credits in your major and at least three semester credits in your minor for the baccalaureate degree.

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 grade of "C" in courses required for your major.

To receive a second associate of applied science degree, you must earn at least 12 credit hours beyond the first associate degree as well as completing all requirements for the major. As long as you’ve completed the additional 12-hour requirement, you may be awarded two degrees in one semester.

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

For students who hold bachelor’s degrees from other colleges or universities, you must apply for admission as a transfer student. You have to meet all general university requirements (including residency requirements), degree requirements and major requirements.

Certifying that you have met all major and minor requirements is the responsibility of your department faculty, who notify the Director of Admissions and Records.

No more than 15 semester hours of correspondence study work are accepted toward an associate degree; 32 semester hours are accepted toward a bachelor’s degree. If you want to use correspondence study credits from a school other than UAF to satisfy degree requirements, you must have the approval of 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 211X and 213X 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 211X or 213X without first fulfilling the ENGL 111X requirement. (See “Local Advanced Placement Credit - English.”)

What degree requirements can you use?

You may complete degree requirements that are in effect in any one of the academic years in which you are enrolled as a degree student. Only degree requirements in effect within seven academic years prior to your graduation date for a baccalaureate degree or five years for a certificate or associate degree may be used.

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

Residence Credit

Residence credit is UAF credit that you earn in formal classroom instruction, correspondence study, distance delivered courses, individual study or research through any unit of UAF. Transfer credit, advanced placement credit, credit for prior learning, formal service school credit, military service credit and credit granted through nationally prepared examinations are not considered residence credit, nor are credit by examination credits earned through locally prepared tests.

Graduation

Responsibility — You are responsible for meeting all requirements for graduation.

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 Records during the semester in which you plan to graduate. If you file your application by the published deadline, the graduation application fee is $20. If you miss that deadline, you still may submit your application for graduation and $30 fee up to six weeks before the last class day of the semester or summer term.

Applications for graduation filed after the deadline are processed for graduation the following semester.

Diplomas and Commencement — UAF issues diplomas to graduates three times each year: in September following the summer session, in January at the close of the fall semester, and in May at the end of the spring semester.

All students who complete degree requirements during the academic year are invited to participate in the annual commencement ceremony which follows the spring semester.

Graduation with Honors — In order to graduate with honors, you must earn a cumulative grade point average of 3.5 or higher in all college work attempted at UAF (including all repeated and bankrupted credits). For transfer students, you must complete 48 semester hours of credit at UAF for a baccalaureate degree or 24 semester hours of credit at UAF for an associate degree. Your cumulative grade point average in all college work attempted at all other institutions attended (including repeated credits and any not accepted by transfer) combined with the UAF cumulative grade point average must not be less than 3.5.

If that overall cumulative grade point average is 3.5 or higher, you will be graduated cum laude; 3.8 or higher, magna cum laude; 4.0, summa cum laude, provided you meet the requirements stated above.
Degree Requirements

Certificate Programs
Certificate programs vary in length; however, you can usually complete them in one year.

Requirements
To enroll in a certificate program, and before receiving a certificate, you must formally be admitted. To earn a certificate, you may enroll in any course for which you are eligible.

To earn a certificate, you must earn at least 30 credits, including transfer credit. Fifteen semester hours must be residence credits. You must have a grade point average of 2.0 in all work, as well as in your major.

Electives
Specialty requirements and approved electives .................................................. 30


Associate Degrees

ASSOCIATE OF ARTS REQUIREMENTS
The Associate of Arts degree represents the completion of broad-based college study. This degree may serve as a starting point for your career or as a steppingstone to a baccalaureate program. You may earn only one A.A. degree.

Requirements
All credits for the A.A. degree must be at the 100 level or above with 20 credits at the 200 level or above, and be distributed as follows:

Communication (9 credits) Credits
ENGL 111X—Methods of Written Communication 3
ENGL 211X—Intermediate Exposition with Modes of Literature OR *ENGL 212—Business, Grant and Report Writing OR
ENGL 213X—Intermediate Exposition 3

Mathematics or natural science (10 credits)
MATH 131X—Concepts and Contemporary Applications of Mathematics 3
(OR MATH 200, 201, 202, 262, 272 or any math course having one of these as a prerequisite)
One natural science course, with lab, selected from the baccalaureate core 4
Mathematics or natural science elective 3

Humanities and social science (18 credits)
ANTH 100X/SOC 100X—Individual, Society and Culture 3
ECON 100X/Ps 100X—Political Economy 3
HIST 100X—Modern World History 3
ART/MUS/THR 200X—Aesthetic Appreciation: Interrelationship of Art, Drama and Music OR
HUM 201X—Unity in the Arts 3
ENGL/FL 200X—World Literatures 3
Humanities or social science elective 3
(Two semester length courses in a single non-English language taken at the university level may substitute for one of the required courses above and the three-credit humanities or social science elective.)

Library and information skills (0-1 credit)
Successful completion of library skills competency test or LS 100X or LS 101X 0-1
Successful completion of the library skills competency test satisfies this requirement of the core curriculum, but does not carry degree credit. (It is strongly recommended that this requirement be completed before enrolling in the 200-level English course requirement or that it be completed concurrently with enrollment in the 200-level English core requirement.)

General electives (22-23 credits)
Any combination of courses. (Students planning to go on to the baccalaureate degree are advised to select courses meeting remaining core requirements and courses designated within baccalaureate majors and minors.) 22-23

Electives to total .................................................................... 60
* ENGL 212 doesn’t fulfill the second half of the written communication requirement for the baccalaureate degree.

ASSOCIATE OF APPLIED SCIENCE REQUIREMENTS
Associate of Applied Science degrees are awarded in specific occupational fields with emphasis on entering the job market. This degree, usually seen as a terminal degree, can serve as the basis for additional training.

Requirements
All credits for the A.A.S. degree must be at the 100-level or above and be distributed as follows:

Communication (9 credits) Credits
ENGL 111X—Methods of Written Communication 3
ENGL 211X—Intermediate Exposition with Modes of Literature OR *ENGL 212—Business, Grant and Report Writing OR
ENGL 213X—Intermediate Exposition 3

Mathematics or natural science (3 credits)
A math or natural science course at the 100-level or above 3

Humanities, social sciences, math, natural sciences or Perspectives on the Human Condition 3

Major specialty ............................................................................ at least 30

Electives to total ........................................................................ 60
Note: Students planning to go on to the baccalaureate degree need to work closely with their advisers and are encouraged to select courses meeting core requirements, and courses designated within majors and minors.

* ENGL 212 doesn’t fulfill the second half of the written communication requirement for the baccalaureate degree.

Requirements

Baccalaureate Degrees

THE BACCALAUREATE EXPERIENCE:
THE CORE CURRICULUM
Undergraduate baccalaureate study at the University of Alaska Fairbanks 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 which, when combined with specialized study in the major and other specific degree requirements, is designed to prepare students to better meet the demands of life in the 21st century.

Through the baccalaureate core experience, every UAF student is expected to achieve:

- multi-dimensional competency in written and oral English—including comprehension of complex materials and 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 objectivity of the scientific method, the frameworks which have nurtured scientific thought, the 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 our 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 the relationship between value systems and life choices.

Through better integration of knowledge, it is expected that UAF graduates will more fully understand the changing world in which they will be expected to function.

The core curriculum applies to all students (new freshman and transfer students) admitted to and enrolling in baccalaureate degree programs at UAF in the fall semester, 1991, and thereafter.

**Requirements**

**Communication (9 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 111X—Methods of Written Communication*</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 211X—Intermediate Exposition with Modes of Literature or ENGL 213X—Intermediate Exposition</td>
<td>3</td>
</tr>
</tbody>
</table>

*ENGL 190H may be substituted.

**Perspectives on the Human Condition (18 credits)**

(Humanities and social sciences)

Complete the following six courses:

- ANTH 100X/SOC 100X—Individual, Society and Culture
- ECON 100X or PS 100X—Political Economy
- HIST 100X
- ART/MUS/THR 200X—Artistic Appreciation: Interrelationship of Art, Drama and Music OR HUM 201X—Unity in the Arts
- ENGL/FL 200X—World Literatures
- PS 300X—Values and Choices OR PHIL 322X—Ethics

OR complete 12 credits from the above courses plus two semester length courses in a single Alaska Native language or other non-English language taken at the university level.

**Mathematics (3 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 131X—Concepts and Contemporary Applications of Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>OR MATH 200, 201, 202, 262, 272 or any math course having one of these as a prerequisite</td>
<td></td>
</tr>
</tbody>
</table>

**Natural Sciences (8 credits)**

Complete two 4-credit courses, with labs, from approved natural science core courses with depth or breadth emphasis.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 103X—Biology and Society OR BIO 104X—Natural History of Alaska OR BIO 273X—Humans in the Earth System</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 100X—Chemistry and the Modern World</td>
<td>4</td>
</tr>
<tr>
<td>GEOG 205X—Physical Geography</td>
<td>4</td>
</tr>
<tr>
<td>GEOS 100X—Introduction to Earth Science OR GEOS 120X—Glaciers, Earthquakes, Volcanoes</td>
<td>4</td>
</tr>
<tr>
<td>MSL 111X—The Oceans</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 102X—Energy and Society</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 275X—Astronomy</td>
<td>4</td>
</tr>
</tbody>
</table>

**Library and Information Skills (0-1 credit)**

Successful completion of library skills competency test or LS 100X or 101X prior to junior standing

Two writing intensive courses designated (W) and one oral communication intensive course designated (O) or two oral communication intensive courses designated (O/2), at the upper-division level

(see degree and/or major requirements)

**Total Credits Required** 38-39

**BACHELOR OF ARTS REQUIREMENTS**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete the baccalaureate core</td>
</tr>
</tbody>
</table>

**Complete the following B.A. requirements in addition to the core:**

**Humanities and social sciences**

Any combination of courses at the 100-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

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
</tr>
<tr>
<td>One course at the 100-level or above in mathematical sciences (math, computer science, statistics)</td>
</tr>
</tbody>
</table>

**Minor complex**

at least 15

OR
Foreign/Alaska Native language option .......................... 12-18
Two years study of one foreign or Alaska Native 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 which are not in the primary discipline of that major
or minor may be used to fulfill the B.A. degree requirements in
humanities, social sciences or mathematics. Courses used to fulfill
minor degree requirements may be used at the same time to fill major
or general distribution requirements if so designated.
*Departmental requirements for majors and minors may exceed
the minimums indicated. Specific requirements are listed in the
Degrees and Programs section of the catalog.

Majors Available for B.A. Degree: Alaska Native Studies,
Anthropology, Art, Biological Sciences, Chemistry, Communication,
Earth Sciences, Economics, English, Eskimo, Foreign Language,
Geography, History, Human Services, Interdisciplinary Studies,
Japanese Studies, Journalism, Justice, Linguistics, Mathematics,
Music, Northern Studies, Philosophy, Physical Education, Physics,
Political Science, Psychology, Rural Development, Russian Studies,
Social Work, Sociology, Theater.

(Requirements of majors are listed in the Degrees and Programs
section of this catalog.)

Minors Available for B.A. Degree: Accounting, Alaska Native
Languages, Alaska Native Studies, Anthropology, Art, Asian Studies,
Athletic Coaching, Aviation, Biological Sciences, Chemistry,
Communication, Computer Information Systems, Computer Science,
Economics, Elementary Education, English, Eskimo, Finance, French,
General Business, General Education, Geography, Geology, German,
History, Humanities, Human Resource Management, Human Service
Technology, Human Services, Japanese, Journalism, Justice, Law
and Society, Linguistics, Marketing, Mathematics, Military Science,
Music, Natural Resources Management, Philosophy, Physical
Education, Physics, Political Science, Psychology, Rural Development,
Russian, Russian Studies, Sociology, Spanish, Statistics, Theater,
Travel Industry Management, Wildlife Biology and Women's Studies.

The following associate degree programs are approved as minors
for the Bachelor of Arts degree: Applied Business, Aviation Technology,
Culinary Arts, Early Childhood Development, Fire Science,
Human Services Technology and Office Management and Technology,
and Paralegal Studies.

Double Major — If you're a Bachelor of Arts degree candidate,
you may complete two majors rather than a major and a minor. You
may select the majors from those approved for the Bachelor of Arts
degree; you must complete all general university requirements and all
major requirements for both majors. If one major is from a program
which requires 120 total credits and the other major is from a program
which requires 130 credits, you must complete 130 credits. You must
declare both majors when you're admitted and/or through the change
of major procedure. You will need to follow the degree requirements
in a single catalog for both majors.

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

BACHELOR OF SCIENCE REQUIREMENTS

Requirements .................................................. Credits

Complete the baccalaureate core ................................ 38-39

Complete the following B.S. requirements in addition to the
core:

Natural sciences ...................................................... 8
A one-year sequence in one natural science beyond the core. 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.

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 which are not in the primary discipline of that major
or minor may be used to fulfill the B.S. degree requirements in
mathematics or natural science. Courses used to fulfill minor degree
requirements may be used at the same time to fill major or general
distribution requirements if so designated.
*Departmental requirements for majors and minors may exceed
the minimums indicated and most B.S. degree programs require 130
credits. Specific requirements are listed in the Degrees and Programs
section of the catalog.

Majors Available for B.S. Degree: Anthropology, Applied
Physics, Biological Sciences, Chemistry, Civil Engineering, Computer
Science, Electrical Engineering, Exercise Science, Fisheries, General
Science, Geography, Geological Engineering, Geology,
Interdisciplinary Studies, Mathematics, Mechanical Engineering,
Mining Engineering, Natural Resources Management, Petroleum
Engineering, Physics, Psychology, Sociology, Statistics, Wildlife
Biology.

(Requirements of majors are listed in the Degrees and Programs
section of this catalog.)

Double Major — 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
and/or through the change of major procedure. You'll need to

Double Major — If you’re a Bachelor of Arts degree candidate,
you may complete two majors rather than a major and a minor. You
may select the majors from those approved for the Bachelor of Arts
degree; you must complete all general university requirements and all
major requirements for both majors. If one major is from a program
which requires 120 total credits and the other major is from a program
which requires 130 credits, you must complete 130 credits. You must
declare both majors when you’re admitted and/or through the change
of major procedure. You will need to follow the degree requirements
in a single catalog for both majors.
follow the degree requirements in a single catalog for both majors.

Optional Minor — You may elect to complete a minor with the B.S. degree under the following circumstances:

1. You must declare your minor before the beginning of your final semester in the B.S. degree program. You need to complete a "Declaration of Minor" form and file it with Admissions and Records by the end of registration.

2. Any minor approved for the B.A. degree may serve as a minor for the B.S. degree. All general and specific requirements for minors are the same as those listed for B.A. degree minors, including that courses used to meet minor requirements may not be used to meet major or general distribution requirements unless so designated. The catalog used for the minor must be the same as the catalog used for the major and general degree requirements.

3. You must satisfactorily complete the requirements for the minor before your B.S. degree will be awarded. The minor will be listed on your transcript along with the B.S. degree.

BACHELOR OF BUSINESS ADMINISTRATION REQUIREMENTS

All majors must earn a "C" or better in all Common Body of Knowledge courses, department specific general requirements, major specific requirements, and specific math and statistics requirements.

Requirements

Complete the baccalaureate core ............................................. 38-39

Complete the following B.B.A. requirements in addition to the core:

Mathematics

Mathematics courses taken in upper division (300-level or higher) courses.

Social Sciences and Statistics (10 credits)

Social Sciences and Statistics courses taken in upper division (300-level or higher) courses.

Common Body of Knowledge (31-34 credits)

Common Body of Knowledge courses taken in upper division (300-level or higher) courses.

BA 325—Financial Management ......................................... 3
BA 330—Legal Environment of Business ......................... 4
BA 343—Principles of Marketing .................................. 3
BA 360—Operations Management .................................. 3
BA 390—Organization Theory and Behavior .................. 3
ECON 324—Intermediate Macroeconomics OR ............. 3
ECON 350—Money and Banking .................................. 3

Major complex and option* ........................................... at least 27

Minor complex** (optional) ........................................ 21 or more

Electives ............................................................................. 13 or more

Minimum credits required for degree ................................ 123

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

** The minor must be selected outside of the School of Management. Specific requirements are listed in the Degrees and Programs section of the catalog.


(Requirements of majors are listed in the Degrees and Programs section of this catalog.)

BACHELOR OF EDUCATION REQUIREMENTS

See Education in Degrees and Programs section.

BACHELOR OF MUSIC REQUIREMENTS

See Music in Degrees and Programs section.

BACHELOR OF FINE ARTS REQUIREMENTS

B.F.A. general requirements are the same as the requirements for the B.A. except for the minor complex which is replaced by a minor specialization of 9 upper division credits in art.


BACHELOR OF TECHNOLOGY REQUIREMENTS

See Technology in Degrees and Programs section.
Fees and Financial Aid

Tuition

Tuition is determined by the following:

1) The number of credit hours enrolled,
2) The level of the course, and
3) The residency status of the student.

<table>
<thead>
<tr>
<th></th>
<th>Resident</th>
<th>Non-resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-200 level</td>
<td>$ 69/credit</td>
<td>$ 207/credit</td>
</tr>
<tr>
<td>300-400 level</td>
<td>$ 75/credit</td>
<td>$ 225/credit</td>
</tr>
<tr>
<td>500-600 level</td>
<td>$ 150/credit</td>
<td>$ 300/credit</td>
</tr>
</tbody>
</table>

Undergraduate students are considered full time at 12 or more credits. Graduate students are considered full time at 9 or more credits.

Definition: Alaska Resident

Alaska residents, members of the United States military on active duty in Alaska and their dependents, members of the Alaska National Guard and their dependents, as well as residents of the Yukon Territory and the Northwest Territories are exempt from a non-resident tuition fee. For purposes of non-resident tuition a resident is any person who has been physically present in Alaska for one year (excluding only vacations or other absence for periods not exceeding an aggregate of 90 days with intent to return) and who declares intention to remain in Alaska indefinitely. However, any person who, within one year, has declared himself/herself to be a resident of another state, voted in another state, or did any act inconsistent with Alaska residence shall be deemed a non-resident for purposes of non-resident tuition. An unemancipated person under the age of 18 who has a parent or guardian who qualifies as an Alaskan resident, as defined above, shall be deemed a resident, and otherwise such unemancipated persons under the age of 18 shall be deemed a non-resident for purposes of non-resident tuition. Students having non-immigrant visa status are ineligible for residency.

This definition of Alaska residency status is solely for the purposes of tuition payment at UAF. The requirements of the university or may not be the same as requirements of other agencies of the state of Alaska.

Persons wishing to apply for resident status should complete the application for residency status form (the form may be obtained from the Office of Admissions and Records in Signers' Hall.) Applicants should attach a copy of documentary proof of residency in Alaska for the past 12 months. Records presented in support of residency application cannot be returned. Therefore, it is suggested that photocopies of such records be made to turn in with the application. The completed form and the proof of residency should be returned to the Office of Admissions and Records prior to the date of registration.

Acceptable examples of proof of residency are rent receipts, checks written to local merchants throughout the year, a statement from an Alaskan employer, current military I.D., Alaskan high school or college transcripts, or Postal Service verification of an Alaskan address. Contact Admissions and Records for more information.

Other Fees Associated with Registration

(per semester unless otherwise indicated)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Fees (see course descriptions)</td>
<td>$ 2 - 250</td>
</tr>
<tr>
<td>Health Fees (required for full-time students)</td>
<td></td>
</tr>
<tr>
<td>Health Center Fee</td>
<td>$ 65</td>
</tr>
<tr>
<td>Health Insurance Fee</td>
<td>approx 230</td>
</tr>
<tr>
<td>Housing Fees</td>
<td></td>
</tr>
<tr>
<td>Housing Reservation/Deposit Fee</td>
<td>$ 250</td>
</tr>
<tr>
<td>Residence Halls</td>
<td></td>
</tr>
<tr>
<td>Double Room/Double Occupancy</td>
<td>$ 900</td>
</tr>
<tr>
<td>Single Room</td>
<td>$ 1,100</td>
</tr>
<tr>
<td>Student Apartment Complex</td>
<td></td>
</tr>
<tr>
<td>(each student)</td>
<td>$ 1,150</td>
</tr>
<tr>
<td>Married Student Apartments</td>
<td>$ 420-580/month</td>
</tr>
<tr>
<td>Board Plan (three plans)</td>
<td>$ 895-945</td>
</tr>
<tr>
<td>Board Net</td>
<td>$ 110</td>
</tr>
<tr>
<td>Late Add Fee</td>
<td>$ 40-100</td>
</tr>
<tr>
<td>Late Payment Fee</td>
<td>$ 40-100</td>
</tr>
<tr>
<td>Music Course Fees</td>
<td></td>
</tr>
<tr>
<td>(music majors maximum: 135/165)</td>
<td>$ 20-145</td>
</tr>
<tr>
<td>Parking Fee</td>
<td>approx 150-200/year</td>
</tr>
<tr>
<td>Payment Plan Charge</td>
<td>$ 40</td>
</tr>
<tr>
<td>Priority Registration Deposit</td>
<td>$ 50</td>
</tr>
<tr>
<td>Student Activity Fee (8 credits or more)</td>
<td>$ 100</td>
</tr>
<tr>
<td>Student Activity Fee (3 - 7.9 credits)</td>
<td>$ 25</td>
</tr>
</tbody>
</table>

All fees are subject to change.

Definitions: Other Fees Associated with Registration

Course Fees — Not all courses have course fees associated with them. Fees for courses range from $2 to $250. See the course description section of the catalog to check on fees for individual courses.

Health Center Fee — All full-time students, students living in university housing, and students purchasing the student health insurance plan must pay the $65 Health Center fee. For the purposes of fee payment, full-time students are undergraduate students taking 12 or more credits and graduate students taking 9 or more credits or registered for "active" extended registration. Active duty military students have the option of paying the Health Center fee. A waiver of this fee is available if: none of the student's courses meet on the main campus; the student does not live in university housing; and the student is able to waive the student health insurance plan. A health center fee waiver form may be obtained during fee payment at the beginning of the semester from the Center for Health and Counseling. A brochure describing Center for Health and Counseling services is available at the center.

Health Insurance Fee — The university requires that all full-time students and students living in university housing be covered by
a health insurance plan. For the purposes of fee payment, full-time students are undergraduate students taking 12 or more credits and graduate students taking 9 or more credits or registered for “active” extended registration.

At the time of fee payment the student will be charged for the student health insurance plan through the university. However, students who are covered by an alternate health insurance plan, may waive the student health insurance plan. A student seeking to waive the student health insurance fee must present the Health Insurance Waiver Form before the end of the designated fee payment period. Waiver forms are available at the Center for Health and Counseling as well as at fee payment locations. Students enrolled in 6 - 11 credits have the option of purchasing the student health insurance plan if they also pay the Health Center fee.

The student health insurance fee is approximately $230 per semester. The exact cost will be quoted at registration during fee payment time. The plan provides basic coverage for accidents and illnesses that are not pre-existing. Questions regarding the student health insurance plan can be directed to the insurance coordinator at the Center for Health and Counseling.

Health insurance coverage for spouse and/or dependents is also available. Contact the Center for Health and Counseling for more information.

The international student health insurance plan provides the same benefits as the domestic plan. In addition, it provides coverage for medical evaluation or repatriation. International students are required to purchase annual international insurance. The cost for F-1 visa international student health insurance is approximately $625 for the year. The exact cost will be quoted during registration at fee payment time. In general, waivers are not available. Students seeking waivers must present evidence, in English, of equivalent coverage, to the insurance coordinator at the Center for Health and Counseling. Waivers will not be granted unless requested in advance of the fee payment period. Students with J-1 visas have different health insurance requirements. Contact the International Student Adviser for more information.

A brochure entitled The Student Health Insurance Plan is available at the Center for Health and Counseling.

**Housing Fees** — When applying for housing, you need to send a $250 ($25 non-refundable processing fee, $225 refundable deposit) reservation damage deposit to the Housing Office with your completed application. Room rent, along with all other fees, is due in full at registration (see Payment of Fees). When registering, each residence hall student is required to buy a board plan for cafeteria meals. Meal tickets become effective at the evening meal of the first day of registration each semester. For more information, see Housing. If you don’t live on campus, you may be authorized by the Housing Office to purchase a board program. The cost includes the price of the board program selected plus a board net charge of $110. This additional charge is used to maintain the dining facilities and equipment.

**Late Add Fee/Late Registration Fee** — If you pay fees or add a class later than the last day designated for that purpose, you’ll have to pay a late fee of $40 for the first working day, plus $10 for each succeeding working day to a maximum of $100. No late fee will be charged when you change from one section of a course to another or when you have to add another course to replace a canceled course in which you were previously registered. This fee is refunded only if all classes for which you’ve registered are canceled.

**Music Course Fees** — Fees are charged for the following services or facilities: private instruction (per applied music course), $145 (fee for music major is $75); class instruction (class lesson course), $70 (fee for music major is $35); class instruction (functional piano course), $70 (fee for music major is $35). Music majors carrying less than 12 credits must pay full fees. Full-time music majors (12 credits or more) will not have to pay more than $135 (fall 1995) or $165 (spring 1996) for any combination of the above fees. Practice room use by student not enrolled in one of the above music courses, on a space available basis, is $70.

**Parking Fee** — Approximately $150-$200 per year is charged for on-campus automobile parking. If you park on campus, you need a decal.

**Payment Plan Charge** — A processing fee of $40 is added to the total amount due when you’re approved for a payment plan. See Paying Fees.

**Student Activity Fee** — If you’re enrolled in at least three, but fewer than eight credit hours (including both on- and off-campus courses), you will be charged a $25 per semester student activity fee. If you’re carrying eight or more credit hours (including both on- and off-campus courses), you will be charged a flat $100 per semester student fee. This fee is made up of a $25 ASUAF fee and a $75 Student Recreation Center fee. If you live in university housing, you will be charged the $100 fee regardless of the number of credit hours you take. If you’re taking fewer than eight credit hours, you have the option of paying the additional $75 Student Recreation Center fee, but are not required to do so.

The $25 fee supports the activities of ASUAF (student government) which represents student views and concerns with the university administration, the board of regents and the Alaska Legislature. This fee also pays for the publication of the Sun-Star, the UAF student newspaper.

Paying the $25 or $100 fee also entitles you to student rates at all ASUAF functions and services, including dances, concerts, rentals, ombudsman, legal advice, ASUAF aerobics, use of Wood Center facilities; and participation in student elections; and are admitted at student prices to university-sponsored athletic events. Contact the Associated Students of the University of Alaska Fairbanks at (907) 474-7355 for more information.

**Other General Fees**

(per use unless otherwise indicated)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate, Associate, Baccalaureate or Graduate</td>
<td>$</td>
</tr>
<tr>
<td>Degree Application for Admission</td>
<td>$35</td>
</tr>
<tr>
<td>Credit by Examination fee</td>
<td>$40/credit</td>
</tr>
<tr>
<td>Duplicate Copy Fee</td>
<td>$5/copy</td>
</tr>
<tr>
<td>Graduation Application</td>
<td>$20 or (30 late)</td>
</tr>
<tr>
<td>Late Placement and Guidance Test Fee</td>
<td>$5</td>
</tr>
<tr>
<td>Program Plan Fee</td>
<td>$5</td>
</tr>
<tr>
<td>Records Duplication Charge</td>
<td>$5/document</td>
</tr>
<tr>
<td>Textbooks (approximate)</td>
<td>$325/semester</td>
</tr>
<tr>
<td>Transcript (Official) Fee</td>
<td>$5/transcript</td>
</tr>
<tr>
<td>Priority Service</td>
<td>$10/transcript</td>
</tr>
<tr>
<td>Transcript (Unofficial)/Counseling Report Fee (for pickup only)</td>
<td>$2/transcript</td>
</tr>
<tr>
<td>Immediate Service</td>
<td>$1/transcript</td>
</tr>
<tr>
<td>Verification of Enrollment</td>
<td>$5</td>
</tr>
</tbody>
</table>

All fees are subject to change.

**Definitions: Other General Fees**

**Admission Processing Fee** — You must submit a $35 processing fee with your application for admission.

**Credit by examination fees** — You will be charged $40 per credit hour for credit by examination.

**Duplicate Copy Fee** — If you lose your registration paperwork, there is a $5 charge for replacing it. A duplicate copy of your fee statement may be obtained at the Business Office; duplicate registration forms may be obtained at Admissions and Records.
Graduation Application Fee — A non-refundable graduation application fee must be paid at the time an application for graduation is filed. The fee is $20 if the application is filed by the published deadline and $30 if the application is filed after that date.

Late Placement and Guidance Test Fee — A fee of $5 is charged for a placement and guidance test taken at an unscheduled time.

Program Plan Fee — The Office of Admissions and Records will provide without charge one plan for a schedule of courses leading to a degree for currently enrolled degree students with a declared major. A second program plan will be provided for $5.

Records Duplication Charge — You may obtain copies of documents in your file in the Admissions and Records Office (excluding transcripts from any school) if time permits, by making a written request, for a cost of $5 per document. These copies are unofficial and bear a statement to that effect. Mailing copies of documents provided through this service is not available.

Textbooks — You can expect to pay up to $325 per semester for textbooks.

Transcript (Official) Fee — Official transcripts of UAF academic records are prepared for a fee of $5 for each copy. Normal processing time is two weeks; however, at the end of a semester or at other times during the year, you should allow four weeks for processing.

You may occasionally need transcripts sooner than one can be produced through regular processing. For a $10 fee, paid when the request is made, a transcript will be prepared as soon as possible, within 36 hours after the request is made and the fee paid. For each additional copy of the transcript made from the same request, a $5 fee is charged. Therefore, when you need priority service for two transcripts, the fee is $15. All requests for transcripts must be submitted in writing. Information to be included in the request includes dates and places of attendance, social security number and date of birth.

Transcript (Unofficial)/Counseling Report Fee — If you wish an unofficial copy of your academic records in either a transcript or counseling report format, you may request a copy for pickup at the Admissions and Records Office. If you need a copy immediately, there is a $2 fee. Overnight service is $1 per copy. These unofficial records are printed on plain paper and are used for academic advising. The unofficial transcripts or counseling reports are available for pickup only.

Verification of Enrollment Fee — If you need written verification of your enrollment for the current semester for insurance, loan, scholarship or other purposes, you may request one from the Office of Admissions.

Paying Fees
At registration, you are expected to pay all charges due for the entire semester. This includes tuition and fees, room rent, meal ticket costs, student activity fees, health fees and deposits. In addition, any charges unpaid at the end of the previous semester are due and must be paid before you can re-enroll at the university. If you have a past due debt with the university and submit an enrollment form and payment for the current semester, you will not be enrolled into your classes and the payment will be applied toward your past due debt.

Registration is not complete until you have paid your fees.
If you're unable to pay all charges at the beginning of the semester, you may apply for a payment plan. The Financial Aid Office provides applications. Approval is based on your expected receipt of financial aid, your credit history at UAF and your academic background including your GPA and the number of credits you've completed at UAF.

Provisions of the payment plan are as follows:
1. You must pay the entire amount due for your housing and food costs during fee payment.
2. You must pay a minimum of 50 percent (50%) of all assessed fees at fee payment unless payment is guaranteed by financial aid. Guaranteed financial aid is defined as aid: a) which you applied for at least three months prior to the start of the semester, and b) which you are eligible to receive when it arrives, i.e., your student status and/or grades will not prohibit distribution of the aid to you.
3. The balance is due in a maximum of two equal payments. You will be informed of these due dates when the payment plan is approved.
4. A $40 processing fee is added to the total amount due.
5. Proceeds of any financial aid will be used to pay all outstanding fees when the financial aid is disbursed to you, regardless of the payment due dates.
6. You must complete an application for a payment plan and give it to the cashier during fee payment. You will be charged a late fee if you fail to do this.
7. Each delinquent payment is subject to a $35 late fee. You are responsible for meeting this obligation; no bills are mailed.

Senior Citizen Tuition Waiver — Alaska residents 60 years of age or older may enroll without tuition charges in any course for which they are qualified and in which space is available. Course material fees and registration fees for non-credit courses are not waived. Senior citizen tuition waivers are available when fees are paid.

Consequences of not Paying
UAF may withhold transcripts, diplomas or final grade reports from you if you haven't paid all financial obligations to the institution. If you're delinquent in paying any amount due the university, registration for succeeding semesters may be withheld.

Your registration, meal plan and housing contract may be canceled at any time if you fail to meet installment contract payments or financial obligations. If you fully satisfy your financial obligation and are allowed to re-enroll, you will be charged a $100 reinstatement fee. The registration process is not complete until you have paid all fees and charges due the university.

Refunds
Housing and Meals
If you move off campus or withdraw from the university, room refunds will be given according to the following schedule:

<table>
<thead>
<tr>
<th>Withdrawal Period</th>
<th>Refund Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class days 1-5</td>
<td>75% of the semester housing charge</td>
</tr>
<tr>
<td>Class days 6-15</td>
<td>50% of the semester housing charge</td>
</tr>
<tr>
<td>Class days 16-30</td>
<td>25% of the semester housing charge</td>
</tr>
<tr>
<td>Beyond 30 days</td>
<td>No refund will be issued.</td>
</tr>
</tbody>
</table>

Any refund of board charges will be calculated based upon the days remaining in the semester. A service charge of $75 will be subtracted from each refund of board charges, regardless of the date of withdrawal from the board plan. No refunds will be available after the twelfth week of the semester.

If you are withdrawing from courses or canceling enrollment, you must complete an official withdrawal form and turn it in at the Office of Admissions and Records. Full or partial refund of undergraduate and graduate credit hour fees, and the non-resident tuition and fees will be made under the following circumstances:
1. If the courses you registered for are canceled by UAF, your tuition and fees will be refunded in full.
Refunds —
General University Tuition and Fees

<table>
<thead>
<tr>
<th>Course Length</th>
<th>100% Refund Tuition and Fees</th>
<th>50% Refund Tuition Only</th>
<th>No Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester length courses</td>
<td>Prior to and during the first 5 days of instruction for the semester</td>
<td>6th through 10th days of instruction for the semester**</td>
<td>On or after the 11th day of instruction for the semester**</td>
</tr>
<tr>
<td>Courses meeting more than one week but less than a semester</td>
<td>Prior to and during the first 7 calendar days of the course***</td>
<td>8th through 14th calendar day of the course***</td>
<td>On or after the 15th calendar day of the course***</td>
</tr>
<tr>
<td>Courses meeting less than one week in length</td>
<td>On or before the first day of the course</td>
<td>None</td>
<td>After the first day of the course</td>
</tr>
</tbody>
</table>

* Drop/Add and Total Withdrawal forms must be submitted to the Office of Admissions and Records by the deadlines to qualify for refunds.
** The first day of instruction for semester-length courses is the first day of instruction listed in the semester registration class schedule.
*** Student initiated withdrawals are permitted only during the first 60 percent of a course. Therefore, no refunds will be issued after the withdrawal deadline for any course.

2. If you formally withdraw from a course, a refund will be made according to the following schedule as determined by the date of the formal withdrawal action.

A. For semester-length courses:
   1. 100 percent refund of tuition and fees — withdrawal prior to and during the first five days of instruction for the semester.
   2. 50 percent refund of tuition only — withdrawal on or after the sixth day through the tenth day of instruction for the semester.
   3. No refund or exchange of tuition — withdrawal on or after the eleventh day of instruction for the semester.
   4. For the purpose of the refund policy in A. 1, 2, and 3, the first day of instruction is the date as indicated in the official semester registration class schedule.

B. For courses meeting more than one week but less than a semester:
   1. 100 percent refund of tuition and fees — withdrawal prior to and during the first seven calendar days of the course.
   2. 50 percent refund of tuition only — withdrawal on or after the eighth calendar day through the fourteenth calendar day of the course.
   3. No refund — withdrawal on or after the last day for student-initiated withdrawals.
   4. For the purpose of the refund policy in B. 1, 2, and 3, the first day of instruction is the course start date as indicated in the semester registration class schedule. No refunds will be issued after the official withdrawal deadline for any course.

C. For courses meeting less than one week:
   1. 100 percent refund of tuition and fees — withdrawal on or before the first day of the course.

2. No refund — withdrawal after the first day of the course.
3. For the purpose of the refund policy in C. 1 and 2., the first day of the course is the course start date as indicated in the semester registration class schedule.
4. The date of withdrawal on your official withdrawal form determines your eligibility for a refund.
5. If your registration is canceled as a result of disciplinary action, you forfeit all rights to a refund of any portion of your tuition and fees.
6. Vocational/technical course fees are subject to this refund schedule.
7. In case the operations of UAF are adversely affected by war, riot, natural act, action of civil authority, strike or other emergency or condition, the university reserves the right to take action to curtail part or all of its operations, including action to cancel classes and action to discontinue services. In any case in which a significant curtailment is judged proper by UAF, the university's liability is limited to (at most) a refund of tuition and fees paid.

Financial Aid

What is Financial Aid?
Financial aid can help pay for tuition and fees, books and supplies and living expenses. Financial aid provides choice, access and persistence. Choice means students can choose to pursue a college education without first looking at the price tag. Access means students will be able to pay costs of getting into college. Persistence means students will be able to stay in college long enough to complete their educational objectives.

Who Can Apply?
You can apply for financial aid if you're a U.S. citizen or eligible non-citizen and are admitted or plan to be admitted to the university. Clarifications about student eligibility based on citizenship and residency can be obtained at the Financial Aid Office.

Who Receives Financial Aid?
Most full-time UAF students receive some type of financial aid. Even though students enrolled part time can receive some type of financial aid, the major programs require full-time enrollment.

To receive any financial aid, you must:
1. Be admitted by the Office of Admissions and Records.
2. Be enrolled in a program leading to a degree, diploma or certificate.
3. Be making satisfactory academic progress toward your educational goal.
4. Submit an application to the proper agency administering the financial aid programs.

In addition to these requirements, to receive federal Title IV funds, you must not be in default on any federal Title IV loan or owe a refund on any federal Title IV grant.

Where is the Financial Aid Office Located?
The Financial Aid Office is located on the first floor of the Eielson Building on the Fairbanks campus of the University of Alaska Fairbanks. Office hours are from 8 a.m. to 5 p.m. Monday through Friday. The telephone number is (907) 474-7256 and the fax number is (907) 474-7900.

How Do Students Apply?
1. Complete and mail the free application for federal financial aid to apply for all financial aid programs except the Alaska Student Loan Program.
2. Complete a UAF Financial Aid Information Sheet and return it to the UAF Financial Aid Office.

Completing these steps constitutes application for any financial aid offered at UAF, except student loans, State of Alaska programs and scholarships. A separate application is required for each loan program. You may be required to submit other documents before aid is received. The forms needed to apply for federal, state and UAF financial aid programs are available at the Financial Aid Office at UAF.

You may apply for the federal Pell Grant and federal loans throughout the school year.

How is Eligibility Determined?

Submitting a completed application, along with necessary documents, begins the process of determining who will get federal aid. An analysis of your ability to pay is compared with UAF’s standard expense budget. If the amount of money available is less than total college expenses, you have a financial need and are eligible for aid.

Estimated expense budgets for typical full-time undergraduate students for the school year:

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Student Type</th>
<th>Parental Status</th>
<th>Tuition/fees</th>
<th>Books</th>
<th>Supplies</th>
<th>Food, housing</th>
<th>Transportation</th>
<th>Misc./personnel</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married Couple</td>
<td>Single Student</td>
<td>Single Student</td>
<td>$2,860</td>
<td>650</td>
<td></td>
<td>8,730</td>
<td>1,710</td>
<td>2,700</td>
<td>$14,940</td>
</tr>
<tr>
<td>Single Parent</td>
<td>Lives in UAF</td>
<td>Residence Hall</td>
<td>$2,860</td>
<td>650</td>
<td></td>
<td>8,730</td>
<td>1,710</td>
<td>1,890</td>
<td>$9,904</td>
</tr>
<tr>
<td>Single Person</td>
<td>Lives in UAF</td>
<td>Residence Hall</td>
<td>$2,860</td>
<td>650</td>
<td></td>
<td>8,730</td>
<td>1,710</td>
<td>1,890</td>
<td>$9,904</td>
</tr>
</tbody>
</table>

* Tuition for non-Alaska residents, add $4,260

Standard budgets do not always fit everyone. If you have unusual expenses such as medical bills, special child care or emergency items, the Financial Aid Office will try to provide methods of covering these additional expenses. Since eligibility is based on prior year income, you may request a review of your eligibility when your income changes from loss of job, divorce, death or disability.

Residence and physical presence in Alaska for at least one year immediately before applying establishes eligibility for the Alaska Student Loan program. Additional information on residency and eligibility requirements can be obtained from the Alaska Commission on Postsecondary Education, P.O. Box 110505, Juneau, Alaska 99811.

What Types of Aid are Available?

Grants and scholarships

Grants are usually based on your financial need, while scholarship awards are based on academic achievement and promise as well as financial need. These types of aid do not have to be repaid. Most grants and scholarships are designed for undergraduate students.

The federal Pell Grant is a grant for undergraduates to help start paying college costs. Since this grant is based on financial need, every undergraduate should apply for it. Once you have applied, the federal processor will send you a Student Aid Report (SAR) indicating whether you qualify for a federal Pell Grant. Send the SAR to the Financial Aid Office. Federal Pell Grants range up to $2,500 for the 1995-96 school year.

The Federal Supplemental Educational Opportunity Grant (FSEOG) is a grant for exceptionally needy undergraduate students. FSEOGs at UAF could range from $400 to $1,000 each year.

State Educational Incentive Grants (SEIG) are funded by the state of Alaska for needy students enrolled full-time in undergraduate programs at postsecondary institutions in any state. Grants range from $100 to $1,500 each year. Application materials include filing the financial aid and SEIG applications available during the spring term.

The Bureau of Indian Affairs (BIA) offers federal grants to undergraduate full-time students. You must be at least one-quarter American Indian or Alaskan Native to apply. These grants are based on financial need and supplement other financial aid. Grants range from $50 to $3,000 or more each year. The average grant at UAF is $1,600. Further information on BIA grants can be obtained from the BIA Regional Office, 1675 "C" Street, Anchorage, Alaska, 99501-5198, telephone (907) 271-4115.

Some regional and village corporations provide scholarships to shareholders. Contact your local corporation for details on eligibility and application procedures or call UAF Rural Student Services at (907) 474-7871.

To apply for UAF scholarships, contact the Financial Aid Office, First Floor, Eielson Building, Fairbanks, Alaska 99775, telephone (907) 474-7256. Statewide scholarships are for students enrolled at the University of Alaska in Anchorage, Juneau and Fairbanks are administered by the UA Foundation, P.O. Box 755080, Fairbanks, Alaska 99775, telephone (907) 474-7687. Scholarship amounts vary greatly depending on the funding source.

Chancellor’s Scholarships and Talent Awards are available in limited numbers to first-time freshmen. You should apply by March 15 to the Office of Admissions Counseling, P.O. Box 757480, Fairbanks, Alaska 99775, telephone (907) 474-7822.

Work

UAF employs student workers for various tasks throughout the year. Employment is administered by individual departments and restricted to full-time students. Students work no more than 20 hours each week. Pay rates are based on the job classifications and average pay can vary from $150 to $400 each month. Further information on student employment can be obtained from Personnel Services, 108 Administrative Services Center, P.O. Box 757860, Fairbanks, Alaska 99775, telephone (907) 474-7700.

Federal Work Study (FWS) is a federal program which provides jobs for graduate and undergraduate students with financial need. Job placement and working conditions are similar to regular student employment. To qualify for FWS, students must be eligible for federal financial aid as determined by the Financial Aid Office.

Loans

A loan for college costs is money that must be repaid. Loans represent a major source of assistance you should consider as you try to meet the full costs of your education. Educational loans generally have long-term repayment schedules, offer low interest rates, and often have provisions for deferring payments. Some loans are based on residency in Alaska while other loans are based on financial need.

The Alaska Student Loan Program (ASL) is administered by the state of Alaska to provide student loans to eligible Alaska residents. Eligibility is based on residency and physical presence in the state of Alaska for at least one year before applying. This program is the major source of financial aid for students at UAF. Students attending part time (6 to 11 credits each semester) may borrow for the cost of tuition fees, books and supplies up to $2,000 as an undergraduate and up to $2,500 as a graduate student. Full-time students enrolled in 12 or more credits each semester may borrow for food and housing costs as well as tuition, fees, books and supplies up to $5,500 as an undergraduate and up to $9,500 as a graduate student. The Alaska Student Loan, combined with estimated income for the school year, cannot exceed estimated cost of education as determined by the Alaska Student Loan Office. Repayment begins no later than one year after the borrower ceases full-time study. The finance charge is 8
percent interest a year on the outstanding balance. The state of Alaska will pay the interest for students during the qualifying period.

The priority deadline for receipt of applications is May 15 for the school year beginning in the fall. Applicants must apply each year. Applications are available throughout the state at high schools and postsecondary schools. Further information about the Alaska Student Loan Program can be obtained from the Division of Student Financial Aid, Alaska Commission on Postsecondary Education, Box 110505, Juneau, Alaska 99811, telephone (907) 465-2962.

The following table outlines what your monthly payments would be over a 10-year repayment cycle for various loan amounts borrowed.

<table>
<thead>
<tr>
<th>Total Loan</th>
<th>Monthly Payments</th>
<th>8 Percent Interest</th>
<th>Total Repayment</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3,000.00</td>
<td>$38.40</td>
<td>$1,608.00</td>
<td>$4,608.00</td>
</tr>
<tr>
<td>$4,000.00</td>
<td>$51.20</td>
<td>2,143.60</td>
<td>6,143.60</td>
</tr>
<tr>
<td>$5,000.00</td>
<td>$63.99</td>
<td>2,679.20</td>
<td>7,679.20</td>
</tr>
<tr>
<td>$6,000.00</td>
<td>$76.80</td>
<td>3,216.00</td>
<td>8,216.00</td>
</tr>
<tr>
<td>$7,000.00</td>
<td>$89.60</td>
<td>3,751.60</td>
<td>9,751.60</td>
</tr>
<tr>
<td>$8,000.00</td>
<td>$102.39</td>
<td>4,287.20</td>
<td>11,287.20</td>
</tr>
<tr>
<td>$9,000.00</td>
<td>$115.19</td>
<td>4,822.80</td>
<td>12,822.80</td>
</tr>
<tr>
<td>$10,000.00</td>
<td>$128.00</td>
<td>5,359.60</td>
<td>14,359.60</td>
</tr>
<tr>
<td>$20,000.00</td>
<td>$255.99</td>
<td>10,719.20</td>
<td>20,719.20</td>
</tr>
</tbody>
</table>

The federal Stafford Student Loan Program provides subsidized student loans from a participating lender, such as a bank, credit union or savings and loan association. Yearly loan limits are $2,625 for first-year students, $3,500 for second year students and $5,500 for upper level undergraduates, with a cumulative maximum of $23,000. Graduate students may borrow $8,500 each year. Since this loan is based on financial need, students must apply for the federal Pell Grant before the loan application can be approved by the Financial Aid Office. A variable rate, not to exceed 9 percent, is determined each year for the federal Stafford program.

The unsubsidized federal Stafford Loan is available to dependent students who may not qualify for a subsidized federal Stafford loan or who qualify for less than the full annual amount. Unsubsidized means the federal government does not pay interest to the lender on your behalf at any time. You may be eligible to receive both subsidized and unsubsidized loans, but the total of both loans must not exceed the federal loan limits. Independent undergraduate students may borrow, in addition to the subsidized federal Stafford Loan, up to $4,000 as a first or second year student, and up to $5,000 as a junior or senior. Graduate students may borrower $10,000 each year.

Many national lenders participate in the program. Inquire at your hometown bank or pick up an application from a representative group of lenders at the Financial Aid Office.

The federal Parent Loan for Undergraduate Students (PLS) is a program for parents of dependent students. The cost of attending UAF determines the annual and aggregate loan limits. A variable interest rate of finance charge, not to exceed 10 percent, is determined each year for the federal PLUS programs.

The Family Education Loan Program is a state loan program which allows the student's family to share the cost of the student's education. As an alternative to the ASL, the family member can borrow up to $5,500 for an undergraduate and up to $6,500 for a graduate. The interest rate is 5 percent. The student must be claimed as an exemption on the parents' federal tax return.

Emergency Loans are administered by UAF for enrolled students who have unexpected financial demands. These short-term loans allow students to borrow up to $500. Information about these loans can be obtained at the Financial Aid Office.

To apply for an emergency loan, you must be in good academic standing and have no outstanding debt with UAF. You are required to verify your need for the loan. Applications will be accepted from the first day of registration until Nov. 1 for the fall semester and until April 1 for the spring semester. A service charge of $10 will be charged for each loan.

To be eligible for the federal student aid programs, you cannot owe a refund on any federal grant nor can you be in default on any federal loan for attendance at any institution. Some financial aid is based on the expected receipt of aid from other programs. To receive as much aid as possible, you should apply for the federal Pell Grant Program. More information about the federal programs is given in the "Student Guide." The Federal Student Aid Information Center has a toll free number, 1-800-4-FEDAIL, 9 a.m. to 5:30 p.m., Monday through Friday, eastern time, for students, parents and educators to inquire about student aid and the application process.

Each applicant for financial aid will be sent a Financial Aid Notice when aid is offered by the Financial Aid Office. Students may accept or decline the offer of aid. Students must apply each year for financial aid.

UAF reserves the right to revise any financial aid award. Modification of awards may be required due to lack of federal or state funding, corrections or changes in the data reported to the university by parents and/or students, receipt of additional awards from non-college sources, unintended error, student changes in credit load, change in residence, or other reasons consistent with university policies and procedures.

What are the Application Deadlines?

<table>
<thead>
<tr>
<th>Application</th>
<th>Priority deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska State Student</td>
<td>May 15</td>
</tr>
<tr>
<td>Federal Pell Grant</td>
<td>Anytime during the school year</td>
</tr>
</tbody>
</table>

What Does it Take to Remain Eligible?

To continue to receive financial aid, you must be "in good standing" which means undergraduates must earn a cumulative 2.0 or higher grade point average for all course work for which financial aid was paid; graduate students must maintain at least a 3.0 GPA to be eligible. The semester GPA must be 1.5 for undergraduates or 2.5 or higher for graduate students. The Financial Aid Office monitors the academic progress of aid recipients. Both semester and cumulative GPA must be maintained for continued eligibility. If eligible, you can receive aid for a maximum of 12 semesters or 195 semester credits for an undergraduate degree or 36 semester credits for a master's degree. Doctoral candidates must follow the time frames determined by their departmental and institutional committees.

Aid will be suspended if you fail to complete the required credits with the minimum GPA or exceed the maximum number of semesters or credit hours. Generally, students can regain eligibility for participation in student aid by completing 12 credits with at least a 2.0 GPA. Any student whose aid has been suspended may appeal that decision. A written appeal which states the reasons for the failure to maintain satisfactory progress standards and the steps taken to meet those standards in the future is required. Appeals should be directed to the appeal committee which will determine if the satisfactory progress requirements will be waived. The satisfactory academic progress requirements are subject to change due to changes in federal or state law and institutional policy. A complete description of the satisfactory progress requirements is available at the Financial Aid Office.

How is Payment Made to the Student?

Tuition, fees and all other amounts due UAF at the time of disbursement must be paid before the proceeds of your financial aid
are released. Disbursement is usually in equal amounts, one-half of total award, at the beginning of each semester. All financial aid checks are released to students at the Business Office in Signers' Hall. Proper identification with photograph must be presented before checks will be released.

Proceeds of any financial aid will be used to pay any outstanding amount due the university on a payment plan, and all other past due amounts, when the financial aid is disbursed to you, regardless of the payment plan due dates.

You should allow at least five days for processing after the financial aid notice is signed and returned before inquiring about your check.

According to the Tax Reform Act of 1986, all scholarships, fellowships and federal financial aid grants are counted as taxable income to the extent these awards, either individually or together, exceed the cost of tuition and related expenses. It is your responsibility to report all such aid on your tax return.

When a student withdraws from classes, a refund of university charges may be due. The exact refund amount is determined by federal law. Any refund due will first be applied to the federal, state and institutional financial aid programs from which the student received aid during the school year. The part of the refund applied to federal programs is equal to the proportionate amount received from the federal programs other than federal CWS earnings compared to the total of all aid received, exclusive of all work earnings. The remaining portion of any refund will be applied to state and institutional programs if the student received aid from these programs.

What are the Rights and Responsibilities of Accepting Financial Aid?

Your rights
As a financial aid recipient at UAF, you have the right to:
A. Know what financial programs are available to you.
B. Know how to apply, how eligibility is determined and what terms and conditions are related to your aid.
C. Know how the university determines whether you are making satisfactory academic progress toward your degree and what happens if you are not.
D. Request an explanation of your financial aid package,
including what portion is gift and what portion must be repaid and the terms of repayment.

E. Know the costs of attending UAF and the refund policy for students who withdraw.

Your responsibilities
To receive financial aid at UAF, you must:
A. Complete all financial aid forms accurately and file them on time.
B. Apply every year because financial aid is not automatically extended from year to year.
C. Provide correct information on all applications and documents submitted.
D. Read and understand all documents you sign. You should also keep copies of them for your records.
E. Know the limits and conditions of financial aid programs.
F. Notify the Financial Aid Office of any change of address, name, marital status, attendance status or receipt of additional awards.

For more information on financial aid at UAF, contact: Financial Aid Office, University of Alaska Fairbanks, First Floor Eielson Building, Fairbanks, Alaska 99775, telephone (907) 474-7256.

Ringo Jimmy as “Elder” (sitting), Erin Downing as “Eagle” (left) and Greg McGuire as “Shaman” prepare for Tuma Theater’s spring 1994 production of Agayu.
Housing (Residence Life)

Residence Halls
Each hall has staff assigned to the building from the Department of Residence Life. Senior hall staff are responsible for the administration and programming within the building. Resident assistants are full-time students who work with senior staff in planning and administering a program of social, recreational and cultural activities.

Who is Eligible?
In general, you must maintain full-time status (12 credits for undergraduate and nine credits for graduate students) to qualify for student housing. Graduate student extended registration is considered full time for purposes of housing allocation. Students already living on campus renew their contracts each semester in order to maintain eligibility for the following semester. You should consult the residence life staff about regulations concerning maximum terms of occupancy. Since housing application request forms are mailed to students from the Office of Admissions and Records, you should plan to complete your enrollment application well in advance.

How do Students Apply?
If you request housing information on your application for admission, your name will be forwarded to the Office of Residence Life. Upon confirmation of admission, you will be mailed a housing contract and a brochure. Complete the contract and return it with the necessary deposit to: Office of Residence Life, P.O. Box 756860, Fairbanks, AK 99775-6860. You will be sent confirmation of acceptance into housing and a receipt for your deposit.

What Does it Cost?
Room Rent — Along with all other fees, room rent is due in full at registration. Current semester room charges are $900 per person in double rooms; $1,100 for single rooms; and $1,150 per person in apartments. These rates are subject to change prior to July 1. Room fees permit the use of hall services such as lounge and recreation rooms, laundry areas and campus telephone service.

Refunds — If you move off campus or withdraw from the university, room refunds will be given according to the following schedule:

<table>
<thead>
<tr>
<th>Withdrawal Period</th>
<th>Refund Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class days 1-5</td>
<td>75% of the semester housing charge</td>
</tr>
<tr>
<td>Class days 6-15</td>
<td>50% of the semester housing charge</td>
</tr>
<tr>
<td>Class days 16-30</td>
<td>25% of the semester housing charge</td>
</tr>
<tr>
<td>Beyond 30 days</td>
<td>No refund will be issued.</td>
</tr>
</tbody>
</table>

Any refund of board charges will be calculated based upon the weeks remaining in the semester. A service charge of $75 will be subtracted from each refund of board charges, regardless of the date of withdrawal from the board plan. No refunds will be available after the twelfth week of the semester.

Refund of Deposits — A $250 room reservation/damage deposit/application is due when you return your completed housing contract. This deposit (minus the $25 application fee) will be refunded to you if you withdraw your housing contract by sending a written statement to the Office of Residence Life by Aug. 1 for fall semester and Dec. 1 for spring semester.

During occupancy, deposits are held until the contract period ends. Deposits are automatically transferred to subsequent semesters if you renew your housing contract.

Upon terminating your room contract, your deposit will be refunded if all contractual provisions have been met and no room cleaning or damage charges are assessed. The Office of Residence Life and the university reserve the right to deduct from the balance of the deposit other outstanding financial obligations.

Contracts — Room and board contracts are for one semester. Contracts begin officially at 9 a.m. on the opening date. Contracts may be voided if you don’t maintain full-time academic status (as defined by the Office of Residence Life). You may be released from contracts because of marriage, health reasons or other emergencies deemed appropriate by the Director of Residence Life.

What about Meals?
Dining services on campus are provided for the university by a private contractor. Board programs begin in the Lola Tilly Commons the morning following the official opening, and end on the last day of final exams. During vacation periods, the Commons is closed and limited food service is available at other campus locations on a cash basis.

There are 19 scheduled meals per week (breakfast, lunch and dinner are served Monday through Friday and brunch and dinner are served Saturday and Sunday). Three different board plan options are available to students.

If you don’t live on campus, you may be authorized by the Director of Residence Life to purchase a board program. The cost includes the price of the board program selected plus a board net charge of $110. This additional charge is used to maintain the dining facilities and equipment.

What Facilities are Available?
Bartlett Hall houses 316 male and female students in double and single rooms on eight floors.

Lathrop Hall houses 136 male and female students in double rooms.

McIntosh Hall houses 98 male students in double rooms on four floors.

Moore Hall houses up to 315 students in double and single rooms within its eight floors.

Nerland Hall houses 98 male and female students in double and single rooms on four floors.

Skarland Hall houses 135 male and female students in double and single rooms on four floors. Skarland Hall contains rooms on the first floor designed to accommodate mobility impaired students.

Steven Hall houses 98 male and female students in double and single rooms on four floors.

Wickersham Hall houses 95 female students on three floors in single rooms and suites. The suites consist of two double sleeping rooms, a study and a half-bathroom.

The Student Apartment Complex (SAC) is comprised of 60
two-bedroom apartments accommodating 240 upper class single students. A board plan is not required for apartment residents. This complex includes six apartments which were designed to accommodate mobility/hearing impaired students.

What are the Rooms Like?

Student rooms are equipped with a bed, desk, chair, mirror and closet space for each resident. You'll need to provide your own bedding (sheets, pillows, blankets), towels and face cloths. Each hall has recreation-lounge and laundry facilities. Regular custodial service is provided in common areas such as corridors, lounges and centrally located bathrooms.

Residence hall students are permitted to remain on campus during the Thanksgiving and spring vacation periods at no additional cost. Students approved to stay anytime during the break between the end of the fall semester and the beginning of the spring semester will be charged $100 and may be consolidated into other areas.

What about Room Assignments?

Hall reservations are made based on date of deposit, provided application and deposit requirements have been completed. You'll be given your room assignment when you arrive.

Current resident graduate and upper class students are given preference over incoming students for single rooms and apartments. Single room applications are available to juniors, seniors and graduate students after the Office of Residence Life has confirmed the acceptance of housing contracts. Single room applications are due March 1 and November 1 of each year for subsequent semesters.

Student Family Housing

Family housing is provided in several different locations. All have access to free laundry facilities, parking facilities and limited storage space. Most apartments are furnished. Student managers reside in family housing and are available to help.

Residents supply their own personal items including dishes, utensils and bedding.

Who is Eligible?

In general, you must maintain full-time status (12 credits for undergraduate and nine credits for graduate students) to qualify for student housing. Graduate student extended registration is considered for purposes of housing allocation. Eligibility for family housing is contingent upon acceptance as a student at UAF. You should consult the Residence Life staff about regulations concerning maximum terms of occupancy.

How do Students Apply?

Applications for student family housing are mailed upon request by the Office of Residence Life when proof of admission is received. A non-refundable $25 processing fee is due with the completed application. An additional $225 cleaning/damage deposit is required upon assignment to apartments.

Space is always in high demand in student family housing. Apartments are assigned on a first-request basis, from current wait lists.

For more information about family housing, write: Office of Residence Life, P.O. Box 756860, Fairbanks, AK 99775-6860.

What Facilities are Available?

Harwood Hall houses 36 married student couples without children in 18 efficiency and 18 one-bedroom apartments. All of these apartments are furnished.

Hess Village contains 72 apartments consisting of: 16 one-bedroom; 48 two-bedroom; and eight three-bedroom apartments. These apartments are available for married couples or single parents with dependent children. Apartments are assigned according to family size.

Stuart Hall contains 12 furnished one-bedroom apartments available for married couples without children.

Walsh Hall has 12 one-bedroom furnished apartments occupied by married couples without children.
Student Services: Helping You Stay on Track

Academic Advising and Career Development

Academic Advising and the Advising Center

Deciding on a major, choosing electives and planning the classes you take each semester may be the most important decisions you make as a student at the university. Your adviser can help you by explaining programs and requirements, recommending courses and answering your questions. The role of your adviser is to help you choose a program to help you achieve academic and career goals.

If you are a declared major, your adviser will be a faculty member from your academic department. You should contact the department for specific assignment of a faculty adviser.

If you haven’t chosen a major yet, the Fairbanks campus Academic Advising Center is available for students who need help in choosing a major, selecting classes and planning an academic schedule. It also serves as a clearinghouse for general university and degree information. The Advising Center has general advisers and faculty members from various disciplines throughout campus. You have access to all members of the advising team and department advisers.

In addition to advising incoming freshmen and undeclared students, Advising Center staff are available to help transfer students, international students, non-degree students and rural students.

The Advising Center assists students with non-traditional credit options, interdisciplinary undergraduate degrees and the Bachelor of Technology degree program. The Advising Center can also provide information on pre-professional programs.

The Advising Center, in cooperation with other departments, sponsors a variety of workshops on such subjects as degree programs and career exploration, as well as a wide range of special topics.

The Advising Center is located on the fifth floor of the Gruening Building, (907) 474-6396.

Alaska Teacher Placement

Alaska Teacher Placement (ATP) is Alaska’s statewide clearinghouse for educational placement. ATP helps Alaska’s public school districts employ educators for their schools.

Job announcements received at ATP are sent to qualified registrants who may be from Alaska, the Lower 48, or other countries. To facilitate the interviewing process, ATP hosts a Spring Job Fair in Anchorage, and two or three summer Job Fairs in Fairbanks. Forty to 50 school districts participate in these fairs.

Permanent placement files for UAF education majors are maintained by ATP.

Alaska Teacher Placement is located in the Moore-Bartlett-Skarland Complex, (907) 474-6644.

Career Development Center

If you’re an adult student needing career advice, the Career Development Center can help; the center offers help in making career decisions, designing training programs and developing job search skills. The counselor works with students on career planning, pre-admission advising, program planning, personal crisis intervention and other concerns.

A specialized library of occupational and educational information, a computerized career guidance system, software and individual consultations at various stages of the career development process are available. The center assists students in gaining the information and experience needed for effective career planning, as well as the continuing process of career changes. The goal of the center is to assist students in identifying satisfying career choices based on a realistic self-assessment of themselves, accurate knowledge of the world of work and experience with ways to activate career plans.

Available both by appointment and on a walk-in basis, these services are free to enrolled and prospective students.

The center is a component of the Tanana Valley Campus Student Development and Learning Center. It is located at the Downtown Center, (907) 451-7223.

Career Services

Whether you’re a freshman or a senior, an important part of your university experience is developing life and career goals. Career Services can help you work out an academic program to enhance your career potential. The Career Services Center provides career counseling, career information, assistance in finding summer employment and academic internships, as well as helping you find professional employment after you graduate.

You are encouraged to use the various job hunting aids available at the center. These include placement files, tips on writing a resume, help in preparing for interviews and information on current job openings. Each year many employers visit the campus to recruit students and alumni. The center coordinates these visits, and every attempt is made to match the employers’ needs with those of students and alumni. Each spring semester, students are assisted in locating summer employment with a variety of employers across the state.

The Career Services Center is located on the fifth floor of the Gruening Building, (907) 474-7596.

Developmental Studies

Developmental studies courses are designed to prepare students for admission to occupational-technical and university-academic programs, help students who are having trouble with courses or want to improve their efficiency and help students who want to improve their skills but are not necessarily enrolled in a program.

The need for developmental studies is determined by high school transcripts, test scores, other achievement data and discussion with counselors. Students may also elect developmental studies courses based on personal assessment. There are three types of developmental studies courses: communication skills development, math skills development and general academic development. Course descriptions for developmental studies are found under Developmental Studies, English and Mathematics.

International Student Advising

If you’re a UAF student from another country, you may be faced with unique situations which American students don’t usually en-
counter. You must comply with immigration regulations, adapt to a
new and often strange culture, and adjust to the American higher
education system. The international student adviser serves as a liaison
between you and the U.S. Immigration Service, authorizes documents
for student visas, helps you adjust to the U.S., Alaska and UAF, and
provides counseling for personal and academic problems.

The international student adviser is located on the fifth floor of
the Gruening Building, (907) 474-7317.

Rural Student Services

"Rural Student Services is committed to responding to student
needs by providing quality services to Native and rural students who
expend positive effort in the pursuit of higher education and its
opportunities”—from Rural Student Services Mission Statement.

Rural Student Services (RSS) facilitates the transition from a
small school and village environment to university life. RSS advisers/
counselors provide comprehensive academic advising and referrals to
various academic support services on the UAF main campus. Other
services provided by RSS include assistance with paperwork required
to attend the university, personal counseling and student advocacy.

Rural Student Services is located on the fifth floor of the
Gruening Building, (907) 474-7871.

Student Development and Learning Center

The Student Development and Learning Center provides ser-
vices that contribute to a successful learning experience or career
transition. The center has three components: the Learning Center,
career and academic counseling and developmental studies. SDLC
services are available by appointment and on a walk-in basis. A series
of student success workshops are sponsored by the SDLC on a variety
of topics in the areas of study skills, career development and personal
development. These workshops are available to students and members
of the community at no charge.

The Student Development and Learning Center is located in the
UAF Downtown Center, (907) 451-7223.

Tutoring Services

ASUAF tutoring provides tutorial services for individual courses
on request. Please contact ASUAF (the student government) for more
information, (907) 474-7355 or 474-7601.

The Learning Resource Center is located at the UAF Downtown
Center, with outreach tutoring and labs for developmental
students on the main campus. LRC staff help students improve and
expand skills needed to be successful in university classes. Indivi-
dualized instruction and tutoring in mathematics, writing, reading,
grahm, spelling and study skills are provided.

LRC staff help students identify problem areas in courses and
assist in developing personal study plans/skills. Students may work
with course materials or LRC resources.

A variety of learning options are available, including tutoring,
lab courses, workshops, independent and small group study and
computer assisted learning programs. Students may use the audiovi-
sual aids, typewriters, computers, quiet study carrels and other re-
sources. For more information, call the Learning Resource
Center at (907) 451-7223.

The Math Laboratory provides flexible hour assistance to
students enrolled in mathematics courses. The lab is coordinated by
faculty and services are provided by students. For more information
contact the math department, (907) 474-7332.

The Student Support Services Project provides tutoring in a
variety of subject areas for eligible students, based on academic and
financial need. For more information, call (907) 474-6887.

The Writing Center is staffed by English graduate students and
outstanding undergraduate students. It is open Monday through
Friday and Sunday; it is available to all enrolled students. The staff
will review student writing projects during the successive draft
process. They also can help you improve your grammar and usage.
For information, contact the English department, (907) 474-7193.

Veterans' Training

The university is approved for veterans' training in degree and
certificate programs. Although UAF does not have a veterans' office
on campus, the Office of Admissions and Records can provide general
information about educational benefits for veterans. Counseling is
available through the Veterans' Administration. At UAF, veterans
class attendance and academic progress are monitored to ensure
compliance with VA policies.

Students interested in general information about educational
benefits for veterans may contact the UAF Office of Admissions and
Records, (907) 474-7500.

Admissions and Records

The Office of Admissions and Records provides services to
students including pre-admissions counseling, admissions, evalua-
tion of transfer credit, registration, official records support, academic
policy interpretation, veterans' certification, degree audits, gradu-
tion certification and transcript processing. Using a sophisticated
computerized student information system, registration is enhanced by
the use of touchtone telephone registration. Timely grade processing
and academic record accuracy and maintenance are greatly enhanced
by the student information system.

The Admissions and Records Office is located on the first floor
of Signers' Hall, (907) 474-7500 or 474-6708 (TTY).

Bookstore

The bookstore is operated by the university as a non-profit self-
support auxiliary enterprise and is administered by the student service
division. Its mission is to support the academic programs of the
university by providing books and supplies required for course work.
The bookstore also maintains wide selections of general reading
books, college supplies, soft goods, calculators, personal care items,
greeting cards and other merchandise which contribute to the overall
experience offered by the university.

The bookstore is located in Constitution Hall, (907) 474-7348.

Center for Health and Counseling

The Center for Health and Counseling offers services in five
areas: medical, counseling, disabilities, health education and health
insurance. Students must pay the Health Center fee to be eligible for
medical, counseling and health insurance services.

Primary health care and some continued care is provided by a
physician, three nurse practitioners and a medical technologist. Office
visits, medications, laboratory services and medical supplies are
available at reduced costs. Students should call for appointments.

The counseling staff offers individual, group and crisis interven-
tion counseling. Counselors, all with graduate training, provide
assistance with a variety of personal and interpersonal issues. Stu-
dents are encouraged to schedule appointments. In an emergency,
however, every effort is made to see a student as soon as possible.

The center also provides coordination of services for students
experiencing disabilities, including advocacy and assistance with
arrangements for special services such as readers, scribes and inter-
preters. Services are free of charge, and available to all students with
disabilities. See Services for Students with Disabilities.

Staff provide information and referral for individuals and groups
seeking to maintain or improve upon physical and mental health.
ADARE offers outreach to prevent abuse of alcohol and other drugs and to prevent the negative impact of such abuse.

The Student Health Insurance Program is administered through the center. An insurance coordinator is available to answer questions and assist with claims.

The Center for Health and Counseling is located in the Health, Safety and Security Building, (907) 474-7043 or 474-7045 (TTY). The center is open weekdays during the regular academic year.

Orientation Program

UAF's orientation program is offered to students new to UAF. If you are a first-time freshman, a transfer, graduate, international or exchange student, or an adult returning to college, this program was designed with you in mind.

This program will provide you with specific information about UAF as well as general education requirements, advising and scheduling your classes, services available to you, and activities and events you may be interested in.

For information, contact the Wood Center Activities Office, (907) 474-6025.

Services for Students with Disabilities

The University of Alaska Fairbanks is committed to equal opportunity for students experiencing disabilities. Students with disabilities are encouraged to contact the coordinator of Services for Students with Disabilities at the Center for Health and Counseling at (907) 474-5655 or (907) 474-7043 or TTY (907) 474-1827. To accommodate students' disabilities, early contact with the coordinator is extremely important.

Services provided include assisting in determining accommodations needed, advocacy and help with arrangements for special services such as readers, scribes and interpreters. Services are free of charge, and available to all students with permanent and temporary disabilities, regardless of the number of credits taken.

Curb cuts and ramps have been installed at UAF. Almost all campus buildings contain accessible restroom facilities and elevators. The library and museum are accessible and the swimming pool is equipped with a hydraulic lift. Accessible living accommodations are available.

UAF works with students with disabilities to ensure a positive educational experience. If students aren't satisfied with actions taken by the University of Alaska Fairbanks in response to requests for assistance or accommodation, they may obtain a copy of the university's grievance procedures from either the coordinator of Services for Students with Disabilities, or Personnel Services, 108 Administrative Services Center, (907) 474-7700.

Wood Center

Wood Center is the center of campus activities. Its services and facilities are available to all students, faculty, staff, alumni and university guests.

Wood Center offers many services: eating facilities; a recreational area featuring bowling, billiards and video games; a laundry room and shower facilities; and darkrooms. Wood Center also provides campus information, lost and found, meeting rooms and recreational equipment rentals.

The Wood Center Pub offers a wide variety of entertainment each evening Monday through Saturday. The Pub offers a wide selection of domestic and imported beers, microbrews, fine wines and nonalcoholic beverages (must be 21 to enter).

Get acquainted with the Wood Center and make it your leisure-time home! You'll find that it is much more than just a building.
Campus Resources: What's Available

ASUAF

The Associated Students of the University of Alaska Fairbanks is the student government, with offices located in the Wood Center. All students who pay the activity fee are members. ASUAF runs service departments and programs dedicated to making the lives of UAF students easier and more convenient. ASUAF represents UAF students to the university administration and the Alaska Legislature. ASUAF officers are elected by the student body. For information, contact the ASUAF Office, (907) 474-7355.

Academic Computing

Academic Computing is UAF’s student resource for computing facilities. The staff provide consulting services, access to documentation, seminars and classes, and acts as a “one stop” source for all academic user help. Academic Computing supports several hundred terminals and microcomputers installed on the UAF main campus. Dial-up ports are used by many students to access the systems from their homes.

Primary academic computing support for UAF is provided through a Digital Equipment Corporation VAX 7620 (Aurora). Aurora is currently configured with 256 megabytes of main memory, 16 gigabytes of disk storage and the VMS operating system. Similar VAX systems are located at the university’s Juneau and Anchorage locations, and are accessible through the UACN network. Aurora is also connected to NorthWestNet (Internet), facilitating data transfer with several thousand other academic and research computers worldwide.

The Academic Computing office is located in the Rasmuson Library all hours study area in the office in the rear of the terminal lab; the phone number is (907) 474-6564.

Various academic and research departments on the main campus have both mini- and microcomputers for research and instruction. There are also numerous microcomputer systems available for student use.

Undergraduate students enrolled in specific courses may use the Arctic Region Supercomputing Center (ARSC), which supports environmental research and science with an emphasis on high latitudes and the Arctic. See course descriptions for details. Undergraduate students with a faculty sponsor may submit research project proposals to apply for supercomputer use. The ARSC is a national computing resource available to researchers on UA campuses and to scientists worldwide.

Alumni Relations

The UAF Alumni Association is an active part of the UAF campus. A network of more than 16,000 graduates and former students provides widespread support for UAF programs, athletics and events. The UAFAAA was established in 1986 to provide assistance to the university and its students and faculty.

Athletics and Recreation

For information on recreational activities or intramurals, call (907) 474-6814. For intercollegiate athletics information, call (907) 474-7205.

Facilities

The Student Recreation Center, completed in 1994, is the newest addition to UAF’s Student Recreation Complex (SRC). Along with the Patty Center and Ice Arena, the complex houses a variety of sports and physical activities facilities: multi-purpose areas for basketball, volleyball, badminton, tennis, calisthenics, dance, gymnastics, judo and karate; rifle and pistol range; courts for handball, racquetball and squash; an elevated 200-meter three-lane jogging track; a swimming pool; weight training and modern fitness equipment areas; an ice arena for recreational skating and hockey; a special aerobics area; and a three-story climbing wall.

A soccer and softball field is adjacent to the center and the campus has many miles of cross-country trails for running and skiing, including a lighted ski trail.

The Patty Center gymnasium is the location for all spectator events, with seating for 2,000.

Locker and shower facilities are adjacent to the swimming pool. Cubicle lockers are available for rent, on a semester basis, by all activity card holders. A limited number of full length lockers are also rented by the semester or year.

The SRC is open from 7 a.m. to 10 p.m. Monday through Saturday, and noon to 7 p.m. on Sundays, with exceptions to the schedule during holiday periods. Many areas are available for use on a drop-in basis unless an activity is scheduled in that area. Areas requiring supervising (swimming pool, rifle range, etc.) provide a consistent schedule of recreational hours.

A student's activity sticker permits access to the SRC. Children under age 18 are not allowed to use SRC facilities unless they are accompanied by a parent or legal guardian.

Intramural Sports

A wide variety of structured recreational activities—such as intramural leagues and competitions, aerobic workouts, fitness and recreation instruction—are offered to allow all students to use their leisure time to learn new lifetime skills, to play using those they already have, and to stay fit. Additionally, unstructured use of the recreational facilities through the scheduling of both traditional and non-traditional sport and activity use allows students, faculty and staff to pursue diverse fitness and recreational interests. Development and support of sport clubs is in response to student interest and resources.

Students with disabilities are encouraged to use the Student Recreation Complex and the intramural and recreational sport program. Please contact the SRC office if confronted with any barriers to participation.
Intercollegiate Athletics
The UAF Nanooks intercollegiate athletic program is a Division II member of the National Collegiate Athletic Association (NCAA), with ice hockey classified as Division I. UAF is a member of the Pacific West Conference (PWC) and the Central Collegiate Hockey Association (CCHA). The Division II sports sponsored include men’s and women’s basketball, cross-country running, cross-country skiing, co-ed rifle and women’s volleyball.

To be eligible to participate in intercollegiate athletics:
If you are an entering freshman, you must:
1. Be certified through the NCAA Clearinghouse. For more information, see your high school counselor or call the UAF athletic department at (907) 474-7205.
2. Be admitted to UAF in good academic standing;
3. Provide transcripts for any college courses taken.
If you are a transferring student you must:
1. Provide high school graduation records including SAT or ACT scores;
2. Provide transcripts or other official records of previous college experience(s); and
3. Meet all UAF and NCAA regulations relating to transferring credits and eligibility.

As a UAF student/athlete, to remain eligible for participation you must have:
1. Earned 24 credit hours each year while at UAF;
2. Earned at least a 2.0 GPA during the preceding semester while at UAF;
3. Earned at least an accumulative 2.0 GPA while at UAF; and
4. Declared a major at the beginning of the third academic year.

It is the responsibility of each student/athlete to fulfill the academic requirements of the University of Alaska Fairbanks and the National Collegiate Athletic Association. These requirements may vary depending on the sport being considered. The coach of that sport or the intercollegiate athletics department will assist you.

Continuing Education
UAF’s Tanana Valley Campus, a component of the College of Rural Alaska, responds to individual and community needs for innovative training and high-quality continuing education programs. Academic short courses and non-credit workshops are designed to meet the needs of practitioners in the trades or professions. TVC provides in-service training for teachers, supervisory skill seminars for local businesses and agencies, and general programs for cultural enrichment.

The Tanana Valley Campus, in conjunction with other UAF colleges and schools, provides academic courses during evening hours and on weekends on the Fairbanks campus and at its off-campus locations. The alternative course schedules and delivery modes are designed to increase access for working adults and other students whose work, community, or family commitments preclude their participation in resident, semester-based programs. Some courses are enhanced through television instruction or computer programs to permit students to progress at their own pace. Night and weekend courses are offered to allow the student working toward a Bachelor of Business Administration degree in UAF’s School of Management or to fulfill general university requirements for the Bachelor of Arts degree. TVC also serves the non-degree seeking student with evening courses for general interest.

For information, contact the Tanana Valley Campus at the UAF Downtown Center, (907) 451-7223 or 451-1985 (TTY and voice).

Exchange Programs in the U.S. and Abroad
National Student Exchange
UAF is one of 115 public colleges and universities throughout the United States and its territories with membership in the National Student Exchange (NSE). Through this program, qualified students at member institutions may apply for exchange enrollment at another participating school. NSE enables students to study in different geographical areas of the country and take advantage of specialized courses on unique programs that may not be available on their home campuses. Participation in the program is limited to one year.

Exchanges take place during your sophomore or junior year. To apply, you must be a full-time student in good standing; in general, you should apply during the fall semester. Tuition is assessed by the host institution at the in-state tuition rate; however, in some situations tuition may be paid at UAF. For more information, contact the Office of Admissions and Records, (907) 474-7822.

Study Abroad Programs
Study abroad programs can broaden your view of the world while contributing academic credit toward your degree at UAF. In a study abroad experience you can master a foreign language, explore new lands and learn about other cultures. Study abroad has an important role to play in the larger process of educating citizens with global awareness, as well as preparing graduates of the university for many career opportunities that involve international affairs. We encourage students to begin planning for a study abroad experience early in their UAF careers, particularly since prior study of a foreign language is often required.

In study abroad programs students enroll at UAF and earn UAF credits while attending school abroad; thus, you may use your Alaska Student Loan and many other forms of financial aid to study abroad. Students are responsible for their transportation to the site, housing, food and incidental expenses at the host institution. UAF study abroad programs are extremely economical compared to other such programs.

Study abroad programs are administered by the UAF Office of International Programs, 202 Eielson Building, (907) 474-5327.

Hokkaido University of Education, Sapporo Campus — Hokkaido University of Education belongs to an elite group of national universities in Japan responsible for the preparation of teachers. HUE enrolls about 5,000 students on five different campuses. The program provides the opportunity to gain first-hand knowledge of the design and operation of urban and rural schools in Japan’s northern prefecture of Hokkaido. This is a one-month intensive internship, including a course of introduction to the basic tenets of Japan’s educational system, its culture, and its people. Students live with a Japanese host family. The School of Education sponsors and administers this student exchange program. For more information call (907) 474-6453.

Nagoya Gakuin University, Japan — NGU is a small, private university located on the main Japanese island of Honshu, near Nagoya, the third largest city in Japan. NGU has emphasized business education. They also offer a well-structured course of study of Japanese language and culture for foreign students. One year of Japanese is prerequisite, and two years is highly recommended. Exchange students reside in a new international students’ dormitory.

Yakutsk State University — The city of Yakutsk, capital of the Sakha Republic (Yakutia), is located on the Lena River in eastern Siberia.
Siberia. Yakutia is an autonomous republic of the Russian Federation. It has much in common with Alaska: vast undeveloped and lightly populated lands from tundra to northern forest, an economy based on natural resources, and a diversity of cultures. Russian language students will be able to practice and develop their language skills in a Russian-speaking environment and to experience both the indigenous and the Russian cultures of the area. Both semester and summer programs are available. Prior study of the Russian language and a sense of adventure are required.

Magadan University — The International Educational University at Magadan is located in the city of Magadan in the Russian Far East. Magadan is the capital city and business hub of the Magadan region. The School of Education sponsors a student exchange program in which UAF students can earn UAF credit while studying at Magadan. For more information, call (907) 474-6133.

McGill University, Canada — McGill University is an English-speaking university located in bilingual (French and English) Montreal, the largest city in the province of Quebec. Students can practice their French in the community while taking courses in English. There is no language requirement for the McGill University exchange. Students develop a plan of study to submit to the proposed host department at McGill, and work closely with a McGill faculty adviser. McGill has a particularly strong Northern Studies program. Most students rent apartments in the community.

University of the Andes - VENUSA CPSA, Venezuela — Universidad de los Andes is in Merida, a city of 300,000 on the eastern slope of the Andes in a beautiful tropical setting. They offer courses in Spanish language and the history and culture of Hispanic America, taught in Spanish, for more advanced students. Students live in the home with a Venezuelan family.

University of Guadalajara, Mexico — The Center for Foreign Student Studies of the University of Guadalajara offers a well-established program of instruction in the Spanish language and Mexican history, culture and society. Students must attend at least two six-week terms to earn full-time semester status. Guadalajara, Mexico's second largest city, is a bustling metropolis that retains touches of Mexico's colonial past. This program features home stays, with students living in the homes of Mexican host families.

University of Copenhagen, Denmark — The University of Copenhagen, founded in 1479, is a modern, comprehensive university steeped in old world tradition. University buildings are spread about one of Europe's most beautiful cities. Courses are offered at both undergraduate and graduate level the colleges of Theology, Medicine, Social Sciences, Humanities and Natural Sciences. Intensive Danish language classes are arranged in Copenhagen.

The Agricultural University of Norway — This program offers special opportunities for students interested in agriculture, natural resource management, biology, wildlife management and related fields. The Agricultural University is located in Ås, at the base of Oslo Fjord. Students will study Norwegian while at the Agricultural University.

Luleå University Sweden — Luleå University is a technical university located at the top of the Gulf of Bothnia, near the border of Finland. They offer strong programs in engineering, mining and business management, as well as a program in church music. Many courses are taught in English, so prior knowledge of Swedish is not required; students will study Swedish at Luleå.

Study in Europe — UAF belongs to NCSA (the Northwest Council on Study Abroad), a consortium of colleges and universities in the Pacific Northwest that pool their resources to provide study abroad programs in Europe at modest cost. NCSA programs offer three terms per year (September through December, January through March, and April through June); students may elect to attend successive terms at the same or different sites. A comprehensive fee of approximately $4,400 per term covers tuition, room and board with a host family, textbooks, and excursions integrated with the courses. Intensive language study is offered (except in London), as well as content courses, primarily in the social sciences and humanities, taught in English. Home stays offer a chance to practice the language, develop close personal ties and experience the everyday culture of the country.


Cologne, Germany — One of the great cities of the Rhineland, in western Germany, Cologne dates back to 50 B.C., when it was established as a Roman colony. The Cologne program operates for the spring term only (April through June). One semester of college German is prerequisite. Language classes are offered at several levels.

Avignon, France — Avignon is a very old city in the Provence region of southern France. Classes are taught within the walls of the old city. Students must have completed two semesters of college French. The winter term offers an intensive immersion in French, with all classes taught in French; three semesters prior study is prerequisite.

Siena, Italy — Siena is located in the Tuscany Hills, 40 miles from Florence. Language instruction is included, and no prior study of Italian is required. Content courses often stress art and architecture, both of which are in abundance in and around Siena. Students share apartments with American and Italian students.

Western Undergraduate Exchange

UAF participates in the Western Undergraduate Exchange (WUE) administered by the Western Interstate Commission for Higher Education (WICHE). Residents of Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah and Wyoming may enroll in designated degree programs at a reduced tuition rate (the in-state tuition plus 50 percent of that amount). For a complete list of applicable degree programs or more information, contact the UAF Admissions Counseling, Office of Admissions and Records, 102 Signers' Hall, (907) 474-7822.

Honor Societies

The following honor societies are active at UAF:

- Alpha Phi Sigma (for criminal justice students)
- Gamma Theta Upsilon (for geography students)
- Psi Chi (for psychology students)
- Phi Kappa Phi (national honor society for students in all fields of study)
- Sigma Xi (for science students)
- Tau Beta Pi (for engineering students)

Honors Program

The Honors Program at UAF provides superior undergraduate students with intellectual opportunities beyond the scope generally found in the lecture halls of a university. These opportunities include smaller classes, direct contact with top faculty members and greater curriculum flexibility which allows students to strike out on their own in intellectual pursuits.

The Honors Program is based on the conviction that genuine excellence in college-level studies means broad competence in areas outside a student's major field of specialization as well as excellence within it.

Eligibility

Undergraduate students from all disciplines are eligible for admission to the Honors Program. To qualify, new freshmen must
have attained a high school grade point average of no less than 3.60, a composite ACT score of no less than 28. Sophomores applying to the program must have a cumulative college GPA of 3.50 and clear admission to UAF.

Admission to the Honors Program is generally in the fall semester, with applications on file by April 1 of the year applying. Late applications will be considered on a space available basis. A limited number of students may be accepted at mid-year. Credentials for admission to the university must be filed separately and should be forwarded to the Office of Admissions and Records at the time of application to the Honors Program.

Program Features
Students in the program must be regularly enrolled full-time undergraduate students. In order to graduate with the designation of “Graduation with University Honors,” students must complete 27 credits of Honors work plus a senior Honors thesis.

Honors courses are offered in all disciplines and include courses specifically designed for the Honors Program as well as special enrichment sections of standard university courses. The Honors Program also offers opportunities for students to do individualized study in their majors.

A typical semester’s offering in the Honors Program would include three sciences, a mathematics course, English composition, one or more courses from the core Perspectives on the Human Condition, and four or more courses from speech, business, humanities, and social science.

A summer honors reading course is offered each year.

For more information and application forms, contact: The Honors Program, Box 750120, University of Alaska Fairbanks, Fairbanks, Alaska 99775, or call the Honors House, 515 Copper Lane, (907) 474-6612.

Library
The Elmer E. Rasmuson Library is the largest in the state, with more than 1.75 million volumes. Highly qualified and innovative library faculty and staff, together with computer and telecommunication links, help students access information whether in the UAF collections or found through the expanding web of international information resources.

The library also provides extensive reference and instructional services to students. The library information and research course, LS 101, is part of the core curriculum and teaches research methods and how to find and use information in a variety of disciplines.

Electronic catalogs give access to the Rasmuson book collections, as well as to some 5.5 million titles held at our sister University of Alaska systemwide institutions, as well as to libraries in the Pacific Northwest and nationwide. The computer network also provides periodical and newspaper indexes, a government documents index, an electronic encyclopedia and a statistical index. Document delivery and interlibrary loan services allow UAF students to borrow, at no charge, materials owned by other libraries.

Databases cover resources for the humanities, the social sciences, education, management, engineering and the sciences, with special attention to arctic and polar regions information. The electronic indexes provide more than 26 million citations.

This network is available at terminals in the library, through the university computer network and through dial-up access. SLED, the Statewide Library Electronic Doorway, gives students access to Internet resources.

Special collections include world-class Alaska and Polar Regions Collections, covering books, periodicals, archives, manuscripts, historical photographs, oral histories and maps. The Rasmuson Library is also a federal documents depository, receiving 65 percent of the materials published by the U.S. Government Printing Office.

The Fairbanks node of the University of Alaska Computer Network (UACN) is located in the library. A variety of personal computers and software is available for use by students, as well as typewriters and calculators. A study area is open 23 hours a day year round.

The Bio-Sciences Library is located in the Arctic Health Research Building on the West Ridge, is a branch of the Rasmuson Library. Collections in the Bio-Sciences Library number approximately 76,000 volumes, the majority of which are periodicals.

For further information, contact the Rasmuson Library director's office at (907) 474-7224 or 474-6744 (TTY).

Museum
While some 140,000 people visit the University of Alaska Museum each year, the museum is more than a place to look at interesting objects. The museum is also a campus resource and research center, and the staff conducts field work, teaches university courses and publishes reports.

Resources at the museum include the aquatic, archaeological, art, ethnographic, geology, herbarium, mammal and ornithology collections, the Alaska Native Heritage Film Center and the Alaska Quaternary Center.

Objects from the collections are used for research, and demonstration and comparative studies in classrooms and laboratories. For more information, contact the University of Alaska Museum, (907) 474-7505.

Student Support Services Project
The Student Support Services Project is a federally funded program. Housed within the Cross Cultural Communications Program, its goal is to retain and graduate students who meet eligibility guidelines. The project strives to serve the special academic needs of students through a variety of services. Academic support is provided through credit and non-credit courses in math, English, study skills and a science survey course, as well as free tutoring in general subject areas. Personal support is offered with an emphasis on a cross-cultural perspective.

The project works closely with Alaska Native programs on campus, assisting students in achieving their goals and making the most of their opportunities at college.

For more information, and to determine eligibility, contact the Student Support Services Project, 508 Gruening Building, (907) 474-6887.

Summer Sessions
A wide variety of academic opportunities are offered to residents and visitors during the summer. Courses are open to undergraduate and graduate students seeking degrees as well as to non-degree students with special interests. Students may choose from teacher training and enhancement courses, cross-cultural and arctic studies, intensive foreign language courses, and field experiences in areas such as archaeology, biology, geology and marine science. Additionally, basic degree requirements and courses heavily enrolled in during the fall and spring semesters are often available.

Summer Sessions faculty include members of the regular teaching staff, supplemented by outstanding visiting instructors. For more information contact Summer Sessions, 2nd floor Signers’ Hall, (907) 474-7021.
Graduate School

Programs of Study
As a comprehensive land-, sea- and space-grant institution, UAF offers graduate degrees in a wide range of academic disciplines. UAF is an exceptional institution in areas related to our unique location. The expertise of UAF scientists and scholars is anchored along the northern edge of the Pacific Rim and extends around the circumpolar north. UAF maintains a standing among the top 100 universities in the country in terms of total expenditures for research.

UAF is the only doctoral-granting institution in the state, and doctoral programs are offered in the areas of anthropology, atmospheric sciences, biochemistry/molecular biology, biological sciences (options in botany, wildlife biology and zoology), fisheries, geology, geophysics, mathematics, oceanography, physics and space physics. Master’s degrees are offered in over 50 fields: in the humanities, social sciences, northern studies, computer science, physical and natural sciences, and in professional fields such as engineering, education, and business administration. Interdisciplinary programs are possible for students who have a research focus in areas in which UAF has faculty expertise and research facilities. See the list of graduate degrees on the following page, and consult the UAF Graduate Catalog for details on graduate degree programs.

Financial Aid
Teaching and research assistantships of $7,980 to $9,500 for the school year are available through departments. Full tuition is waived for full-time graduate assistants. The Financial Aid office oversees student loans and work-study programs, and the University of Alaska Foundation administers scholarship programs. The application deadline for financial aid is February 15 for the fall semester, and many departments make assistantship decisions early in the spring. For deadline dates and required application information, contact the department or program in which you are interested.

Cost of Living
Campus housing available to graduate students includes residence hall accommodations ($900 to $1,150 per semester) and family housing apartments ($410 to $680 per month). There is limited availability of on-campus housing, so please apply as early as possible. The cost of living in the Fairbanks area is generally higher than the national average.

Student Group
There are about 800 graduate students at UAF. Forty-one percent of the graduate students at UAF are women, and about 53 percent attend part time. Graduate students from 35 states and more than 28 foreign countries are enrolled.

Admission to Graduate Study
Admission to graduate degree programs is open to people holding bachelor’s degrees from accredited institutions who have at least 3.0(B) averages in their majors and the majors are deemed suitable for continuation of studies in the applicant's fields of choice. Equivalent accomplishments at a foreign university may be substituted. For the purposes of admission to graduate study, all grades, including those generated from retaking a course, are included in calculating the grade point average.

Scores from the Graduate Record Examination (GRE) are required for all applicants to graduate programs at UAF except for the M.B.A. program in which the GMAT is required. All applicants must submit (or arrange to have sent) to the Office of Admissions and Records: graduate application for admission, cover letter indicating area of interest, nonrefundable $35 application fee, three letters of reference, official transcripts from each college or university attended, and official test scores. Interdisciplinary applicants should contact the Graduate School office for information on application requirements.

Students should apply for graduate admission at least six to nine months before the beginning of the semester in which they plan to enroll. Applications for housing may not be made until after the student has been accepted to a degree program.

Qualified applicants can be accepted for admission while enrolled in their last semester of college. However, the acceptance may be conditional upon receipt of official transcripts indicating satisfactory completion of the work in progress at the time of acceptance and completion of graduation requirements. Final acceptance to the university for the purpose of earning scholastic credit becomes complete only when all credentials have been received and accepted by the dean of the Graduate School.

Permission to enroll in graduate courses does not imply admission to graduate study. A student may not presume that such course work will necessarily be applicable to a graduate program.

Specialized Programs
The Western Interstate Commission for Higher Education (WICHE) has selected UAF arctic, circumpolar and cold regions studies as part of the unique or specialized graduate programs it coordinates in the western states as the Western Regional Graduate Programs. Residents of Arizona, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington and Wyoming, who major in one of these programs, pay resident tuition at UAF. The programs included are: atmospheric sciences, biology, botany, fisheries, marine biology, mining engineering, natural resources management, oceanography, space physics, wildlife management and zoology.

Correspondence and Information
For general information:
Graduate School (907) 474-7464
305 Signers’ Hall
P.O. Box 757560
University of Alaska Fairbanks
Fairbanks, AK 99775-7560
## Graduate Degree Programs

<table>
<thead>
<tr>
<th>Graduate Program</th>
<th>Degree(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>M.A., Ph.D.</td>
</tr>
<tr>
<td>Arctic Engineering</td>
<td>M.S.</td>
</tr>
<tr>
<td>Atmospheric Science</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Behavioral Modification</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Botany</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Business Administration</td>
<td>M.B.A.</td>
</tr>
<tr>
<td>Chemistry</td>
<td>M.A., M.S.</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>M.C.E., M.S., Ph.D.**</td>
</tr>
<tr>
<td>Climatology</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Clinical Psychology</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Coastal Engineering</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Community Psychology</td>
<td>M.A.</td>
</tr>
<tr>
<td>Computer Science</td>
<td>M.S.</td>
</tr>
<tr>
<td>Creative Writing</td>
<td>M.F.A.</td>
</tr>
<tr>
<td>Education</td>
<td>Ed.S., M.Ed., Ph.D.**</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>M.E.E., M.S., Ph.D.**</td>
</tr>
<tr>
<td>Engineering Management</td>
<td>M.S.</td>
</tr>
<tr>
<td>English</td>
<td>M.A.</td>
</tr>
<tr>
<td>Environmental Chemistry</td>
<td>M.S., Ph.D.**</td>
</tr>
<tr>
<td>Environmental Hydrology</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Environmental Policy and Management</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Environmental Quality Engineering</td>
<td>M.S., Ph.D.**</td>
</tr>
<tr>
<td>Environmental Quality Science</td>
<td>M.S., Ph.D.**</td>
</tr>
<tr>
<td>Fisheries</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Forest Ecology</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Geological Engineering</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Geology</td>
<td>M.A.T., M.S., Ph.D.</td>
</tr>
<tr>
<td>Geophysics</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Guidance and Counseling</td>
<td>M.Ed.</td>
</tr>
<tr>
<td>Human Nutrition</td>
<td>M.S., Ph.D.**</td>
</tr>
<tr>
<td>Hydrology</td>
<td>M.S., Ph.D.**</td>
</tr>
<tr>
<td>Marine Biology</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Mathematical Engineering</td>
<td>M.S., Ph.D.**</td>
</tr>
<tr>
<td>Mathematics</td>
<td>M.A.T., M.S., Ph.D.</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>M.S., Ph.D.**</td>
</tr>
<tr>
<td>Mineral Preparation Engineering</td>
<td>M.S.</td>
</tr>
<tr>
<td>Mining Engineering</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Mining Reclamation</td>
<td>M.S.**</td>
</tr>
<tr>
<td>Molecular Genetics</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Music</td>
<td>M.A.</td>
</tr>
<tr>
<td>Natural Resources Management</td>
<td>M.S.</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Northern Studies</td>
<td>M.A.</td>
</tr>
<tr>
<td>Oceanography</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Outdoor Recreation</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Petroleum Engineering</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Physics</td>
<td>M.A.T., M.S., Ph.D.</td>
</tr>
<tr>
<td>Professional Communications</td>
<td>M.A.</td>
</tr>
<tr>
<td>Psychology</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Quaternary Science</td>
<td>M.S.**</td>
</tr>
<tr>
<td>Recreation Management</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Resource Economics</td>
<td>M.S.</td>
</tr>
<tr>
<td>Science Education</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Science Management</td>
<td>M.S.</td>
</tr>
<tr>
<td>Soil Microbiology</td>
<td>M.S.**</td>
</tr>
<tr>
<td>Space Physics</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Statistical Quality Control</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Water Research Engineering</td>
<td>Ph.D.**</td>
</tr>
<tr>
<td>Wildlife Biology</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Zoology</td>
<td>M.S., Ph.D.</td>
</tr>
</tbody>
</table>

** Interdisciplinary Degree

---

The National Sciences Facility, which is scheduled to open in fall 1995, will house the departments of chemistry, physics and geology.
Research

The research programs at UAF take advantage of the university's unique location in the subarctic of interior Alaska, with easy access to the Pacific Ocean, the Arctic Ocean, glaciers and permafrost areas. In addition to research carried out in its academic departments, the university has a number of research centers that focus upon problems of the Arctic. These include the environmental impact of human activities, the development of renewable and non-renewable resources, energy sources and the cultural understanding and preservation of peoples of the North.

While most student research is provided by graduate students, UAF does provide opportunities for some undergraduate students to participate in basic and applied research. Several departments have summer undergraduate research programs. Contact the Chemistry Department and the Physics Department for information.

UAF's researchers are among the best. To cite but a few recent accomplishments:

- Institute of Arctic Biology scientists discovered "supercooling" in arctic ground squirrels. Understanding the mechanisms the animals use to hibernate at below freezing body-temperature could have a major impact on the practice of human medicine.
- A UAF agricultural researcher has isolated and tested a natural agent to help fight plant disease without chemicals.
- Geophysical Institute faculty and staff developed computer models and visualization techniques to produce 3-D images of volcanic plumes to help pilots approaching Anchorage International Airport to steer clear of airborne ash.
- UAF researchers have developed rapid and inexpensive methods to use microorganisms for monitoring water quality of southcentral Alaskan streams.
- Agricultural and Forestry Experiment Station faculty have a leadership role in the Long-Term Ecological Research (LTER) program funded by the National Science Foundation. The Bonanza Creek Experimental Forest, near Fairbanks, is the principal LTER field research site for work in the northern boreal forest of North America. Results from this work are determining the structure and function of these forest ecosystems which are the basis for sustainable forest management practices.
- Glaciologists from the Geophysical Institute discovered and measured the deepest glacier-filled gorge in North America and perhaps the world, near Mt. McKinley.
- Geophysical Institute faculty discovered a new phenomenon called a "sprite," an upward discharge from the top of thunderclouds to the ionosphere.
- UAF's Mineral Industry Research Laboratory is investigating a process that has the potential to reduce the cost of recovering minerals from Alaskan ores.

Institutes, Stations and Centers

Agricultural and Forestry Experiment Station
AFES research increases the efficiency of production of food and wood products, and helps Alaska develop, sustain or protect its natural resources to meet human needs and values.

Alaska Cooperative Fish and Wildlife Research Units
Emphasis of the fishery unit is on the ecology and fisheries of aquatic ecosystems. The wildlife unit focuses on seabird ecology, wildlife population dynamics and the environmental impact of human activity.

Alaska Native Language Center
The center documents and promotes the use of the Indian and Eskimo languages of Alaska.

Center for Cross-Cultural Studies
This center undertakes research to develop the human resources of Alaska's multicultural society.

Fishery Industrial Technology Center
Located in Kodiak, the center lends scientific and technical expertise to the harvesting, processing and marketing efforts of the fishing industry.

Geophysical Institute
GI research focuses on high-latitude geophysical phenomena in space physics, aeronomy, atmospheric sciences, solid earth research and satellite remote sensing.

Institute of Arctic Biology
IAB studies focus on arctic ecosystems and the adaptation of plants, animals and humans to past and present climates.

Institute of Marine Science
IMS has research programs in biological, chemical, fisheries, geological and physical oceanography.

Institute of Northern Engineering
INE focuses on solving the unique engineering and water-related problems in Alaska and other northern regions.

Juneau Center, School of Fisheries and Ocean Sciences
The center focuses on research on the life history, pathology and management of marine fish and invertebrates.

Mineral Industry Research Laboratory
MIRL conducts basic and applied research to aid in the development of Alaska's mineral and energy resources.

Petroleum Development Laboratory
PDL works to develop technology to maximize the recovery of Alaska's petroleum and natural gas resources.

University of Alaska Museum
The major objective of the museum is the continuing development of systematic collections that are available for research and educational purposes.
UAF's academic units offer degrees in more than 70 fields of study with a host of options within many of the degree programs, as well as a wide range of technical/vocational programs.

UAF offers certificate, associate and baccalaureate and master's degree programs in the arts, sciences and professions, as well as selected doctoral programs in areas of particular strength, such as the sciences and mathematics. The following is a list of UAF's colleges and schools and their undergraduate offerings.

**Agriculture and Land Resources Management, School of**

James V. Drew, Dean

Graduates of the School of Agriculture and Land Resources Management use their academic training to facilitate the wise management of Alaska's land-based renewable resources. The undergraduate programs at the school lead to a Bachelor of Science degree in natural resources management with options in: plant, animal and soil sciences; and forestry. Research is conducted through the Agricultural and Forestry Experiment Station, with facilities in Fairbanks and Palmer, and through the Forest Soils Laboratory in Fairbanks. SALRM's courses and programs were developed in close cooperation with many university units, local, state and federal agencies and private industry. Through these cooperative arrangements, students are provided with opportunities for field work and/or internships in the management degree options listed above, as well as in the areas of outdoor recreation, water resources management, park and wilderness management, geographic information systems and research planning and administration.

**Education, School of**

College of Liberal Arts
Pamela J. Keating, Director

The School of Education in the College of Liberal Arts offers both undergraduate and graduate courses culminating in three degrees: Bachelor of Education, Master of Education and Education Specialist, as well as teacher certification. In addition, an M.Ed. degree program in guidance and counseling prepares educators to be elementary and secondary school counselors. Students applying for the guidance and counseling program choose either to study for an endorsement of the Type A teaching certificate or Type C certification. The UAF School of Education is accredited by the National Council of Accreditation (NCATE) and is approved by the Alaska Department of Education to recommend its graduates for Alaska certification as elementary teachers, secondary teachers, school counselors and school administrators. One-third of the faculty hold their academic appointments on UAF's rural campuses and courses are available on-site and by distance delivery in Nome, Kotzebue, Bethel, Dillingham and in the Interior, as well as on the Fairbanks campus, in keeping with the school's commitment to preparing educators for rural Alaska. Faculty research in language and literature, cross-cultural communication, small and rural schools, curriculum and instruction, and subject area studies support the school's academic programs.

**Engineering, School of**

Frank Williams, Dean

The School of Engineering offers courses of study leading to the Bachelor of Science degree in civil, electrical or mechanical engineering. The three undergraduate SOE programs are nationally accredited, and because of this accreditation and program emphasis on northern engineering problems and principles, engineering graduates are in demand within and outside the state of Alaska. Building upon required course work in mathematics, chemistry and physics, engineering majors study engineering principles and select an area of specialization and develop skills in creative design and analysis through simulated projects. Computers, from sophisticated PCs to extensive mainframes, are an integral part of the UAF engineering program.

**Fisheries and Ocean Sciences, School of**

Vera Alexander, Dean

The School of Fisheries and Ocean Sciences offers the Bachelor of Science degree in fisheries through the Division of Fisheries. Graduate degrees including the M.S. and Ph.D. are offered in various marine and fisheries areas. Created in 1987, the school is responsible for coordinating the university's statewide programs in marine education, research, technology and extension relating to Alaska's vast fisheries and marine environment. Undergraduate majors in the school are well-prepared for graduate study or to enter management, law enforcement and/or public information-education fields related to fisheries and often are able to find summer field work opportunities during their undergraduate studies through cooperating state and federal agencies. The school operates coastal facilities at Juneau, Kodiak, Seward and Kasitsna Bay and also the 133-foot National Science Foundation oceanographic vessel R/V Alpha Helix for seagoing research and education.

**Liberal Arts, College of**

Gorden Hedahl, Dean

The College of Liberal Arts provides a broad liberal arts education to UAF students whatever their specialization. Its courses also emphasize writing, oral communication and mathematics skills, and foster an appreciation for the arts through active programs in visual art, music, theater and Alaska Native arts. The College of Liberal Arts provides a variety of courses to satisfy core curriculum requirements for students, and aims to increase its international reputation in northern studies. In addition, it offers courses in Russian and Japanese studies in response to increased demand recognizing Alaska's present and future business relations with the Asian Pacific Rim. The college sponsors the Alaska Living History series and the Alaska Native Elders Program, which bring men and women to the campus who have helped shape the state of Alaska. The college is organized into six divisions, which include: 1) the School of Education; 2) Arts and Communication, with departments of Art, Communication, Journalism/Broadcasting, Music and Theater; 3) Humanities, with departments of English, Philosophy and Humanities; 4) Languages and
Cultures, with departments of Anthropology, Alaska Native Studies and Languages, Foreign Languages and Literatures, Geography and Linguistics; 5) Mathematical Sciences; and 6) Social Sciences, with departments of History, Justice, Military Science, Northern Studies, Political Science, Psychology, Social Work and Sociology. The College of Liberal Arts also includes the Alaska Native Language Center, Elderhostel, KUAC, Library Sciences, the Rural Alaska Honors Institute and the UAF Honors Program.

Management, School of
David O. Porter, Dean
School of Management undergraduate programs in economics, accounting and business administration provide the foundation for professional careers in private and public organizations of all sizes. The school's objective is to prepare literate, articulate and broadly educated business generalists with special knowledge about Alaska, the Pacific Rim and the circumpolar North. The Bachelor of Business Administration and the Master of Business Administration degree programs are nationally accredited and place UAF among 112 of more than 2,000 business education programs in the U.S. with similar accreditation. All of the degree programs include problems and circumstances appropriate to Alaska, including entrepreneurship, human resource management, international business, regional economic development, regulation, financial institutions and markets, transportation, natural resource economics, travel industry management and a comprehensive professional program in accounting.

Mineral Engineering, School of
Robert H. Trent, Dean
The emergence and progress of human society is marked by passage from one metal age to another. The keystone to our present economy is measured in minerals and energy and it would be difficult to conceive of a modern life without them. Within the career fields of minerals and energy, the opportunities are limited only by a person's ability to apply engineering principles in new and imaginative ways.

The School of Mineral Engineering is composed of the Department of Mining and Geological Engineering, the Department of Petroleum Engineering, the Mineral Industry Research Laboratory and the Petroleum Development Laboratory.

Natural Sciences, College of
Paul Reichardt, Dean
Students in the College of Natural Sciences have one of the most exciting natural laboratories in which to learn. CNS has undergraduate programs in biology, geology, chemistry, physics and wildlife management, all of which offer research opportunities. The college also offers two interdisciplinary programs, in earth sciences and
general sciences, intended especially for those seeking teaching certificates. The College of Natural Sciences also provides students with a variety of courses to satisfy science requirements for graduation. The research institutes associated with the college—the Geophysical Institute, the Institute of Arctic Biology and the Alaska Cooperative Wildlife Research Unit—are nationally and internationally recognized. CNS includes the departments of biology and wildlife, chemistry, geology and geophysics, and physics. In addition, the University of Alaska Museum is an integral part of the college, providing instructional, research and public service opportunities for students, faculty and the general public.

Rural Alaska, College of
Ralph Gabrielli, Acting Executive Dean
The College of Rural Alaska is committed to education through which all Alaskans, particularly Alaska Natives and rural residents, may make social and economic changes in their communities while protecting and enriching the quality of their lives and cultures. Particular consideration is given to the needs of permanent residents and students in non-traditional settings who seek skills and degrees suited to the rural economy and the well being of rural communities. The college offers a wide range of academic and programmatic options which respond to the changing conditions of Alaska. Short-term courses, workshops, vocational/technical and in-service training, developmental studies, credit for prior learning and other non-degree-oriented services provide community and continuing education. CRA provides general education at the certificate and associate degree levels, as well as vocational/technical training and developmental courses. The college offers degrees in rural development and, in cooperation with the College of Liberal Arts, education and social work. The college geographically serves nearly two-thirds of the state, representing more than 160 primarily Native Alaska communities in the arctic, subarctic and coastal environments. Included are more than 16 indigenous language groups and an economic base which spans subsistence hunting and fishing, small-scale village development and cooperatives and large-scale international corporate development. Extended campuses include Northwest (Nome), Kuskokwim (Bethel), Bristol Bay (Dillingham) and Chukchi (Kotzebue). Also included is the Interior Campus which is headquartered in Fairbanks and which administers a number of education centers throughout the Interior and the Aleutians. Also, in downtown Fairbanks, the Tanana Valley Campus provides developmental and general education and is a center for vocational and technical education as well. The college is a center for the support and development of distance delivery of education and field-based degree and non-degree course work throughout the university.
### Degrees and Programs

<table>
<thead>
<tr>
<th>Cert.</th>
<th>Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.A.</td>
<td>Associate of Arts</td>
</tr>
<tr>
<td>A.A.S.</td>
<td>Associate of Applied Science</td>
</tr>
<tr>
<td>B.A.</td>
<td>Bachelor of Arts</td>
</tr>
<tr>
<td>B.B.A.</td>
<td>Bachelor of Business Administration</td>
</tr>
<tr>
<td>B.Ed.</td>
<td>Bachelor of Education</td>
</tr>
<tr>
<td>B.F.A.</td>
<td>Bachelor of Fine Arts</td>
</tr>
<tr>
<td>B.M.</td>
<td>Bachelor of Music</td>
</tr>
<tr>
<td>B.S.</td>
<td>Bachelor of Science</td>
</tr>
<tr>
<td>B.T.</td>
<td>Bachelor of Technology</td>
</tr>
<tr>
<td>E.M.</td>
<td>Engineer of Mines</td>
</tr>
<tr>
<td>M.A.</td>
<td>Master of Arts</td>
</tr>
<tr>
<td>M.F.A.</td>
<td>Master of Fine Arts</td>
</tr>
<tr>
<td>M.S.</td>
<td>Master of Science</td>
</tr>
<tr>
<td>M.A.T.</td>
<td>Master of Arts in Teaching</td>
</tr>
<tr>
<td>M.B.A.</td>
<td>Master of Business Administration</td>
</tr>
<tr>
<td>M.C.E.</td>
<td>Master of Civil Engineering</td>
</tr>
<tr>
<td>M.Ed.</td>
<td>Master of Education</td>
</tr>
<tr>
<td>M.E.E.</td>
<td>Master of Electrical Engineering</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Doctor of Philosophy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accounting, B.B.A.</th>
<th>(see also Applied Accounting)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airframe and Powerplant, Cert., A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Alaska Native Languages (minor only)</td>
<td></td>
</tr>
<tr>
<td>Alaska Native Studies, B.A.</td>
<td></td>
</tr>
<tr>
<td>Anthropology, B.A., B.S., M.A., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Applied Accounting, A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Applied Physics, B.S.</td>
<td></td>
</tr>
<tr>
<td>Applied Business, A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Arctic Engineering, M.S.</td>
<td></td>
</tr>
<tr>
<td>Art, B.A., B.F.A.</td>
<td></td>
</tr>
<tr>
<td>Asian Studies (minor only)</td>
<td></td>
</tr>
<tr>
<td>Associate of Arts, A.A.</td>
<td></td>
</tr>
<tr>
<td>Athletic Coaching (minor only)</td>
<td></td>
</tr>
<tr>
<td>Atmospheric Sciences, M.S., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Aviation Technology, A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Biochemistry and Molecular Biology, B.S., M.S., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Biological Sciences, B.A., B.S.</td>
<td></td>
</tr>
<tr>
<td>Biology, M.S., M.A.T., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Botany, M.S., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Business Administration, B.B.A.</td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td></td>
</tr>
<tr>
<td>Human Resource Management</td>
<td></td>
</tr>
<tr>
<td>International Business Management</td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
</tr>
<tr>
<td>Travel Industry Management</td>
<td></td>
</tr>
<tr>
<td>Business Administration, M.B.A.</td>
<td></td>
</tr>
<tr>
<td>Chemistry, B.A., B.S., M.A., M.S.</td>
<td></td>
</tr>
<tr>
<td>Civil Engineering, B.S., M.C.E., M.S.</td>
<td></td>
</tr>
<tr>
<td>Communication, B.A.</td>
<td></td>
</tr>
<tr>
<td>Community Health, Cert., A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Community Psychology, M.A.</td>
<td></td>
</tr>
<tr>
<td>Computer Information Systems (minor only)</td>
<td></td>
</tr>
<tr>
<td>Computer Science, B.S., M.S.</td>
<td></td>
</tr>
<tr>
<td>Creative Writing, M.F.A.</td>
<td></td>
</tr>
<tr>
<td>Culinary Arts, Cert., A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Dentistry (Pre-Professional)</td>
<td></td>
</tr>
<tr>
<td>Diesel/Heavy Equipment Mechanics, Cert.</td>
<td></td>
</tr>
<tr>
<td>Drafting Technology, Cert.</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Development, Cert., A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Education, A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Earth Science, B.A.</td>
<td></td>
</tr>
<tr>
<td>Economics, B.A., B.B.A.</td>
<td></td>
</tr>
<tr>
<td>Education, Elementary, B.Ed.</td>
<td></td>
</tr>
<tr>
<td>Education, M.Ed.</td>
<td></td>
</tr>
<tr>
<td>Cross-Cultural</td>
<td></td>
</tr>
<tr>
<td>Curriculum and Instruction</td>
<td></td>
</tr>
<tr>
<td>Distance Education</td>
<td></td>
</tr>
<tr>
<td>Educational Leadership (Type B Cert.)</td>
<td></td>
</tr>
<tr>
<td>Language and Literacy</td>
<td></td>
</tr>
<tr>
<td>Leadership Development</td>
<td></td>
</tr>
<tr>
<td>Education, Ed.S.</td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering, B.S., M.E.E., M.S.</td>
<td></td>
</tr>
<tr>
<td>Engineering Management, M.S.</td>
<td></td>
</tr>
<tr>
<td>English, B.A.</td>
<td></td>
</tr>
<tr>
<td>Forms and Techniques of Writing</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td></td>
</tr>
<tr>
<td>English, M.A.</td>
<td></td>
</tr>
<tr>
<td>Environmental Quality Engineering, M.S.</td>
<td></td>
</tr>
<tr>
<td>Environmental Quality Science, M.S.</td>
<td></td>
</tr>
<tr>
<td>Eskimo, B.A.</td>
<td></td>
</tr>
<tr>
<td>Inupiaq Eskimo</td>
<td></td>
</tr>
<tr>
<td>Yup'ik Eskimo</td>
<td></td>
</tr>
<tr>
<td>Exercise Science, B.S.</td>
<td></td>
</tr>
<tr>
<td>Film Studies (minor only)</td>
<td></td>
</tr>
<tr>
<td>Fire Science, Cert., A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Fisheries, B.S.</td>
<td></td>
</tr>
<tr>
<td>Research Management</td>
<td></td>
</tr>
<tr>
<td>Fisheries, M.S., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Food Science and Nutrition (Cooperative)</td>
<td></td>
</tr>
<tr>
<td>Foreign Languages, B.A.</td>
<td></td>
</tr>
<tr>
<td>French</td>
<td></td>
</tr>
<tr>
<td>German</td>
<td></td>
</tr>
<tr>
<td>Russian</td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td></td>
</tr>
<tr>
<td>Forestry (Cooperative)</td>
<td></td>
</tr>
<tr>
<td>General Science, B.S., B.S.</td>
<td></td>
</tr>
<tr>
<td>Geography, B.A., B.S.</td>
<td></td>
</tr>
<tr>
<td>Geological Engineering, B.S., M.S.</td>
<td></td>
</tr>
<tr>
<td>Geology, B.S.</td>
<td></td>
</tr>
<tr>
<td>Economic Geology</td>
<td></td>
</tr>
<tr>
<td>General Geology</td>
<td></td>
</tr>
<tr>
<td>Petroleum Geology</td>
<td></td>
</tr>
<tr>
<td>Solid Earth Geophysics</td>
<td></td>
</tr>
<tr>
<td>Geology, M.A.T., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Geology, M.S.</td>
<td></td>
</tr>
<tr>
<td>Economic Geology</td>
<td></td>
</tr>
<tr>
<td>General Geology</td>
<td></td>
</tr>
<tr>
<td>Petroleum Geology</td>
<td></td>
</tr>
<tr>
<td>Geophysics, M.S.</td>
<td></td>
</tr>
<tr>
<td>Snow, Ice and Permafrost Geophysics</td>
<td></td>
</tr>
<tr>
<td>Solid Earth Geophysics Geophysics, Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Guidance and Counseling, M.Ed.</td>
<td></td>
</tr>
<tr>
<td>Elementary Secondary</td>
<td></td>
</tr>
<tr>
<td>History, B.A.</td>
<td></td>
</tr>
<tr>
<td>Human Services, B.A.</td>
<td></td>
</tr>
<tr>
<td>Human Services Technology, A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Interdisciplinary Studies Option, A.A.S., B.A., B.S., B.T., M.A., M.S., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Japanese Studies, B.A.</td>
<td></td>
</tr>
<tr>
<td>Journalism, B.A.</td>
<td></td>
</tr>
<tr>
<td>Broadcast News-Editorial Professional Communication, M.A.</td>
<td></td>
</tr>
<tr>
<td>Justice, B.A.</td>
<td></td>
</tr>
<tr>
<td>Law (Pre-Professional)</td>
<td></td>
</tr>
<tr>
<td>Law and Society (minor only)</td>
<td></td>
</tr>
<tr>
<td>Library Science (Pre-Professional)</td>
<td></td>
</tr>
<tr>
<td>Linguistics, B.A.</td>
<td></td>
</tr>
<tr>
<td>Marine Biology, M.S.</td>
<td></td>
</tr>
<tr>
<td>Mathematics, B.A., B.S., M.S., M.A.T., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering, B.S., M.S.</td>
<td></td>
</tr>
<tr>
<td>Medical Technology (Cooperative)</td>
<td></td>
</tr>
<tr>
<td>Medicine (Pre-Professional)</td>
<td></td>
</tr>
<tr>
<td>Military Science/Army ROTC (minor only)</td>
<td></td>
</tr>
<tr>
<td>Mineral Preparation Engineering, M.S.</td>
<td></td>
</tr>
<tr>
<td>Mining Engineering, B.S., M.S., E.M.</td>
<td></td>
</tr>
<tr>
<td>Music, B.A.</td>
<td></td>
</tr>
<tr>
<td>Music, B.M.</td>
<td></td>
</tr>
<tr>
<td>Music Education Performance</td>
<td></td>
</tr>
<tr>
<td>Music, M.A.</td>
<td></td>
</tr>
<tr>
<td>Alaska Ethnomusicology</td>
<td></td>
</tr>
<tr>
<td>Music Education</td>
<td></td>
</tr>
<tr>
<td>Music History Performance</td>
<td></td>
</tr>
<tr>
<td>Theory/Composition</td>
<td></td>
</tr>
<tr>
<td>Native Language Education, Cert., A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Natural Resources Management, B.S.</td>
<td></td>
</tr>
<tr>
<td>Agriculture Forestry</td>
<td></td>
</tr>
<tr>
<td>Natural Resources Management, M.S.</td>
<td></td>
</tr>
<tr>
<td>Northern Studies, B.A., M.A.</td>
<td></td>
</tr>
<tr>
<td>Oceanography, Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Oceanography, Biological, M.S.</td>
<td></td>
</tr>
<tr>
<td>Oceanography, Chemical, M.S.</td>
<td></td>
</tr>
<tr>
<td>Oceanography, Fisheries, M.S.</td>
<td></td>
</tr>
<tr>
<td>Oceanography, Geological, M.S.</td>
<td></td>
</tr>
<tr>
<td>Oceanography, Physical, M.S.</td>
<td></td>
</tr>
<tr>
<td>Office Management and Technology, Cert., A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Paralegal Studies, A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Petroleum Engineering, B.S., M.S.</td>
<td></td>
</tr>
<tr>
<td>Philosophy, B.A.</td>
<td></td>
</tr>
<tr>
<td>Physical Education, B.A.</td>
<td></td>
</tr>
<tr>
<td>Physics, B.A., B.S., M.S., M.A.T., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Political Science, B.A.</td>
<td></td>
</tr>
<tr>
<td>Professional Communication, M.A.</td>
<td></td>
</tr>
<tr>
<td>Psychology, B.A., B.S.</td>
<td></td>
</tr>
<tr>
<td>Renewable Resources, A.A.S.</td>
<td></td>
</tr>
<tr>
<td>Resource Economics, M.S.</td>
<td></td>
</tr>
<tr>
<td>Rural Development, B.A.</td>
<td></td>
</tr>
<tr>
<td>Community Organizations and Services</td>
<td></td>
</tr>
<tr>
<td>Community Research and Cultural Documentation</td>
<td></td>
</tr>
<tr>
<td>Land/Renewable Resources</td>
<td></td>
</tr>
<tr>
<td>Local Government Administration</td>
<td></td>
</tr>
<tr>
<td>Small Business Management</td>
<td></td>
</tr>
<tr>
<td>Rural Human Services, Cert.</td>
<td></td>
</tr>
<tr>
<td>Russian Studies, B.A.</td>
<td></td>
</tr>
<tr>
<td>Science Management, M.S.</td>
<td></td>
</tr>
<tr>
<td>Social Work, B.A.</td>
<td></td>
</tr>
<tr>
<td>Sociology, B.A., B.S.</td>
<td></td>
</tr>
<tr>
<td>Space Physics, M.S., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Statistics, B.S.</td>
<td></td>
</tr>
<tr>
<td>Technology, B.T.</td>
<td></td>
</tr>
<tr>
<td>Theater, B.A.</td>
<td></td>
</tr>
<tr>
<td>Veterinary Medicine (Pre-Professional)</td>
<td></td>
</tr>
<tr>
<td>Wildlife Biology, B.S., M.S., Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Women's Studies (minor only)</td>
<td></td>
</tr>
<tr>
<td>Zoology, M.S., Ph.D.</td>
<td></td>
</tr>
</tbody>
</table>
Accounting

School of Management
Department of Accounting
and Information Systems
(907) 474-7121

Degree: B.B.A.
Minimum Requirements for Degree: 123 credits

The accounting department offers an extensive program for those interested in the field of general accounting, auditing, managerial accounting and taxation. 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. In 1997 applicants for the Certified Public Accounting Certificate in Alaska will be required to complete a 150 credit hour education program. Please see the UAF graduate catalog for information regarding UAF's Master of Business Administration degree with concentration in Accounting.

All majors must earn a "C" or better in all Common Body of Knowledge courses, department specific general requirements, major specific requirements, and specific math and statistics requirements. Admittance to 300 or 400 level School of Management courses will be granted only to students with upper division standing. Others will be admitted only with the written permission of the appropriate department head. Students enrolling in School of Management courses are expected to have completed the necessary prerequisites for each course. A $25.00 per semester student computing facility user fee will be assessed for any student taking one or more School of Management courses (ACCT, AIS, BA and ECON) . This fee is in addition to any lab/material fees. B.B.A. students must, during their first 30 hours, attain computer literacy by either testing or earning a "C" or better in a basic computer literacy course.

Requirements

Accounting — B.B.A. Degree
1. Complete general university requirements and B.B.A. degree requirements. Credits (As part of core, complete PHIL 322-323-Ethics). 52-53
2. Complete the following requirement:
   ENGL 314 — Technical Writing 3
3. Complete the Common Body of Knowledge (CBK) (31-34 credits):
   ACCT 101, 102 — Elementary Accounting 6
   AIS 101 — Effective Personal Computer Use or demonstrated computer literacy 0.3
   AIS 316 — Acct. Information Systems 3
   BA 325 — Financial Management 3
   BA 330 — Legal Environment of Business 4
   BA 343 — Principles of Marketing 3
   BA 360 — Production/Operations Management 3
   BA 390 — Organizational Theory and Behavior 3
   BA 462 — Corporate Strategy 3
   ECON 324 — Intermediate Macroeconomics or ECON 350 — Money & Banking 3
   4. Complete the following major complex requirements (18 credits):
      ACCT 303 — Governmental and Non-Profit Accounting 3
      ACCT 310 — Income Tax 3
      ACCT 342 — Managerial Cost Accounting 3
      ACCT 361, 362 — Intermediate Accounting 6
      ACCT 452 — Auditing 3
      Complete two of the following (6 credits):
      ACCT 401 — Advanced Accounting 3
      ACCT 403 — Advanced Taxes 3
      ACCT 404 — Advanced Cost Accounting and Controllship 3
      ACCT 472 — Computer Control and Adv. Auditing 3
      AIS 473 — Applied Systems Design 3
      5. Complete free electives. (At least 8 credits must be outside the School of Management with the exception of introductory computer literacy credits. None of the free electives may be additional accounting electives). 9-13
      6. Minimum credits required for degree 123

MINOR in Accounting

ACCT 101 — Elementary Accounting 3
ACCT 102 — Elementary Accounting 3
9 credits of upper division Accounting electives 9
*For a Bachelor of Arts or Bachelor of Science Degree

Airframe and Powerplant

College of Rural Alaska
Tanana Valley Campus
(907) 474-5081

Certificate: Degree: A.A.S.
Minimum Requirements for Degree: 64 credits, Certificate: 30 credits

The airframe and powerplant department offers an associate of applied science degree (A.A.S.) and three certificate programs. Students may choose to earn a certificate in airframe, powerplant, or airframe and powerplant. Admission to this program is at the discretion of the program faculty and requires an interview with the faculty advisor.

After receiving an airframe and powerplant certificate, students may elect to complete the associate of applied science degree in airframe and powerplant. In order to enhance employability, students are encouraged to complete the associate degree program.

Requirements

Airframe and Powerplant — A.A.S. Degree
1. Complete the following general university and A.A.S. requirements:
   Credits
   ENGL 111X and ENGL 211X, 212*, or 213X 6
   COMM 131X or 141X 3
   Mathematics or Natural Science:
   A math or natural science course at the 100 level or above 3
   Humanities, social sciences, mathematics, natural science or Perspective on the Human Condition 3
   2. Complete the following major degree requirements: Same as Airframe and Powerplant Certificate Program 49
   3. Degree Total Credits 64

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

Airframe and Powerplant — Certificate

The airframe and powerplant mechanics certificate program allows students to complete requirements for the Federal Aviation Administration mechanics certificate with both airframe and powerplant ratings in as little as one year. This program is a one-year course, usually starting at the end of May or beginning of June. Entry at other times is allowed only with departmental approval.

While this program covers many major subject areas, special emphasis is placed on those skills most sought after in the Alaska job market. This intensive curriculum uses classroom and "hands on" laboratory instruction to prepare students for entry into the aviation field. After completing the program, students are eligible to take the Federal Aviation Administration examinations for the airframe and powerplant ratings. This qualification program graduates for entry level positions in the maintenance, repair, overhaul and modification of aircraft. A student may request credit by examination for some AFPM classes. See the department for details.

NOTE: Most courses are scheduled between 7:40 a.m. and 4:10 p.m. Monday through Friday.

Airframe and Powerplant Certificate Program and Suggested Course Sequence

Summer Semester

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
</tr>
<tr>
<td>2.0</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>2.0</td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td>1.0</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>1.5</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>13.0</td>
</tr>
</tbody>
</table>

Fall Semester

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
</tr>
<tr>
<td>4.5</td>
</tr>
<tr>
<td>2.0</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>0.5</td>
</tr>
</tbody>
</table>

For a Bachelor of Arts or Bachelor of Science Degree
### Airframe — Certificate

Students interested in qualifying for an FAA airframe mechanics certificate may choose to earn only the airframe certificate. However, in order to enhance employability, students are encouraged to complete the associate degree program.

**Airframe Certificate and Suggested Course Sequence**

<table>
<thead>
<tr>
<th>Summer Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 145 — Basic Mathematics</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 146 — Basic Electricity</td>
<td>2.0</td>
</tr>
<tr>
<td>AFPM 147 — Physics for Mechanics</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 148 — Aircraft Drawing</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 149 — Fluid Lines and Fitting</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 150 — Materials and Processes</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 151 — Clear and Corrosion Control</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 152 — Federal Aviation Regulations</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 153 — Weight and Balance</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 154 — Aircraft Ground Operations and Servicing</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 251 — Fuel Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 255 — Aircraft Welding</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 257 — Instrument Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>13.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 254 — Ice and Rain Control Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 256 — Communication/Navigation Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 258 — Cabin Atmosphere Control Systems</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 259 — Aircraft Landing Gear Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 261 — Non-Metallic Structures</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 264 — Sheet Metal Structures</td>
<td>3.0</td>
</tr>
<tr>
<td>AFPM 265 — Aircraft Welding</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>9.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 230 — Aircraft Electrical Systems</td>
<td>2.5</td>
</tr>
<tr>
<td>AFPM 253 — Transport Category Aircraft</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 260 — Aircraft Landing Gear Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 262 — Aircraft Coverings</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 263 — Aircraft Finishes</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 266 — Assembly and Rigging</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 267 — Aircraft Inspections</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 270 — Airframe Testing</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>9.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Certificate Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31.0</td>
</tr>
</tbody>
</table>

### Powerplant — Certificate

Students interested in qualifying for an FAA powerplant mechanics certificate may choose to earn only the powerplant certificate. However, in order to enhance employability, students are encouraged to complete the associate degree program.

**Powerplant Certificate and Suggested Course Sequence**

<table>
<thead>
<tr>
<th>Summer Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 145 — Basic Mathematics</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 146 — Basic Electricity</td>
<td>2.0</td>
</tr>
<tr>
<td>AFPM 147 — Physics for Mechanics</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 148 — Aircraft Drawing</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 149 — Fluid Lines and Fitting</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 150 — Materials and Processes</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 151 — Clear and Corrosion Control</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 152 — Federal Aviation Regulations</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 153 — Weight and Balance</td>
<td>1.0</td>
</tr>
<tr>
<td>AFPM 154 — Aircraft Ground Operations and Servicing</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 251 — Fuel Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 255 — Aircraft Welding</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 257 — Instrument Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>13.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 231 — Powerplant Electrical Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 235 — Aircraft Reciprocating Engines</td>
<td>4.5</td>
</tr>
<tr>
<td>AFPM 240 — Turbine Engine Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>AFPM 250 — Powerplant Exhaust Systems</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>8.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 244 — Lubrication Systems</td>
<td>1.5</td>
</tr>
<tr>
<td>AFPM 245 — Ignition Systems</td>
<td>2.0</td>
</tr>
<tr>
<td>AFPM 246 — Fuel Metering Systems</td>
<td>2.0</td>
</tr>
<tr>
<td>AFPM 270 — Powerplant Testing</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>13.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Certificate Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31.0</td>
</tr>
</tbody>
</table>

### Evening Airframe and Powerplant Program

The evening airframe and powerplant program is a two-semester preparatory course for men and women with substantial documented experience in aircraft maintenance who wish federal certification. Admission is open to those with either civilian or military experience.

To enroll, students must receive authorization from the Federal Aviation Administration to take the airframe and powerplant mechanics oral, practical and written exams (or be eligible for it by the completion of the course). In order to qualify for this authorization, the applicant must have a minimum of 30 months or 30 months experience performing duties appropriate to both the airframe and powerplant ratings, or have 18 months experience appropriate to either the airframe or powerplant rating. Upon obtaining the FAA airframe and powerplant certificate, the student may wish to complete the associate degree in airframe and powerplant.

<table>
<thead>
<tr>
<th>Alternate Fall Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 111 — Basic Airframe and Powerplant</td>
<td>4</td>
</tr>
<tr>
<td>AFPM 205 — Fundamentals of Airframe Structures</td>
<td>5</td>
</tr>
<tr>
<td>AFPM 206 — Fundamentals of Airframe Systems and Components</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alternate Spring Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AFPM 215 — Powerplant Theory and Maintenance</td>
<td>6</td>
</tr>
<tr>
<td>AFPM 216 — Powerplant Structures and Systems</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evening Program Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

### Alaska Native Languages

**College of Liberal Arts**

**Department of Alaska Native Languages**

(907) 474-7874

**Minor only**

There are 20 different Alaska Native languages: Aleut, Atitiq (also called Aleut or Sugpiag), Central Yup'ik Eskimo, St. Lawrence Island Eskimo, Inupiaq Eskimo, Tsimshian, Haida, Tingit, Eyak, and 11 Athabaskan languages. These languages are becoming recognized as the priceless heritage they truly are. Since the passage of the Alaska Bilingual Education Law in 1972 there has been a demand for teachers who can speak and teach these languages in the schools throughout the state where there are Native children. Professional opportunities for those skilled in these languages exist in teaching, research, and cultural, educational, and political development.

Central Yup'ik Eskimo is spoken by the largest number of people, and Inupiaq by the next largest. In these two languages major and minor curricula are now offered. Courses are also regularly offered in Kutchin Athabaskan. For work...
in all other languages, individual or small-group instruction is offered under special topics. Thus there have frequently been instruction, seminars, and workshops also in Tlingit, Haida, St. Lawrence Island Eskimo, Aleut and Kutchin, comparative Eskimo and comparative Athabaskan.

UAF is unique in offering this curriculum, which benefits also from the research staff and library of the Alaska Native Language Center.

Requirements

MINOR in Alaska Native Languages:
A minor in Alaska Native languages requires 15 credits in Eskimo or Alaska Native language courses.

(See also "Eskimo.")

Alaska Native Studies

College of Liberal Arts
Department of Alaska Native Studies (907) 474-7181
Degree: B.A.

Minimum Requirements for Degree: 130 Credits
The Alaska Native studies program seeks to provide the student with (1) a keen awareness of the scope, richness, and variety of Alaskan Native cultural heritages, and (2) a series of critical perspectives on the contemporary Native experience in the plural society of North America. The student's academic program will be interdisciplinary as it is built upon a combination of appropriate courses currently offered in other specialized disciplines and of an integrated set of core courses offered by the Alaska Native studies program.

The Alaska Native studies program is designed to offer a second major or a minor for many bachelor's degree candidates. It seeks students from many fields of specialization who anticipate either direct or indirect professional involvement in Alaskan Native communities specifically and in multicultural settings generally.

Requirements

Alaska Native Studies — B.A. Degree
1. Complete general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

   Credits

   Prerequisites (12 Credits):
   Select 4 courses from the following group:
   ANL 215 — Eskimo-Alutet Languages ............ 3
   ANL 216 — Indian Languages of Alaska ............ 3
   ANTH 242 — Native Cultures of Alaska ............ 3
   HIST 110 — History of Alaska Natives ............ 3
   PS 263 — Alaska Native Politics ............ 3

   Core Courses (24 Credits):
   A. Complete the following required courses (15 credits):
      ANS 310 — The Alaska Native Lands Settlement ........ 3
      ANS 320 — Language and Culture; Applications to Alaska ........ 3
      ANS/ENGL 340 — Contemporary Native American Literature or ANS/ENGL 349 — Narrative Art of Alaska Native Peoples (in translation) ........ 3
      ANS 401 — Cultural Knowledge of Native Elders ........ 3
      ANS/PS 425 — Federal Indian Law and Alaska Natives or ANS/PS 450 — Comparative Aboriginal Rights and Policies 3
   B. Complete 9 credits of the following:
      ANS 160 — Alaska Native Dance ........ 3
      ANS/THTR 161 — Introduction to Tuna Theater .......... 3
      MUS 223 — Native Alaskan Music ........ 3
      ANS 220 — Cultural Differences in Institutional Settings ........ 3
      ANS 250 — Current Alaska Native Leadership Perspectives ........ 3
      ANS 251 — Practicum in Native Cultural Expression ........ 3
      ANS 300 — Rhetorical Expression of the Alaska Native Experience ........ 3
      ANS/RE 315 — Tribal People and Development ........ 3
      ANS/PS 325 — Alaska Native Self Government ........ 3
      ANS 351 — Practicum in Native Cultural Expression ........ 3
      ANS 360 — Advanced Alaska Native Dance ........ 3
      ANS 361 — Advanced Alaska Native Performance ........ 3
      ANS/ART 365 — Native Arts of Alaska ........ 3
      ANS 375 — Native American Religion and Philosophy ........ 3
      SOC 408 — American Minority Groups ........ 3
      ANS/ED 420 — Alaska Native Education ........ 3
      ANS 475 — Alaska Native Social Change ........ 3
      ANS 505 — Alaska Native Languages ........ 3

MINOR in Alaska Native Studies
A minor requires a minimum of 15 credits in Alaska Native Studies, including ANS 401 and an additional 3 credits at the 300 - 400 level. All minor programs must be approved by the Head, Alaska Native studies.

Anthropology

College of Liberal Arts
Department of Anthropology (907) 474-7288
Degrees: B.A., B.S., M.A., Ph.D.

Minimum Requirements for Degrees: B.A.: 130 credits; B.S.: 130 credits; M.A.: 30 additional credits; Ph.D: Open

The anthropology program offers a balanced and flexible program of academic courses and research opportunities in cultural anthropology, archaeology, and physical anthropology, particularly with respect to the past and present cultures of the North. Anthropology contributes to an understanding of the complex problems of human behavior, cultural and social organization, and the relationship of humans to the various environments. Archaeological and human ecological research carried out in the field and library provides information about past and present modes of living and of origins and distribution of peoples and cultures in the Arctic and subarctic.

Requirements

Anthropology — B.S. or B.A. Degree
1. Complete general university requirements and B.A. or B.S. degree requirements.
2. Complete the following program (major) requirements:

   Required Anthropology Courses:
   ANTH 103 — Human Evolution and World Prehistory ........ 3
   ANTH 104 — Social/Cultural Anthropology ........ 3
   Historical Science:
   (Select 6 credits from the following group)
   ANTH 211 — Fundamentals of Archaeology ........ 3
   ANTH 315 — Human Biology ........ 3
   ANTH 414 — Environmental Archaeology ........ 3
   ANTH 423 — Paleoanthropology ........ 3
   Social Science:
   (Select 6 credits from the following group)
   ANTH 306 — Economic Anthropology ........ 3
   ANTH 320 — Language and Culture ........ 3
   ANTH 407 — Kinship and Social Organization ........ 3
   ANTH 409 — Religion ........ 3
   ANTH 410 — History of Social/Cultural Anthropology ........ 3
   Area Courses
   (Select one 3 credit ethnographic area course and one 3 credit prehistory area course)
   ANTH 210 — New World Prehistory ........ 3
   ANTH 212 — Old World Prehistory ........ 3
   ANTH 301 — World Ethnography: region* ........ 3
   ANTH 302 — Anthropology of Siberia ........ 3
   Open program electives a 200 level or above* ........ 12
   *Different geographic regions will be covered each year; e.g. North America, Oceania, etc.

MINOR in Anthropology
A minor in anthropology requires ANTH 103 and 104, plus 12 additional hours in Anthropology.

Anthropology — M.A. Degree
The graduate program emphasizes a basic and general preparation in the field of anthropology. Such preparation enables graduates of the program to (1) pursue more advanced training leading to the Ph.D. in anthropology, or (2) prepares them to teach anthropology within secondary education and/or graduate levels of higher education, or (3) prepares students for career positions with various levels of government in which some anthropological background and/or expertise is beneficial. While the basic program is oriented toward general competence, subfield specialization is possible through individual programs.

Anthropology — Ph.D.
The Ph.D. is available with an emphasis in several areas of anthropology: Alaskan archaeology; Quaternary studies; and contemporary Alaska Native studies.

For complete information on the graduate programs in anthropology, see the UAF Graduate Catalog.
Applied Accounting

College of Rural Alaska
Tanana Valley Campus

(907) 451-7223

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

The applied accounting program prepares students for entry-level accounting positions in payables and receivables, bookkeeping and payroll accounting. This program covers financial decision-making tools for the small business operator as well. The courses in this program address the concerns of modern business people and provide the training necessary to enhance success in business. Many classes are scheduled in the evening in order to accommodate working students. Microcomputer and office technology labs are available for "hands on" training.

Requirements

Applied Accounting — A.A.S. Degree

1. Complete the following general university and A.A.S. requirements:

   Communications:
   - ENGL 111X and ENGL 211X, 212*, or 213X ..... 6
   - COMM 131X or 141X ..... 3

   Mathematics or Natural Science:
   - A math or natural science course at the 100 level or above ..... 3
   - Humanities, social sciences, mathematics, natural science or Perspectives on the Humanities Condition ..... 3

2. Complete the following major degree requirements:

   - ACCT 101 — Elementary Accounting I ..... 3
   - ACCT 102 — Elementary Accounting II ..... 3
   - ABUS 141 — Payroll Accounting ..... 2
   - ABUS 211 — Tax for Business Entities ..... 2
   - ABUS 221 — Microcomputer Accounting ..... 3
   - ABUS 230 — Applied Intermediate Accounting ..... 3
   - ABUS 243 — Applied Cost Accounting ..... 3
   - ABUS 244 — Analyzing Financial Statements ..... 3
   - BA 151 — Introduction to Business ..... 3
   - ABUS 179 — Fundamentals of Supervision ..... 3
   - ABUS 241 — Introduction to Business Planning ..... 3
   - ABUS 242 — Calculating Machines ..... 2
   - ABUS 250 — Introduction to Managerial Accounting ..... 3
   - ABUS 255 — Marketing in Tourism ..... 3
   - OMT 203 — Calculating Machines ..... 2
   - Subtotal ..... 41

3. Complete a total of four general electives credits (4)

   Degree Total: ..... 60

   *ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

Applied Business

College of Rural Alaska
Tanana Valley Campus

(907) 451-7223

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

Planning and preparation are the keys to success in business. Running a business effectively requires a basic understanding of the principles of accounting, management, economics, business law and finance. The two-year associate of applied science degree in applied business provides students with the skills and training needed to succeed in business. Instructors strive to equip students with practical understanding of the marketplace and not just a "textbook" view of business.

Requirements

Applied Business — A.A.S. Degree

1. Complete the following general university and A.A.S. requirements:

   Communications:
   - ENGL 111X — Methods of Written Communication ..... 3


ENGL 211X — Intermediate Exposition, with Modes of Literature or ENGL 212* — Business, Grant, and Report Writing or ENGL 213X — Intermediate Exposition ..... 3

COMM 131X — Fund of Oral Comm: Group Context or COMM 141X — Fund of Oral Comm: Public Context ..... 3

Mathematics:
   - MATH 107 — Functions for Calculus or MATH 131X — Concepts and Contemp Applications of Mathematics or MATH 161 — Algebra for Business and Economics ..... 3

   Elective selected from Humanities, Social Science, Mathematics, Natural Science or Perspectives on the Human Condition ..... 3

2. Complete the following major degree requirements (30 credits):

   (courses may be completed in 1-3 credit modules)
   - BA 151 — Introduction to Business ..... 3
   - CAPS 150 — Computer Business Applications 
   - ACCT 101 — Elementary Accounting 
   - ACCT 102 — Elementary Accounting 

   or ABUS 188 — Personal Income Tax 
   and ABUS 211 — Taxes for Business Entities ..... 3
   - ABUS 154 — Human Relations 
   - ABUS 179 — Fundamentals of Supervision 
   - ABUS 232 — Contemporary Management Issues 
   - ABUS 241 — Applied Business Law 

   Economics Elective at the 100 level or above ..... 3
   - ABUS, BA, CAPS, CAH, OMT, FLS, or RD Elective 

   Complete the requirements for one of the three areas of specialization (A, B, or C) as listed below (15 credits):

   A. Entrepreneurship (courses may be completed in 1-3 credit modules):

      9 credits as follows:
      - ABUS 233 — Financial Management 
      - ABUS 272 — Small Business Planning 
      - ABUS 273 — Managing a Small Business 
      plus 6 elective credits from the following:
      - ABUS 141 — Payroll Accounting 
      - ABUS 151 — Village Based Entrepreneurship 
      - ABUS 250 — Introduction to Managerial Accounting 
      - ABUS 253 — Principles of Retailing 
      - ABUS 254 — Salesmanship 
      - OMT 221 — Records Management 
      - OMT 231 — Business Communications

   B. Tourism (courses may be completed in 1-3 credit modules):

      ABUS 158 — Introduction to Tourism 
      ABUS 255 — Marketing in Tourism 
      ABUS 299 — Practicum in Tourism 
      plus 6 elective credits from:
      - ABUS 256 — Small Hotel, Bed and Breakfast and Lodge Operations 
      - ABUS 267 — Transportation and Logistics 
      - ABUS 268 — Attraction/Development and Management 
      - ABUS 269 — Food and Beverage Management 

   C. Computer Applications (courses may be completed in 1-3 credit modules):

      Complete 15 credits as follows:
      - CAPS 126 — Micro Computer Operating Systems 
      - CAPS 135 — Micro Computer Spreadsheets 
      - CAPS 160 — Introduction to Word Processing 
      - CAPS 220 — Micro Computer Graphics or Desktop Publishing 
      - CAPS 260 — Advanced Word Processing 
      - CAPS 275 — Micro Computer Databases 
      - CAPS or OMT elective 

   other courses may be used with program approval

   *ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

Applied Mining Technology

College of Rural Alaska
Tanana Valley Campus

(907) 451-7223

Certificate

At the present time, no students are being accepted into the Applied Mining Technology Program.
**Minimum Requirements for Certificate: 30 credits**

The primary objective of the program is to prepare students for employment in the mining technology industry. Possible career paths for certificate graduates include entry level positions with exploration, mining, environmental and consulting companies. A secondary objective is to provide career development and personal enrichment for experienced miners and workers within the mineral industry.

UAF is unique in offering a one-year mining technology job training program. Certificate graduates will be trained to meet the anticipated demand for workers trained in open pit mining, surface coal mining, underground metal mining, sand and gravel, and placer mining.

**Requirements**

**Applied Mining Technology — Certificate**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN 101</td>
<td>Minerals, Man and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>AMIT 101</td>
<td>General Mining Technology</td>
<td></td>
</tr>
<tr>
<td>GEOS 101</td>
<td>The Dynamic Earth</td>
<td>4</td>
</tr>
<tr>
<td>AMIT 109</td>
<td>Underground Mine Safety</td>
<td>2</td>
</tr>
<tr>
<td>AMIT 110</td>
<td>New Underground Miner Training</td>
<td></td>
</tr>
<tr>
<td>AMIT 120</td>
<td>Explosives I</td>
<td>2</td>
</tr>
<tr>
<td>AMIT 125</td>
<td>Mineral Exploration Techniques</td>
<td>3</td>
</tr>
<tr>
<td>AMIT 129</td>
<td>Surface Mining Safety</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 130</td>
<td>Surface Mining Operations</td>
<td>3</td>
</tr>
<tr>
<td>AMIT 140</td>
<td>Environmental Permitting</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 170</td>
<td>Fundamentals of Coal Mining</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>24</strong></td>
</tr>
</tbody>
</table>

2. Select 4 credits from the following major specialty electives

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMIT 151</td>
<td>Settling Pond Technology</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 152</td>
<td>Techniques of Fire Assay</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 153</td>
<td>Laboratory Analysis</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 154</td>
<td>Water Quality and Flocculents</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 155</td>
<td>Drilling Technology</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 156</td>
<td>Applied Cartography</td>
<td></td>
</tr>
<tr>
<td>AMIT 161</td>
<td>Alaskan Ore Deposits</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 162</td>
<td>Geochanical Sampling</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 180</td>
<td>Colored Stone Evaluation I</td>
<td>3</td>
</tr>
<tr>
<td>AMIT 185</td>
<td>Diamond Grading and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>AMIT 193</td>
<td>Special Topics</td>
<td>1-3</td>
</tr>
<tr>
<td>AMIT 205</td>
<td>Geomagnetic Surveying</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 206</td>
<td>Electromagnetic Surveying</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 210</td>
<td>Advanced Underground Mining</td>
<td>2</td>
</tr>
<tr>
<td>AMIT 220</td>
<td>Explosives II</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 230</td>
<td>Field Methods</td>
<td>2</td>
</tr>
<tr>
<td>AMIT 231</td>
<td>Heap Leaching</td>
<td>1</td>
</tr>
<tr>
<td>AMIT 280</td>
<td>Colored Stone Evaluation II</td>
<td>3</td>
</tr>
<tr>
<td>AMIT 282</td>
<td>Cooperative Work Experience</td>
<td>2</td>
</tr>
<tr>
<td>AVTY 231</td>
<td>Arctic Survival</td>
<td>3</td>
</tr>
<tr>
<td>HLTH 120</td>
<td>Industrial First Aid and CPR</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

3. Any approved Applied Business, Computer Application, Drafting Technology, 100 level or above university science course, Mechanics, Welding, or School of Mining Engineering course. NOTE: Only a maximum of three approved elective credits can be taken which must be approved in advance (in writing) by the adviser of the Mining Technology Program (3)

Certificate total: 30 credits

---

**Applied Physics**

**College of Natural Sciences**

**Department of Physics**

(907) 474-7339

**Degree: B.S.**

**Minimum Requirements for Degree: 130 credits**

**Requirements**

**Applied Physics — B.S. Degree**

1. Complete the general university requirements and B.S. degree requirements.

2. Complete the following program (major) requirements:

   - Complete MATH 200-201-202-302 and 9 additional credits in mathematics at the 200-level or above.
   - Complete PHYS 213, 311, and 331 and 12 additional credits in physics at the 300-level or above.
   - Complete 20 approved credits** in a chosen subject area of applied physics.

3. Minimum credits required

   - 130 credits

   * Implicit in this requirement are 8 credits of lower-division physics courses which are prerequisites for these courses.

   ** These credits must be approved before the beginning of the student's final semester by the head of the Physics Department.

---

**Arctic Engineering**

**School of Engineering**

**Department of Civil Engineering**

(907) 474-7241

**Degree: M.S.**

**Minimum Requirements for Degree: 30 credits (beyond Bachelor's Degree in Engineering)**

The arctic engineering program is designed to provide training for graduate engineers who must deal with the unique challenges of design, construction, and operations in cold regions of the world. The special problems created by the climatic, geological, and logistical conditions of the Arctic and subarctic require knowledge and techniques not usually covered in the normal engineering courses.

The current development of petroleum and other natural resources has accentuated the demand for engineers trained in northern operations, both from the private industries that are involved in the development and from government agencies that must plan for or regulate this activity.

For complete information on the graduate program in arctic engineering, see the UAF Graduate Catalog.

---

**Art**

**College of Liberal Arts**

**Department of Art**

(907) 474-7530

**Degrees: B.A., B.F.A.**

**Minimum Requirements for Degrees: 130 credits**

The program of the art department recognizes the responsibility of the fine arts within the humanities. Courses in art further encourage independent, original, and creative thinking.

The bachelor of fine arts is a professionally oriented degree designed to prepare students for careers in art. This degree is also the usual prerequisite for graduate studies in art. Enrollment in the B.F.A. program is recommended only for those students willing to make the considerable commitment of time and energy necessary to strive for professional competence in their major areas. Admission to the B.F.A. program requires a portfolio review by the art faculty and is generally done in the junior year.

**Requirements**

**Art — B.A. Degree**

1. Complete general university requirements and B.A. degree requirements.

2. Complete the following program (major) requirements:

   - Lower Division (27 credits)
     - ART 105 — Beginning Drawing
     - ART 205 — Intermediate Drawing
     - ART 261-262 — History of World Art
     - ART 211 — Beginning Sculpture
     - ART 213 — Beginning Oil Painting
     - Take two of the following:
       - ART 161 — Two-Dimensional Design (3)
       - ART 162 — Color and Design (3)
       - ART 163 — Three-Dimensional Design (3)
   - One elective chosen from:
     - ART 201 — Beginning Ceramics (3)
     - ART 207 — Beginning Printmaking (3)
     - ART 209 — Beginning Metalsmithing and Jewelry (3)

   - Upper Division (12 credits)
     - Nine (9) credits in upper division courses in one subject area, selected from one of these major concentrations:
       - Drawing
       - Sculpture
       - Painting
       - Ceramics
       - Printmaking
       - Metalsmithing

---
Upper division Art History ............................................... 3
Minimum credits required for major .......................... 39
Minimum credits required for degree ...................... 130
Transfer students who are candidates for the B.A. degree or a B.F.A. in Art
must complete a minimum of 18 hours of credits in art courses while in residence.

Art — B.F.A. Degree
1. Complete general university requirements and B.A. degree requirements;
a non-art minor is not required for this degree.
2. Complete the following program (major) requirements:

A. Lower Division (27 credits) Credits
ART 105 — Beginning Drawing .................................. 3
ART 205 — Intermediate Drawing .............................. 6
ART 211 — Beginning Sculpture .................................. 3
ART 213 — Beginning Oil Painting ............................ 6
Take two of the following: ........................................... 6
ART 161 — Two-Dimensional Design (3)
ART 162 — Color and Design (3)
ART 163 — Three-Dimensional Design (3)
One of the following .................................................. 3
ART 201 — Beginning Ceramics (3)
or ART 207 — Beginning Printmaking (3)
or ART 299 — Beginning Metalsmithing and Jewelry (3)
or ART 268 — Beginning Native Art Studio (3)

B. Upper Division (48 credits)
* Upper division Art History ........................................... 9
Major Program approved by BFA thesis committee, to include at least
two and no more than three studio areas, one area of which
must include a minimum of 15 credits, and a second area of which
must include a minimum of 9 credits .................................. 30
Upper Division Art Electives .................................... 6
Thesis Project .................................................................. 3
Minimum credits required for degree ...................... 130

All studio areas in the department are eligible for fulfillment of specialization
requirements — painting, drawing, printmaking, sculpture, ceramics, metal-
smithing, and Native art. Computer art courses may also be used as one of the 2-
3 required areas of a program plan.

* HUM 332, ART 365, ART 366, ART 367, or ANTH 412 may apply
toward this requirement.

MINOR in Art
A minor in Art for the B.A. or B.S. degree is available only to non-art majors
and requires 15 credits from at least 3 subject areas in Art.

Art Program for Teachers
Students who are preparing to teach art must complete the requirements
for an education minor as required by the Department of Education.

Asian Studies

Interdisciplinary (907) 474-6516

Minor only
A minor in Asian Studies provides instruction in the varieties of Asian
languages and cultures through an interdisciplinary approach, and enables
students to consolidate various course offerings into a meaningful and cohesive
program relevant to several major fields of specialization.

Requirements
MINOR in Asian Studies
Complete 15 semester credits in approved courses in Asian Studies,
distributed among at least three departments, and including material on at least
two Asian countries.

Two-semester-length courses in one of the following courses may be taken
at the university level only.

ANTH 323, HIST 121-122, 330, 331; GEOG 311;
JPN 101-102; 201-202; PHIL 202.

Associate of Arts

College of Rural Arts

Bristol Bay Campus (907) 842-5109
Chukchi Campus (907) 442-3400
Interior Campus (907) 474-5439

Kuskokwim Campus

Northwest Campus

Tanana Valley Campus

Degree: A.A.

Minimum Requirements for Degree: 60 credits

The associate of arts degree offers a rigorous program of study for the serious student who eventually intends to transfer to a baccalaureate program.

Requirements
All credit for the A.A. degree must be at the 100-level or above with 20
credits at the 200-level or above, and be distributed as follows:

Communication (9 credits)
ENGL 111X — Methods of Written Communication .......................... 3
ENGL 211X — Intermediate Exposition with Modes of Literature
or * ENGL 212X — Business, Grant and Report Writing
or ENGL 213X — Intermediate Exposition .............................. 3

MINOR in Asian Studies

Complete 15 semester credits in approved courses in Asian Studies,
distributed among at least three departments, and including material on at least
two Asian countries.

Two-semester-length courses in one of the following courses may be taken
at the university level only.

ANTH 323, HIST 121-122, 330, 331; GEOG 311;
JPN 101-102; 201-202; PHIL 202.

Associate of Arts

College of Rural Arts

Bristol Bay Campus (907) 842-5109
Chukchi Campus (907) 442-3400
Interior Campus (907) 474-5439

Kuskokwim Campus

Northwest Campus

Tanana Valley Campus

Degree: A.A.

Minimum Requirements for Degree: 60 credits

The associate of arts degree offers a rigorous program of study for the serious student who eventually intends to transfer to a baccalaureate program.

Requirements
All credit for the A.A. degree must be at the 100-level or above with 20
credits at the 200-level or above, and be distributed as follows:

Communication (9 credits)
ENGL 111X — Methods of Written Communication .......................... 3
ENGL 211X — Intermediate Exposition with Modes of Literature
or * ENGL 212X — Business, Grant and Report Writing
or ENGL 213X — Intermediate Exposition .............................. 3

MINOR in Asian Studies

Complete 15 semester credits in approved courses in Asian Studies,
distributed among at least three departments, and including material on at least
two Asian countries.

Two-semester-length courses in one of the following courses may be taken
at the university level only.

ANTH 323, HIST 121-122, 330, 331; GEOG 311;
JPN 101-102; 201-202; PHIL 202.

Associate of Arts

College of Rural Arts

Bristol Bay Campus (907) 842-5109
Chukchi Campus (907) 442-3400
Interior Campus (907) 474-5439

Kuskokwim Campus

Northwest Campus

Tanana Valley Campus

Degree: A.A.

Minimum Requirements for Degree: 60 credits

The associate of arts degree offers a rigorous program of study for the serious student who eventually intends to transfer to a baccalaureate program.

Requirements
All credit for the A.A. degree must be at the 100-level or above with 20
credits at the 200-level or above, and be distributed as follows:

Communication (9 credits)
ENGL 111X — Methods of Written Communication .......................... 3
ENGL 211X — Intermediate Exposition with Modes of Literature
or * ENGL 212X — Business, Grant and Report Writing
or ENGL 213X — Intermediate Exposition .............................. 3

MINOR in Asian Studies

Complete 15 semester credits in approved courses in Asian Studies,
distributed among at least three departments, and including material on at least
two Asian countries.

Two-semester-length courses in one of the following courses may be taken
at the university level only.

ANTH 323, HIST 121-122, 330, 331; GEOG 311;
JPN 101-102; 201-202; PHIL 202.

Associate of Arts

College of Rural Arts

Bristol Bay Campus (907) 842-5109
Chukchi Campus (907) 442-3400
Interior Campus (907) 474-5439

Kuskokwim Campus

Northwest Campus

Tanana Valley Campus

Degree: A.A.

Minimum Requirements for Degree: 60 credits

The associate of arts degree offers a rigorous program of study for the serious student who eventually intends to transfer to a baccalaureate program.

Requirements
All credit for the A.A. degree must be at the 100-level or above with 20
credits at the 200-level or above, and be distributed as follows:

Communication (9 credits)
ENGL 111X — Methods of Written Communication .......................... 3
ENGL 211X — Intermediate Exposition with Modes of Literature
or * ENGL 212X — Business, Grant and Report Writing
or ENGL 213X — Intermediate Exposition .............................. 3

MINOR in Asian Studies

Complete 15 semester credits in approved courses in Asian Studies,
distributed among at least three departments, and including material on at least
two Asian countries.

Two-semester-length courses in one of the following courses may be taken
at the university level only.

ANTH 323, HIST 121-122, 330, 331; GEOG 311;
JPN 101-102; 201-202; PHIL 202.

Associate of Arts

College of Rural Arts

Bristol Bay Campus (907) 842-5109
Chukchi Campus (907) 442-3400
Interior Campus (907) 474-5439

Kuskokwim Campus

Northwest Campus

Tanana Valley Campus

Degree: A.A.

Minimum Requirements for Degree: 60 credits

The associate of arts degree offers a rigorous program of study for the serious student who eventually intends to transfer to a baccalaureate program.

Requirements
All credit for the A.A. degree must be at the 100-level or above with 20
credits at the 200-level or above, and be distributed as follows:

Communication (9 credits)
ENGL 111X — Methods of Written Communication .......................... 3
ENGL 211X — Intermediate Exposition with Modes of Literature
or * ENGL 212X — Business, Grant and Report Writing
or ENGL 213X — Intermediate Exposition .............................. 3

MINOR in Asian Studies

Complete 15 semester credits in approved courses in Asian Studies,
distributed among at least three departments, and including material on at least
two Asian countries.

Two-semester-length courses in one of the following courses may be taken
at the university level only.

ANTH 323, HIST 121-122, 330, 331; GEOG 311;
JPN 101-102; 201-202; PHIL 202.
2. Complete the following requirements for the major:

**AVTY 100 — Private Pilot Ground School** ........................................ 4
**AVTY 101 — Private Pilot Flight Training** ....................................... 2
**AVTY 102 — Commercial Ground Instruction** .................................. 3
**AVTY 103 — Commercial Flying** ..................................................... 2
**AVTY 155 — Preventive Maintenance for Pilots** ................................ 3
**AVTY 200 — Instrument Ground School** ......................................... 4
**AVTY 201 — Instrument Flight Training** .......................................... 2
**AVTY 231 — Arctic Survival** ......................................................... 3
**AVTY 235 — Elements of Weather** .................................................. 3
**Subtotal** ......................................................................................... 26

3. Complete the following major specialty electives:
Select 15 credits from the following:
**AVTY 105 — Seaplane Flight Training** ........................................... 1
**AVTY 107 — Multi-Engine Flight Training** ....................................... 1
**AVTY 108 — Introduction to Ski** ...................................................... 1
**AVTY 109 — Glider Flight Training** .................................................. 1
**AVTY 110 — Biennial Flight Review** ............................................... 1
**AVTY 116 — Aviation History** ....................................................... 3
**AVTY 117 — Aviation Weather** ....................................................... 3
**AVTY 202 — Flight Instructor Ground School** .................................. 3
**AVTY 203 — Flight Instructor Flight Training** ................................... 2
**AVTY 205 — Instrument Instructor Flying** ....................................... 3
**AVTY 206 — Transport Pilot Ground School** ..................................... 4
**AVTY 207 — Transport Pilot Flight Instruction** .................................. 2
**AVTY 208 — Flight Simulator Operations** ......................................... 3

4. General Electives ................................................................. 4

**Degree Total** .............................................................................. 60

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

**MINOR in Aviation Technology**
A minor in aviation technology is available to students pursuing a Bachelor of Science or Bachelor of Arts degree. This program will give students an opportunity to become familiar with the field of aviation, with particular emphasis on the use of aviation as a tool and economic process within the Alaskan environment.

**Foundation Courses** (7 credits)
**AVTY 100 — Private Pilot Ground School** ......................................... 4
**AVTY 111 — Fundamentals of Aviation** ............................................ 3
**AVTY 117 — Aviation Weather** ....................................................... 3

**Core Courses** (6 credits)
**AVTY 231 — Arctic Survival** ......................................................... 3
**AVTY 305 — Aviation Law** .............................................................. 3

**Elective Courses**
Choose three credits from the following courses:
**AVTY 301 — Air Worker Strategies** ................................................ 3
**AVTY 302 — Aerial Data Collection** ............................................... 2
**AVTY 302L — Aerial Data Collection Lab** ....................................... 1
**AVTY 402 — Aircraft Management** ............................................... 2

**Subtotal** ...................................................................................... 3

**Biochemistry and Molecular Biology**

**College of Natural Sciences**
**Department of Chemistry and Biochemistry** (907) 474-7525
**Degrees:** M.S., Ph.D.

**Minimum Requirements for Degrees:** M.S.: 30 additional credits; Ph.D.: open

For complete information on the graduate programs in biochemistry and molecular biology, see the UAF Graduate Catalog.

**Biological Sciences**

**College of Natural Sciences**
**Department of Biology and Wildlife** (907) 474-7542
**Degrees:** B.A., B.S., Ph.D.

**Minimum Requirements for Degrees:** B.A.: 130 credits; B.S.: 130 credits; Ph.D.: open

The curricula in the biological sciences program are designed to give the student a broad education as well as a sound foundation in the basic principles of biology. Students pursuing either a B.A. or B.S. degree may have majors in biological sciences. The B.A. degree includes fewer credits in the major field, but gives greater emphasis in the fields of social sciences and humanities and allows a greater breadth of subject matter in the curriculum. The B.S. degree includes a foundation in the basic sciences as well as a stronger major within the biological sciences program. Candidates who expect to teach in public secondary schools must be sure that education requirements are met.

**Requirements**
**Biological Sciences — B.A. Degree**

1. Complete the general university requirements and B.A. degree requirements. (As part of the core, complete CHEM 105X-106.X.)

2. Complete the following requirements for the major:

**BIOE 105X — Fundamentals of Biology I** ...................................... 4
**BIOE 106X — Fundamentals of Biology II** ................................... 4
**BIOE 262 — Principles of Genetics** ............................................. 4
**BIOE 271 — Principles of Ecology** .............................................. 4
**BIOE 303 — Principles of Metabolism and Biochemistry** (4)
**or CHEM 321-322 — Organic Chemistry (6)** ............................ 4-6
**BIOE 310 — Animal Physiology (4)**
**or BIOE 211-212 — Human Anatomy and Physiology I and II (8)**
Biology

College of Natural Sciences
Department of Biology and Wildlife (907) 474-7542

Degrees: M.S., M.A.T.

Minimum Requirements for Degrees: M.S.: 30 or more additional credits; Ph.D.: open

For complete information on the graduate program in biology, see the UAF Graduate Catalog.

Botany

College of Natural Sciences
Department of Biology and Wildlife (907) 474-7542

Degree: M.S.

Minimum Requirements for Degree: 30 additional credits

For complete information on the graduate program in botany, see the UAF Graduate Catalog.

Business Administration

School of Management
Department of Business Administration (907) 474-7253

Degrees: B.B.A., M.B.A.

Minimum Requirements for Degrees: B.B.A.: 123 credits; M.B.A.: 30 additional credits

The business administration department offers professional education in the fields of management, finance, human resource management, international business, marketing and travel industry management to those individuals interested in entering industry or government upon graduation. The goal of the program is to prepare men and women to meet the complex problems of the political, economic, and social environment and to enable them to give efficient service to industry and government on the basis of their academic training. B.A. 151 is an overview and is recommended as an introductory course for persons with a potential interest in a business degree or minor who are either undecided or perhaps unclear about the nature of the various functions performed in the administration of organizations. B.B.A. students must, during their first 30 hours, attain computer literacy by either testing or earning a "C" or better in a basic computer literacy course.

All majors must earn a "C" or better in all Common Body of Knowledge courses, department specific general requirements, major specific requirements, and specific math and statistics requirements. Admittance to 300 or 400 level School of Management courses will be granted only to students with upper division standing. Others will be admitted only with the written permission of the appropriate department head. Students enrolling in School of Management courses are expected to have completed the necessary prerequisites for each course. A $25.00 per semester student computing facility user fee will be assessed for any student taking one or more School of Management courses (ACCT, AIS, BA and ECON). This fee is in addition to any lab/material fees. B.B.A. students must, during their first 30 hours, attain computer literacy by either testing or earning a "C" or better in a basic computer literacy course.

Requirements

Business Administration — B.B.A. Degree

1. Complete general university requirements and B.B.A. degree requirements. (As part of the core, complete PHIL 322-Ethics.)
2. Complete the following requirements:
   ENGL 314 — Technical Writing ................................. 3
3. Complete the Common Body of Knowledge (CBK) (31-34 credits):

   Credits
   ACCT 101 and 102 — Elementary Accounting ................. 6
   AIS 101 — Effective Personal Computer Use or demonstrated computer literacy .................................. 0-3
   AIS 310 — Intro. to Management Information Systems or AIS 316 — Accounting Information Systems ...... 3
   BA 325 — Financial Management .................................. 3
   BA 330 — The Legal Environment of Business ................. 4
   BA 343 — Principles of Marketing ................................ 3
   BA 360 — Production/Operations Management ................. 3
   BA 390 — Organizational Theory and Behavior ................ 3
   BA 462 — Corporate Strategy ..................................... 3
   ECON 324 — Inter. Macroeconomics or ECON 350 — Money & Banking .............................................. 3
4. Complete the following major complex requirements:

   Credits
   ACCT 352 — Management Accounting .......................... 3
   BA 307 — Personnel of Management ............................. 3
   ECON 321 or 322 — Intermediate Microeconomics/Managerial Economics ............................................ 3
Option (selected from below) ........................................ 15 or more
5. Complete a minor complex (optional) or free electives ....... 21
(All must be outside the School of Management with the exception
of introductory computer literacy credits. The minor may not be
from the School of Management.)
OPTIONS: (An option is required for the BBA degree in Business
Administration. Students are expected to have completed 300 level
coursework before enrolling in 400 level option courses.
Option in Finance:
BA 423 — Investment Management ................................ 3
BA 430 — Current Topics in Finance ......................... 3
BA 461 — International Finance ................................ 3
Upper-division electives approved in writing by an option
advisor ........................................................................ 3
Option in Human Resource Management:
BA 317 — Employment Law ...................................... 3
BA 327 — Collective Bargaining and Labor Relations ....... 3
BA 441 — Promotion Management ............................. 3
BA 456 — Small Business Management ....................... 3
BA 457 — Training and Management Development ............ 3
Option in International Business:
ECON 463 — International Economics ....................... 3
Two academic years of one foreign language* .............. 12-18
(german, Japanese, Russian, Spanish, French)
PB 321 or 322 — International Politics ...................... 3
Complete one of the following (appropriate to language concentra-
tion):
GEOG 305 — Geography of Europe (Except USSR) or
GEOG 306 — Geography of Russia or
GEOG 311 — Geography of Asia or
GEOG 305 — Political Geography ............................. 3
Approved upper division electives ......................... 6
(*Note: Foreign language credit may also meet 6 hours of core
degree requirements.)
Option in Management:
BA 317 — Employment Law ...................................... 3
BA 327 — Collective Bargaining and Labor Relations ....... 3
BA 425 — Advanced Corporate Financial Problems ....... 3
BA 441 — Promotion Management ............................. 3
BA 456 — Small Bus. Management .............................. 3
Option in Marketing:
BA 436 — Consumer Behavior ................................... 3
BA 441 — Promotion Management ............................. 3
BA 445 — Marketing Research ................................... 3
BA 490 — Services Marketing .................................... 3
Upper-division electives approved in writing by an option advisor.
Option in Travel Industry Management:
BA 160 — Principles of Tourism ................................ 3
BA 372 — Management of Hospitality and Tourism Industry .. 3
BA 373 — Community Tourism Development ............... 3
BA 471 — Tourism Seminar ..................................... 3
BA 490 — Services Marketing .................................... 3
6. Minimum credits required ........................................ 123
Note: The B.B.A. degree requires 50% of the accounting, business
administration and economics credits to be earned in residence at
the University of Alaska Fairbanks.

MINOR in General Business*:
Complete at least one course from each group:
1. BA 151 — Introduction to Business or
   ECON 200 — Principles of Economics ....................... 3
2. ACCT 101 — Elementary Accounting ..................... 3
3. BA 343 — Principles of Marketing or
   or BA 390 — Organizational Theory and Behavior ....... 3
4. BA 307 — Personnel Management or
   or BA 360 — Operations Management** .................. 3
5. BA 355 — Personal Finance or
   or BA 325 — Financial Management** .................... 3
**Notes: ACCT 102, ECON 200 and 227, and MATH 262
are prerequisites for BA 360; ECON 200 and STAT 200 are prerequi-
sites for BA 325.

MINOR in Finance*:
ACCT 101 — Elementary Accounting ......................... 3
BA 325 — Financial Management** .......................... 3
BA 423 — Investment Management ............................ 3
Complete at least two of the following:
BA 355 — Personal Finance ..................................... 3
BA 425 — Advanced Corporate Financial Problems ....... 3
BA 461 — International Finance ................................ 3
BA 430 — Current Topics in Finance ......................... 3
BA 350 — Introduction to Real Estate and Land Economics .. 3
BA 454 — Student Investment Fund ........................... 3
***Note: ECON 200 and STAT 200 are prerequisites for BA 325.

MINOR in Human Resource Management*:
BA 101 — Effective Personal Computer Use ................ 3
BA 151 — Introduction to Business ........................... 3
BA 307 — Personnel Management ............................. 3
BA 390 — Organizational Theory and Behavior ............. 3
Complete at least one of the following:
BA 317 — Employment Law ...................................... 3
BA 327 — Collective Bargaining and Labor Relations ....... 3

MINOR in Marketing*:
BA 343 — Principles of Marketing ............................. 3
BA 436 — Consumer Behavior ................................... 3
BA 441 — Promotion Management ............................. 3
BA 490 — Services Marketing .................................... 3
Complete at least one of the following courses:
BA 445 — Marketing Research .................................... 3
BA/JS 326 — Principles of Advertising ....................... 3
JS 431 — Public Relations ..................................... 3
****Note: JB 301 or permission of instructor is prerequisite for
JS 433.

MINOR in Travel Industry Management*:
1. Complete the following:
BA 160 — Principles of Tourism ................................ 3
BA 372 — Management of Hospitality and Tourism Industry .. 3
BA 373 — Community Tourism Development ............... 3
BA 471 — Tourism Seminar ..................................... 3
2. Select one of the following courses:
ANS 220 — Cultural Differences in Institutional Settings ....... 3
ANS 365 — Native Art of Alaska ............................... 3
ANTH 242 — Native Cultures of Alaska ....................... 3
BIOL 104 — Natural History of Alaska ....................... 3
ECON 237 — The Alaska Economy ............................. 3
ENGL 349 — Narrative Art of Alaska Native People ......... 3
ENGL 350 — Literature of Alaska and the Yukon Territory .. 3
HIST 110 — History of Alaska Natives ........................ 3
HIST 115 — Alaska, Land and Its People ........................ 3
HIST 341 — History of Alaska ................................... 3
NORS 484 — Seminar in Northern Studies ..................... 3
NRM 101 — Natural Resources Conservation and Policy . 3
NRM 304 — Perspectives in Natural Resources Management .. 3
PS 210 — Alaska Government and Politics ................... 3
PS 263 — Alaska Native Politics ................................ 3
Total ..................................................................... 15

*For a Bachelor of Arts or Bachelor of Science Degree.

Business Administration — M.B.A. Degree
For complete information on the graduate program in business adminis-
tration, see the UAF Graduate Catalog.

Chemistry

College of Natural Sciences
Department of Chemistry and Biochemistry (907) 474-7525
Degrees: B.A., B.S., M.A., M.S., Ph.D.
Minimum Requirements for Degrees: B.A., B.S.: 130 credits; M.A., M.S.: 30
additional credits; Ph.D.: open
Graduates in chemistry qualify in many fields as teachers of chemistry; superin-
tendents in industry; technical sales personnel; research chemists in federal,
state, municipal, academic, or industrial laboratories; in- pre-medicine; or as
laboratory technicians. The rapid introduction of chemical techniques in all
branches of science and the creation of the many synthetic products has
carried substantial growth in the profession. In addition to the traditional
employment opportunities in chemistry, well-qualified graduates find positions
in the fields of environmental science, oceanography, and related interdiscipli-
ary fields.

The curriculum in chemistry offers an opportunity for broad scientific
study. All students specializing in chemistry will meet basic requirements in general inorganic, analytical, organic, and physical chemistry, as well as mathematics and physics. These may be supplemented by courses in biology, education, engineering, geophysics, geology, and advanced courses in biology, chemistry, mathematics, and physics according to the interest of the individual student.

Faculty from many departments and research institutes in the university participate in the department's Program in Biochemistry and Molecular Biology. This program, which emphasizes an understanding of the molecular principles involved in life processes, provides academic and research experience for both undergraduate and graduate students who are interested in careers in the growing area of biotechnology. This program may be especially attractive to students interested in pre-medicine.

The department offers the student well-equipped laboratories housing instrumentation for nuclear magnetic resonance spectrometry, infrared, ultraviolet/visible, laser Raman, and atomic absorption spectrophotometry, mass spectrometry, gas chromatography, and carbon-hydrogen-nitrogen analysis. Additional equipment such as gas chromatograph/mass spectrometer, x-ray diffractometer, electron microscope, and liquid scintillating counters are available in cooperation with other departments and institutes at UAF.

The chemistry department's four-year B.S. curricula in Chemistry and Biochemistry/Molecular Biology option are accredited by the American Chemical Society.

Requirements

Chemistry — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

   **Credits**
   - CHEM 105X-106X — General Chemistry 8
   - CHEM 202 — Basic Inorganic 3
   - CHEM 212 — Chemical Equilibrium & Analysis 3
   - CHEM 213 — Quantitative Analysis Laboratory 1
   - CHEM 321-322 — Organic Chemistry 6
   - CHEM 324 — Organic Laboratory 3
   - CHEM 331-332 — Physical Chemistry 6
   - CHEM 341 — Analytical Instrumental Laboratory** 6
   - CHEM 412 — Instrumental Analytical Methods 3
   - CHEM 413 — Analytical Instrumental Laboratory 3
   - CHEM 414 — Instrumental Methods in Physical Chemistry 3
   - CHEM 482 — Seminar (seniors) 2
   - MATH 200X-201X-202X — Calculus 12
   - PHYS 103-104 or 211-212 — General Physics 8

   Total Credits Required: 130

Chemistry — B.S. Degree

1. Complete the general university requirements and B.S. degree requirements.
2. Complete the following program (major) requirements:

   **Credits**
   - Complete the courses required for a B.A. degree with a major in Chemistry as listed above. Complete the following additional Chemistry courses:
     - *CHEM 402 — Inorganic Chemistry 3
     - *CHEM 488 — Research 4
     - *One additional 400 or 600 level chemistry course 3

   Total Credits Required: 130

Upon completing the recommended curriculum and fulfilling all general university requirements, the student will receive a baccalaureate degree certified by the American Chemical Society. The electives must include at least 6 credits at the upper division level (to satisfy the UAF general degree requirements for 39 upper division credits). Chemistry foundation courses may be used toward partial fulfillment of the natural science requirement for the B.S. degree with a major in Chemistry.

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

Chemistry — B.S. Degree with Biochemistry/Molecular Biology Option

1. Complete the general university requirements and B.S. degree requirements.
2. Complete the following program (major) requirements:

   **Credits**
   - BIOL 105X-106X — Fundamentals of Biology 8
   - BIOL 342 — Microbiology 4

   Total Credits Required: 130

**Requires CHEM 412 as prerequisite.
***CHEM 402 required for ACS accredited degree.

MINOR in Chemistry

A minor in chemistry requires 12 credits above the foundation courses (CHEM 105-106) approved by the head of the Chemistry Department.

Biochemistry and Molecular Biology — M.S., Ph.D.

Requirements for Degrees: B.S.: 135 credits; M.C.E. or M.S.: 30 additional credits

Civil engineers plan, design and supervise the construction of facilities essential to modern life in both the public and private sectors — facilities that vary widely in nature, size and scope: space launching facilities, offshore structures, bridges, buildings, tunnels, highways, transit systems, dams, airports, irrigation projects, treatment and distribution facilities for water and collection and treatment facilities for wastewater.

Civil engineers are leaders of today's sophisticated high technology and are in the forefront of high technology's newest applications. They employ the latest concepts in computer-aided engineering (CAE/CAD) during design, construction, project scheduling and cost control.

Civil engineers are problem solvers involved in community development and improvement and as sure are meeting the challenges of pollution, the deteriorating infrastructure, traffic congestion, energy needs, floods, earthquakes, urban redevelopment and community planning.

The opportunity for creativity is unlimited given the wide scope of projects covered by civil engineering.

The civil engineering program at UAF began in 1922, had its first graduate in 1931 and since has graduated more than 500 men and women. Many of these graduates work in Alaska's cities, towns and villages in a wide range of responsible positions. More than 60 percent of Alaska's professional engineers practice in civil engineering. Civil engineers continue to provide a significant contribution to society. The UAF civil engineering program has been accredited since 1940 and presently by the national Accreditation Board for Engineering and Technology (ABET). All engineering programs in the department give special attention to problems of northern regions.

Requirements

Civil Engineering — B.S. Degree

1. Complete general university requirements.
2. Complete the following degree and program (major) requirements:

   **First Year**
   - Fall Semester 16 credits
     - ENGL 111X — Methods of Comm 3
     - MATH 200X — Calculus 4
     - ES 101 — Introduction to Engineering 2
     - CHEM 105 — General Chemistry 4

   **Second Year**
   - Winter Semester 16 credits
     - BIOL 105-106X — General Zoology 8
     - PHYS 103 — General Physics 4
     - PHYS 104 — General Physics 4

   **Courses in the chemical sciences are essential to modem life in both the public and private sectors.**
Communication

College of Liberal Arts
Department of Communication

Degree: B.A.

Minimum Requirements for Degree: 120 credits

Course work in Communication prepares an individual to handle the challenges of communicating effectively in a rapidly changing world characterized by diversity in gender, cultural background, and belief. The major and minor programs in Communication provide the student with a comprehensive back-ground in the discipline in preparation for employment or further education. Individuals majoring in a wide variety of other disciplines will also find Communication electives to be valuable additions to their programs.

Requirements

Communication — B.A. Degree

1. Complete the general university degree requirements and B.A. degree requirements, including one of the two Fundamentals of Oral Communication courses required in the Core Curriculum.

2. Complete the following requirements for the major:
   - COMM 180 — Introduction to Human Communication
   - COMM 280 — Communication and Diversity
   - COMM 330 — Intercultural Communication
   - COMM 351 — Gender Communication
   - COMM 401 — Communication Research Methods
   - COMM 425 — Communication Theory

3. Complete a minimum of 15 additional credits, selected from courses listed below, of which must be at the 300 or 400 level.

   300 Level:
   - COMM 320 — Communication and Language
   - COMM 321 — Nonverbal Communication
   - COMM 330** — Intercultural Communication
   - COMM 331 — Advanced Group Communication
   - COMM 335 — Organizational Communication
   - COMM 351** — Gender Communication
   - COMM 352 — Family Communication

   400 Level:
   - COMM 422 — Intercultural Communication
   - COMM 441 — Persuasion
   - COMM 462 — Communication in Health Contexts
   - COMM 475 — Applied Communication in Training and Development
   - COMM 482 — Seminar in Communication

   Minimum credits required: 120

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

**If not taken to fulfill requirement 2, above.

MINOR in Communication:

A minor in Communication requires the completion of 15 credits in Communication courses beyond the courses taken to satisfy the university oral communication requirement. These 15 credits must include COMM 180 and COMM 280 and at least 6 credits at the 300 level or higher. Courses designated as social science that are taken for the minor may also be used to fulfill social science distribution requirements for the B.A. degree.

Community Health

College of Rural Alaska Campuses
(907) 543-4540

Certificate: Degree: A.A.S

Minimum Requirements for Degree: 60 credits; for Certificate: 34 credits

CHA/P Training Centers
Anchorage CHA Training Program, ANMC (907) 257-1302
Norton Sound Health Corporation, Nome (907) 445-3404
Southeast Alaska Regional Health Corp., Skita (907) 966-2451
Yukon-Kuskokwim Health Corp., Bethel (907) 543-4471

The Community Health Aide/Practitioner (CHA/P) Training Program prepares residents to provide primary health care services in villages, under the supervision of a referral physician. CHA/P employment by a regional health corporation is a prerequisite for entering this unique training program. The educational program consists of four basic training sessions. Each training session is approximately four weeks long and is followed by field component in the CHA's village clinic. The curriculum includes the knowledge and skills necessary to provide acute care for common medical problems, emergency care, follow-up care for patients with chronic illnesses and preventive services including prenatal and well child care. The training also includes a state-
approved emergency care course, completion of a skills checklist, a supervised clinical preceptorship and passing the CHP statewide examination.

Upon successful completion of all certification requirements, a certificate as a Community Health Practitioner (CHP) is awarded by the training center. Students completing the training program also meet the requirements for a university certificate, recognizing the credits earned. These credits may be used to satisfy requirements for the Associate of Applied Science degree.

The curriculum and certification process is kept uniform throughout the state by a CHAP Academic Review Committee (ARC). This committee has represented from the regional health corporations, training centers and university. ARC reports to the Association of CHAP Program Directors and serves in an advisory role to the Dean of the College of Rural Alaska.

NOTE: For more information about the CHAP basic training program, please contact one of the CHA/Training centers. For more information about the A.A.S. degree, contact the Kuskokwim Campus, (907) 543-4540.

Requirements

Community Health — Certificate

Basic CHAP courses are:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 131 — Community Health Aide, Session I</td>
<td>8</td>
</tr>
<tr>
<td>CHP 132 — Community Health Aide, Session II</td>
<td>8</td>
</tr>
<tr>
<td>CHP 133 — Community Health Aide, Session III</td>
<td>8</td>
</tr>
<tr>
<td>CHP 134 — Community Health Aide, Session IV</td>
<td>8</td>
</tr>
<tr>
<td>CHP 135 — Community Health Aide, Preceptorship</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
</tr>
</tbody>
</table>

The above course sequence replaces the CHP 120 series listed in the UAF 1992-93 catalog. The course designator changes represents the addition of a Session IV and the integration of the field experience within each eight-credit session.

Prior to Session I the CHA may have an optional course when regionally available.

CHP 082 — Community Health Aide, Presession 1 | 2

Community Health — A.A.S. Degree

1. Complete the following general university and A.A.S. requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 111X or ENGL 211X, 212 or 213X</td>
<td>6</td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics or Natural Science:</td>
<td>15</td>
</tr>
<tr>
<td>A math or natural science course at the 100 level or above</td>
<td>3</td>
</tr>
<tr>
<td>Humanities, social sciences, mathematics, natural science or Perspectives on the Human Condition</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

2. Major Specialty Requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 131 — Community Health Aide, Session I</td>
<td>8</td>
</tr>
<tr>
<td>CHP 132 — Community Health Aide, Session II</td>
<td>8</td>
</tr>
<tr>
<td>CHP 133 — Community Health Aide, Session III</td>
<td>8</td>
</tr>
<tr>
<td>CHP 134 — Community Health Aide, Session IV</td>
<td>8</td>
</tr>
<tr>
<td>CHP 135 — Community Health Aide, Preceptorship</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
</tr>
</tbody>
</table>

Five or more credits from the following 200 level courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHP 203 — Clinical Update for CHPs (1-3)</td>
<td></td>
</tr>
<tr>
<td>CHP 206 — Mental Health/Substance Abuse (1-3)</td>
<td></td>
</tr>
<tr>
<td>CHP 207 — Maternal and Infant Health (1-3)</td>
<td></td>
</tr>
<tr>
<td>CHP 208 — Communicable Disease (1-3)</td>
<td></td>
</tr>
<tr>
<td>CHP 211 — Health Education (1-3)</td>
<td></td>
</tr>
<tr>
<td>CHP 212 — Diabetes: Primary Prevention and Village Care (1-3)</td>
<td></td>
</tr>
<tr>
<td>CHP 215 — Death and Dying (2)</td>
<td></td>
</tr>
<tr>
<td>CHP 293 — Special topic courses</td>
<td></td>
</tr>
<tr>
<td>EMS — any 200 level courses</td>
<td></td>
</tr>
<tr>
<td>HLTTH — any 200 level courses</td>
<td></td>
</tr>
<tr>
<td>Total credits</td>
<td>5</td>
</tr>
</tbody>
</table>

3. Electives

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
</tr>
</tbody>
</table>

Community Psychology

College of Liberal Arts

Department of Behavioral Sciences and Human Services (907) 474-7240

Degree: M.A.

Minimum Requirements for Degree: 48 credits

The M.A. program in community psychology seeks to train graduate level practitioners in mental health and community development who can work sensitively and effectively in cross-cultural community contexts, and particularly in Native settings in rural areas and urban settings with multicultural populations. The program attempts to meet the demand for trained mental health professionals in rural Alaska.

For complete information on the graduate program in community psychology, see the UAF Graduate Catalog.

Computer Applications

College of Rural Alaska
Tanana Valley Campus (907) 451-7223

Tanana Valley Campus Computer Applications Program (CAPS)

The purpose of the CAPS program is to teach current computer applications. Both Macintosh and Windows computer lab are available and classes are offered in current software including word processing, spreadsheets, graphics, CAD, databases, and desktop publishing.

All classes are taught using hands-on lessons and exercises and are offered for students with beginning to intermediate skills.

Students who are currently employed may take CAPS classes to improve their computer applications skills. Those who are unemployed may take these classes to develop the computer skills necessary for employment. All classes are limited to a capacity of 12 to 16 students per lab.

CAPS classes may apply to the Computer Application specialty of the Applied Business degree.

Computer Information Systems

School of Management

Department of Accounting and Information Systems (907) 474-7121

Minor only

The computer information systems minor is designed to permit students in bachelor of arts and bachelor of science degree programs to study a particular field of computer systems and to be introduced to a reasonable segment of information systems relating to the business enterprise.

Requirements

MINOR in Computer Information Systems

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 101 — Elementary Accounting I</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 102 — Elementary Accounting II</td>
<td>3</td>
</tr>
<tr>
<td>AIS 101 — Effective Personal Computer Use</td>
<td>3</td>
</tr>
<tr>
<td>AIS 312 — Information Systems Technology</td>
<td>3</td>
</tr>
<tr>
<td>AIS 316 — Accounting Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
</tr>
</tbody>
</table>

Computer Science

College of Liberal Arts

Department of Mathematical Sciences (907) 474-7332

Degrees: B.S., M.S.

Minimum Requirements: B.S.: 120 credits; M.S.: 30 additional credits

The computer science program is administered by the Department of Mathematical Sciences within the College of Liberal Arts. Computer science is the study of information handling and its application to the problems of the world. Computing is widely used in support of activities in science, engineering, business, law, medicine, education, and the social sciences. The potential for employment is one of the highest in the entire range of subjects spanned by the College of Liberal Arts.

Both the B.S. and M.S. degrees follow the recommendations of the Association for Computing Machinery (ACM) and the Institute for Electrical and Electronic Engineers (IEEE). The curriculum for the B.S. in computer science consists of a core of courses which introduces the student to the fundamentals of computer programming, hardware, theory, and applications. Mathematics and engineering play critical roles in the core. Throughout the curriculum the emphasis is on problem solving and applications of general
principles to real-world problems. A solid background in fundamentals enables the graduate not only to understand today's computers and their uses, but also to understand and participate in future developments.

Requirements

A student may declare a major in Computer Science only when she/he is ready to matriculate into MATH 200, Calculus I.

Computer Science — B.S. Degree
1. Complete the general university requirements and B.S. degree requirements. A portion of the Perspectives on the Human Condition requirement should be met with ethics (PHIL 322X). The mathematics requirement for the B.S. should be met with MATH 200X-201X. A portion of the science requirement for the B.S. should be met with a one year physics sequence, PHYS 103X-104X or PHYS 211X-212X.

2. Complete the following mathematics requirement:
   Credits: MATH 307 — Discrete Mathematical Structures .................. 3
   Credits: MATH 308 — Linear Algebra ........................................ 3
   Credits: MATH 310 — Numerical Analysis ................................. 3
   Credits: MATH 311 — Data Structures and Algorithms ................. 3
   Credits: MATH 312 — Operating System ................................... 3
   Credits: MATH 313 — Programming Languages .......................... 3
   Credits: MATH 314 — Linear Algebra ...................................... 3
   Credits: MATH 316 — Mathematical Statistics ........................... 3
   Credits: MATH 408 — Mathematical Statistics ........................... 3
   Credits: MATH 460 — Mathematical Modeling ............................ 3

3. Complete the following major requirements:
   Credits: CS 201 — Computer Programming ................................ 3
   Credits: CS 202 — Computer Programming ................................ 3
   Credits: CS 301 — Assembly Language Programming ................. 3
   Credits: CS 302 — Computer Programming II ............................ 3
   Credits: CS 311 — Data Structures and Algorithms .................... 3
   Credits: CS 312 — Operating System ..................................... 3
   Credits: CS 322 — Operating System ..................................... 3
   Credits: CS 331 — Programming Languages ............................ 3
   Credits: CS 402 — Senior Project and Professional Practice ......... 3
   Credits: CS 411 — Analysis of Algorithms ................................ 3
   Credits: CS 451 — Automata and Formal Languages ................... 3
   Credits: EE 341 — Computer Organization I ............................ 4
   Credits: EE 342 — Computer Organization II ............................ 4
   Credits: EE 343 — Computer Organization III ........................... 4
   Credits: EE 344 — Computer Organization IV ............................ 4
   Upper Division electives: either CS courses or approved electives such as AIS 310, EE 443, EE 454
   Total Credits Required ........................................................ 120

MINOR in Computer Science
   Credits: CS 201 — Computer Programming ................................ 3
   Credits: CS 202 — Computer Programming ................................ 3
   Credits: CS 301 — Assembly Language Programming ................... 3
   Credits: CS 302 — Computer Programming II ............................ 3
   Credits: CS 311 — Data Structures and Algorithms .................... 3
   Credits: CS 312 — Operating System ..................................... 3
   Credits: CS 322 — Operating System ..................................... 3
   Credits: CS 331 — Programming Languages ............................ 3
   Credits: CS 402 — Senior Project and Professional Practice ......... 3
   Credits: CS 411 — Analysis of Algorithms ................................ 3
   Credits: CS 451 — Automata and Formal Languages ................... 3
   Credits: EE 341 — Computer Organization I ............................ 4
   Credits: EE 342 — Computer Organization II ............................ 4
   Credits: EE 343 — Computer Organization III ........................... 4
   Credits: EE 344 — Computer Organization IV ............................ 4
   Credits: EE 345 — Computer Organization V ............................ 4
   Upper Division electives: either CS courses or approved electives such as AIS 310, EE 443, EE 454
   Total Credits Required ........................................................ 120

Computer Science — M.S. Degree
The intent of the M.S. degree in computer science is to provide breadth and depth in coursework and to culminate with a major unifying project. The program is accessible to students who have completed a B.S. in Computer Science at most institutions. Students from other fields who have completed a substantive portion of a Bachelor level computer science program may be admitted to the M.S. program. In such cases, undergraduate courses may be required to remedy deficiencies.

For complete information on the graduate program in computer science, see the UAF Graduate Catalog.

Cross-Cultural Communications

College of Liberal Arts
Cross-Cultural Communications Program
(907) 474-7181

Cross-cultural Communications is an innovative program designed to serve the needs of Alaska Native and rural students at UAF. Recognizing that the transition to university communication patterns presents challenges which vary in type as well as degree, depending on a student's cultural background, CCC offers several courses designed to capitalize on the similarities of experience brought to the University by Alaska Native and rural students. It enables such students to make the transition more quickly than might otherwise be the case.

CCC courses which are not listed under Cross-Cultural Communications designators may be found under Developmental Studies, English and Mathematics, where they can be recognized by -CC# and -CCC section "numbers."

Culinary Arts

College of Rural Alaska
Tanana Valley Campus
(907) 474-5074

Certificate; Degree: A.A.S.

Minimum Requirements for Certificate: 31 credits; for Degree: 67 credits

The Culinary Arts Program prepares students for a career in the expanding field of culinary arts. Graduates can seek employment in food production or in the management of restaurants, bakeries, hotels, hospitals, camps or any facility that requires food service as part of its operation. This department offers both an associate degree and certificate programs.

Requirements

Culinary Arts — A.A.S. Degree
1. Complete the following general university and A.A.S. requirements (all credits must be at the 100-level or above):
   Credits: ENGL 111X — Methods of Written Communication .............. 3
   Credits: ENGL 211X — Intermediate Exposition with Modes of Lit ........ 3
   or ENGL 212* — Business, Grant and Report Writing .......................... 3
   Credits: ENGL 213X — Intermediate Exposition ............................. 3
   or ENGL 141X — Fund. of Oral Comm: Group Context ...................... 3
   or COMM 131X — Fund. of Oral Comm: Public Context .................... 3
   or Mathematics or Natural Science:
   Credits: A math or science course at the 100 level or above ........................ 3
   Credits: Humanities, social sciences, mathematics, natural science or Perspective on the Human Condition ................................. 3

2. Complete the following major degree requirements:
   Credits: CAH 105 — Principles of Food Service ............................ 3
   Credits: CAH 140 — Food Production I ..................................... 5
   Credits: CAH 145 — Bakery Production I .................................... 5
   Credits: CAH 146 — Bakery Production II ................................... 5
   Credits: CAH 150 — Food Service Sanitation ............................... 1
   Credits: CAH 152 — Supervisory Skills ..................................... 2
   Credits: CAH 242 — Food Production III .................................... 5
   Credits: CAH 243 — Food Production IV .................................... 5
   Credits: CAH 247 — Bakery Production III ................................... 5
   Credits: CAH 248 — Bakery Production IV ................................... 5
   Credits: CAH 250 — Garde Manger ........................................... 2
   Credits: CAH 253 — Storeroom Purchasing and Receiving ................... 2
   Credits: CAH 255 — Food Service Management ............................ 2
   Subtotal ................................................................. 52
   Degree Total .......................................................... 67

* ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

Culinary Arts Certificate

Suggested Course Sequence:

First Semester .............................................................. 15 Credits
   Credits: CAH 105 — Principles of Food Service ......................... 3
   Credits: CAH 140 — Food Production I ..................................... 5
   Credits: CAH 145 — Bakery Production I .................................... 5
   Credits: CAH 150 — Food Service Sanitation ............................... 1
   Credits: CAH 161 — Pastry Tube Art ....................................... 1
   Credits: CAH 141 — Food Production II .................................... 5
   Credits: CAH 146 — Bakery Production II ................................... 5
   Credits: CAH 152 — Supervisory Skills ..................................... 2
   Credits: CAH 256 — Food Service Accounting ............................ 2
   Credits: Culinary Specialty Electives ....................................... 2
   Certificate Total .......................................................... 31

Culinary Arts Certificate — Baking

Suggested Course Sequence:

First Semester .............................................................. 15 Credits
   Credits: CAH 105 — Principles of Food Service ......................... 3
   Credits: CAH 140 — Food Production I ..................................... 5
   Credits: CAH 145 — Bakery Production I .................................... 5
   Credits: CAH 150 — Food Service Sanitation ............................... 1
   Credits: CAH 161 — Pastry Tube Art ....................................... 1
   Credits: CAH 141 — Food Production II .................................... 5
   Credits: CAH 146 — Bakery Production II ................................... 5
   Credits: CAH 152 — Supervisory Skills ..................................... 2
   Credits: CAH 256 — Food Service Accounting ............................ 2
   Credits: Culinary Specialty Electives ....................................... 2
   Certificate Total .......................................................... 31
**Deans and Programs / 63**

CAH 152 — Supervisory Skills ........................................... 2
CAH 247 — Bakery Production III ...................................... 5
CAH 256 — Food Service Accounting ..................................... 2
Culinary Specialty Electives ............................................. 2
Certificate Total ............................................................ 31

Culinary Arts Certificate — Cooking
Suggested Course Sequence:
First Semester .......................................................... 15 Credits
CAH 105 — Principles of Food Service ................................ 3
CAH 140 — Food Production I ........................................... 2
CAH 137 — Food Production II ........................................... 3
CAH 144 — Food Production III ......................................... 2
CAH 150 — Food Service Sanitation ..................................... 1
CAH 161 — Pastry Tube Art ............................................. 1
Second Semester ........................................................ 16 Credits
CAH 141 — Food Production II .......................................... 3
CAH 152 — Supervisory Skills .......................................... 2
CAH 242 — Food Production III ......................................... 2
CAH 256 — Food Service Accounting ................................... 2
Culinary Specialty Electives ............................................. 2
Certificate Total ............................................................ 31

Major Specialty Electives for Certificate Programs
CAH 116 — Beginning Cake Decorating ................................ 1
CAH 117 — Intermediate Cake Decorating ............................. 1
CAH 154 — Dining Room Service ........................................ 2
CAH 160 — Principles of Nutrition ...................................... 2
CAH 170 — Gourmet Cooking ............................................ 2
CAH 171 — Gourmet Baking .............................................. 2
CAH 172 — Gourmet Asian/Oriental Cooking ......................... 2
CAH 175 — Introduction to Meat Cutting ............................... 2
CAH 257 — Oenology Hospitality I ...................................... 1
CAH 258 — Oenology Hospitality II ..................................... 1

**Dentistry**

Pre-Professional Advising (907) 474-6396

Dentistry concerns itself with the prevention, diagnosis and treatment of oral disease and disorders. Professional dental study typically involves a four-year program of graduate study combining classroom instruction, lab work, and hands-on patient treatment. Students can also go on to specialize within the dental field by pursuing advanced training at the post-doctoral level. Both specialists and general dentists are required to be state licensed before practicing.

While a definitive pre-dentistry curriculum is not required for admission into dental school, it is recommended that students include specific courses as part of their undergraduate studies. At UAF, these courses are chemistry (CHEM 103X and 104X or 105X and 106X), organic chemistry (CHEM 301 and 302), biology (BIO 105X and 106X), anatomy and physiology (BIO 111 and 112), and physics (PHYS 102X and 111X). Dental schools also expect students to have a broad general background in the social sciences and humanities. While some dental schools will accept students after they have completed three years of undergraduate work, the majority of students entering dental school have already completed a bachelor's degree. A strong academic record at the undergraduate level, as well as high scores on the Dental Admission Test (DAT), are desirable for admission.

Students whose career goal is dentistry, or who are considering this career choice, should contact the Academic Advising Center to be assigned an academic advisor. Program advisement, exploration of professional schools and licensing requirements, and financial planning are available to meet the needs of students in fulfilling their career aspirations.

**Diesel / Heavy Equipment Mechanics**

College of Rural Alaska
Tanana Valley Campus (907) 474-5082

Certificate
Minimum Requirements for Certificate: 34 credits

The diesel and heavy equipment mechanics program offers the student training in the maintenance and repair of trucks, buses and heavy equipment. This one-year certificate program emphasizes "hands-on" training and in-class experience as students perform preventive maintenance inspections, determine causes of equipment problems and make necessary repairs and adjustment from tune-ups to complete engine and equipment overhauls. Students work on large truck fuel, electrical and air systems, diesel engines, transmissions, differentials, and crawler tractor undercarriages, steering and final drives. Class size is limited to 16 students to encourage instructor-student interaction and allow for individualized assistance. An applied math proficiency exam must be passed to complete certificate requirements. A student may request credit by examination for any DSLT or MECH course. See the department for details.

**Requirements**

**Diesel/Heavy Equipment Mechanics — Certificate**

Suggested Course Sequence

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>DRT 101 — Beginning Drafting I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>DRT 121 — Building Trades Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DRT 170 — Beginning AutoCad</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 107 — Elementary Functions</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>DRT 102 — Beginning Drafting II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DRT 270 — Advanced AutoCad</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 108 — Trigonometry</td>
<td>2</td>
</tr>
</tbody>
</table>

For all Drafting Certificates: Take one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMT 131 — Business English</td>
<td>3</td>
</tr>
<tr>
<td>OMT 231 — Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 212 — Business, Grant, and Report Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

For Architectural Certificate complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 140 — Architectural Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DRT 151 — Civil Concepts</td>
<td>2</td>
</tr>
</tbody>
</table>

For Civil Certificate complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 141 — Architectural Concepts</td>
<td>2</td>
</tr>
<tr>
<td>DRT 150 — Civil Drafting</td>
<td>4</td>
</tr>
</tbody>
</table>

For Architectural and Civil Certificate complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 140 — Architectural Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DRT 150 — Civil Drafting</td>
<td>4</td>
</tr>
</tbody>
</table>

Complete a minimum of three credits from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 115 — Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>DRT 123 — Uniform Building code</td>
<td>3</td>
</tr>
</tbody>
</table>

**Drafting Technology**

College of Rural Alaska
Tanana Valley Campus (907) 474-5264

Certificate

Minimum Requirements Certificate: 33 credits

Three options in the drafting technology certificate program are offered: architectural drafting, civil drafting, and architectural and civil drafting. The architectural certificate or the civil certificate are 33 credits, while an architectural and civil certificate requires 35 credits.

The courses combine the technical know-how and "hands-on" experience necessary for work in a variety of drafting fields. Students work side-by-side with professionals from the architectural and engineering community, gaining valuable on-the-job experience. In the classroom, students develop skills in mathematics, drawing and lettering, architectural concepts and design and construction techniques, utilizing both conventional drawing techniques and computer-aided drafting.

A student may request credit by examination for any DRT class.

**Requirements**

**Drafting Technology — Certificate**

Requirements for All Certificates (Architectural, Civil, or Architectural and Civil):

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>DRT 101 — Beginning Drafting I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>DRT 121 — Building Trades Blueprint Reading</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DRT 170 — Beginning AutoCad</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 107 — Elementary Functions</td>
<td>3</td>
</tr>
<tr>
<td>Spring</td>
<td>DRT 102 — Beginning Drafting II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DRT 270 — Advanced AutoCad</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MATH 108 — Trigonometry</td>
<td>2</td>
</tr>
</tbody>
</table>

For all Drafting Certificates: Take one of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OMT 131 — Business English</td>
<td>3</td>
</tr>
<tr>
<td>OMT 231 — Business Communications</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 212 — Business, Grant, and Report Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

For Architectural Certificate complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 140 — Architectural Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DRT 151 — Civil Concepts</td>
<td>2</td>
</tr>
</tbody>
</table>

For Civil Certificate complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 141 — Architectural Concepts</td>
<td>2</td>
</tr>
<tr>
<td>DRT 150 — Civil Drafting</td>
<td>4</td>
</tr>
</tbody>
</table>

For Architectural and Civil Certificate complete:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 140 — Architectural Drafting</td>
<td>4</td>
</tr>
<tr>
<td>DRT 150 — Civil Drafting</td>
<td>4</td>
</tr>
</tbody>
</table>

Complete a minimum of three credits from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 115 — Graphics I</td>
<td>3</td>
</tr>
<tr>
<td>DRT 123 — Uniform Building code</td>
<td>3</td>
</tr>
</tbody>
</table>
Early Childhood Development

<table>
<thead>
<tr>
<th>College of Rural Alaska</th>
<th>Tanana Valley Campus</th>
<th>(907) 474-5240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate: Degree: A.A.S.</td>
<td>Minimum Requirements for Degree: 60 credits</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Development — A.A.S. Degree</td>
<td>The A.A.S. degree in early childhood development prepares students to find employment or to improve present job skills in early childhood and childcare programs. Positions in child care centers, head start programs, early childhood education programs, child welfare service agencies and public school aid programs are potential career directions for program graduates. The A.A.S. degree in early childhood development also leads to state certification as an Early Childhood Education Associate II. A certificate program (30 credits) in early childhood development is also available.</td>
<td></td>
</tr>
<tr>
<td>Requirements</td>
<td>Early Childhood Development — A.A.S. Degree</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Development — A.A.S. Degree</td>
<td>1. Complete the following general university and A.A.S. requirements:</td>
<td>Credits</td>
</tr>
<tr>
<td>ENGL 111X and ENGL 211X, 212*, or 213X</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Math at the 100 level or above</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Natural science**</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Humanities**</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSY 101 — Introduction to Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2. Complete the following major degree requirements:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECHD 245 — Child Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 100 — Introduction to Early Childhood</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 110 — Practical Paths to Discipline and Guidance</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 120 — Child Nutrition, Health and Safety</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 131 — Group Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 135 — Infant/Toddler Care</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ECHD 250 — Practicum I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 251 — Practicum II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 255 — Curriculum and Activities for Young Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 260 — Introduction to the Exceptional Child or ECHD 261 — Mainstreaming Exceptional Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 265 — Culture Learning and the Young Child</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>SOC 242 — The Family</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3. Complete 9 credits of general electives</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Degree Total</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Recommended Electives: Any ECHD catalog or special topics (ECHD 193 or 293) courses and others which have been approved by the ECHD adviser. *ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree. **Courses should be selected that meet general degree requirements for baccalaureate degrees.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early Childhood Development — Certificate</td>
<td>1. Complete the following required courses</td>
<td>Credits</td>
</tr>
<tr>
<td>ENGL 111X — Methods of Written Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PSY 101 — Introduction to Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 245 — Child Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 100 — Introduction to Early Childhood Development</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 110 — Practical Paths to Discipline and Guidance</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 120 — Child Nutrition, Health and Safety</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 131 — Group Management</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 135 — Infant/Toddler Care</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>ECHD 250 — Practicum I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 251 — Practicum II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 255 — Curriculum and Activities for Young Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 260 — Introduction to the Exceptional Child or ECHD 261 — Mainstreaming Exceptional Children</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECHD 265 — Culture Learning and the Young Child</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>SOC 242 — The Family</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2. Math competency: Student must demonstrate a level of competence in math equivalent to DEV M 050. Requirement may be satisfied by math placement exam score above DEV M 050 level or by earning a grade of 'B' or above in DEV M 050 class.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Complete 5 credits of general electives.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certificate Total</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

Early Childhood Education

<table>
<thead>
<tr>
<th>College of Rural Alaska</th>
<th>Bristol Bay Campus</th>
<th>(907) 842-5109</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior Campus</td>
<td>Kuskokwim Campus</td>
<td>(907) 543-4500</td>
</tr>
<tr>
<td>Degree: A.A.S.</td>
<td>Minimum Requirements for Degree: 60 credits</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Education — A.A.S. Degree</td>
<td>The associate of applied science degree in early childhood education is the second step on the early childhood career ladder, which begins with the nationally recognized Child Development Associate (CDA) credential. A CDA credential is valid proof of the holder's ability to work effectively with a group of children from three to five years old and serves as a seal of approval from the early childhood profession. The CDA student can receive competency based on-the-job training with the preschool classroom serving as a lab program which comprises the six competencies of the CDA credential. Students who desire a broader based education with future possibilities of working in a para-professional position or of continuing on to a baccalaureate degree will want to pursue the associate of applied science degree in early childhood education.</td>
<td></td>
</tr>
<tr>
<td>Requirements</td>
<td>Early Childhood Education — A.A.S. Degree</td>
<td></td>
</tr>
<tr>
<td>Early Childhood Education — A.A.S. Degree</td>
<td>1. Complete the following general university and A.A.S. requirements:</td>
<td>Credits</td>
</tr>
<tr>
<td>Communications:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGL 111X and ENGL 211X or 213X</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Mathematics:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math at the 100 level or above</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Humanities, social sciences, mathematics, natural science or Perspective on the Human Condition</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2. Complete the following major specialty requirements:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECDD 111 — A Safe Environment</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 112 — A Healthy Learning Environment</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 113 — Learning Environment</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 121 — Physical Activities for Young Children</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 122 — Cognitive Activities for Young Children</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 123 — Communication Activities</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 124 — Creative Activities for Young Children</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 131 — Guidance and Discipline</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 132 — Social Development for the Young Child</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 145 — Nutrition</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 211 — Developing Positive Self-Concepts in Children</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 212 — Developing Individual Strengths in Children</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 221 — Positive Home-Center Relationships</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 222 — Program Management</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 223 — Professionalism</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 289 — Final Assessment for Child Development Associate Credential</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ECDD 299 — Practicum in Early Childhood Education</td>
<td>2-3</td>
<td></td>
</tr>
<tr>
<td>SOC 242 — The Family: A Cross-Cultural Perspective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Any HMSV/HST course approved by advisor</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECDD 100 — Introduction to Early Childhood Education</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECDD or ED electives by permission of instructors</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>3. Complete 11 credits of general electives.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td></td>
</tr>
</tbody>
</table>

Note: Students in ECDD courses must spend 32 hours per credit in an approved early childhood center.
Earth Science

College of Natural Sciences
Department of Geology and Geophysics
(907) 474-7565

Degree: B.A.

Minimum Requirements for Degree: 130 credits

This program provides broad training in various aspects of earth science. It is especially applicable to those wishing to teach earth science or who are entering a field such as resource management where broad training in earth science is important. Basic course work is required in three program areas: geology, geology and mineral engineering. Additional required course work is arranged in consultation with the individual program heads. Students wishing to enroll in this degree program should contact the head of the Department of Geology and Geophysics.

Requirements

Earth Science — B.A. Degree
1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following fundamental courses:
   A. Complete one year of college-level mathematics
   B. Complete CHEM 103X and 104X or PHYS 103X and 104X
   C. Complete one semester of computer science approved by major subject emphasis program head.
   (NOTE: A. and B. may be used to meet general degree requirements, but C. is in addition to the 6 credit mathematics core and B.A. degree requirements.)
3. For the major complex, complete 19 credits in the following courses (labs are optional but it is strongly recommended they be taken if offered): GEOG 205, 309 or 339, and 402; GEOS 101 or GE 261, and 112; MIN 101 and 103. In addition, complete an additional approved 10 credits at the 300 level or above with emphasis in either geography, geology and geophysics, or mineral engineering. Approval will be by the appropriate program head in the field of emphasis.
4. Complete an additional 12 credits of the following or approved alternative courses (can also be used to meet basic degree requirements and to apply toward minor requirements): NRM 101, 204, 310, 380, 430; BIOL 103 or 105-106, 271; GEOL 301, 482; GEOS 213, 214, 304, 401, 408, 422; MIN 202; PETE 103; GE 471. If these 12 credits are listed for the minor, they must be in a different field than the major.
5. Complete approved electives including minor requirements to bring total credits to 130.

Economics

School of Management
Department of Economics
(907) 474-7119

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

Minimum Requirements for Degrees: B.A.: 120 Credits; B.B.A.: 123 Credits

Economics is the study of those social activities which are concerned with the production, distribution, and consumption of goods and services. In today’s complex world, nearly all social phenomena and problems have economic aspects. Organized knowledge of the functioning of our economy and its relations with other economic systems is therefore essential to an understanding of the world in which we live.

The Department considers the goal of its undergraduate instruction to be threefold: (1) to provide students with basic tools of analysis, and factual, statistical, and descriptive materials which will assist them in discharging their duties as citizens; (2) to introduce students majoring in this department to the various fields of economics in order to prepare them for positions in business, government, and graduate study; and (3) to offer a course of study suitable for a minor in economics.

The Department of Economics offers work leading to the master of science degree in resource economics. The graduate program in economics is designed to develop economists for research and administrative positions in business, governmental agencies and other organizations. Graduate courses and seminars are offered in economic theory, econometrics, mathematical economics and resource economics.

All B.B.A. majors must earn a "C" or better in all Common Body of Knowledge courses, department specific general requirements, major specific requirements, and specific math and statistics requirements.

Admission to 300 or 400 level School of Management courses will be granted only to students with upper division standing. Others will be admitted only with the written permission of the appropriate department head. Students enrolling in School of Management courses are expected to have completed the necessary prerequisites for each course. A $25.00 per semester student computing facility user fee will be assessed for any student taking one or more School of Management courses. This fee is in addition to any lab/material fees. B.B.A. students must, during their first 30 hours, attain computer literacy by either testing or earning a "C" or better in a basic computer literacy course.

Requirements

Economics — B.A. Degree
1. Complete general university requirements and B.A. degree requirements. (Complete MATH 262X to meet the mathematics requirement for the core.)
2. Complete the following program requirements:
   - Foundation courses that meet B.A. degree requirements:
     ECON 200 — Principles of Economics ......................................................... 4
     MATH 161 — Algebra for Business and Economics ...................................... 3
     Political Science elective ........................................................................... 3
   - Other foundation courses:
     ACCT 101 — Elementary Accounting ....................................................... 3
     STAT 200 — Elementary Statistics .............................................................. 3
   - Complete 30 additional credits in Economics including: ECON 227 — Intermediate Statistics for Economics and Business ......................... 3
   - ECON 321 — Intermediate Microeconomics .............................................. 3
   - ECON 324 — Intermediate Macroeconomics ............................................ 3
   - ECON 463 — International Economics ..................................................... 3
   - Economics electives: .............................................................................. 18
   (Must be 300-level or higher. 6 credits of the following courses may be included: BA 325, 343, 360, 423, 461. At least 6 credits of electives must be in courses designated as writing intensive (W) courses.)

Minimum credits required ........................................................................... 120

All majors must earn a "C" or better in all Common Body of Knowledge courses, department specific general requirements, major specific requirements, and specific math and statistics requirements.

Economics — B.B.A. Degree
1. Complete the general university and B.B.A. degree requirements.
2. Complete the following Common Body of Knowledge (CBK) (31-34 credits):
   - ACCT 101 and 102 — Elementary Accounting ........................................ 6
   - AIS 101 — Effective Personal Computer Use or demonstrated computer literacy ................................................................. 0-3
   - AIS 310 — Intro. to Management Information Systems or AIS 316 — Accounting Information Systems ............................................ 3
   - BA 325 — Financial Management ............................................................ 3
   - BA 330 — Legal Environment of Business ............................................. 3
   - BA 343 — Principles of Marketing ........................................................... 3
   - BA 360 — Operations Management .......................................................... 3
   - BA 390 — Organizational Behavior .......................................................... 3
   - BA 462 — Corporate Strategy ................................................................ 3
   - ECON 324 — Intermediate Macroeconomics or ECON 350 — Money and Banking ................................................................. 3
3. Complete the following major complex requirements:
   - Political Science elective ..................................................................... 3
   - ECON 321 — Intermediate Microeconomics ........................................... 3
   - ECON 324 — Intermediate Macroeconomics (if not taken in CBK) ...... 3
   - ECON 463 — International Economics ................................................. 3
   - Economics electives: ............................................................................ 15-18
   (Only 15 credits of economics electives are required if ECON 350 is taken as part of the CBK. At least 6 credits must be taken in courses designated as writing intensive courses.)
4. Complete a minor complex (optional) or 20-21 free electives. (At least 10 credits must be outside the School of Management with the exception of introductory computer literacy credits. The minor may not be from the School of Management.)

Minimum credits required ........................................................................ 123

NOTE: The B.B.A. degree requires 50% of the accounting, business administration and economics credits to be earned in residence at the University of Alaska Fairbanks.
MINOR in Economics:
All minor programs must be approved by the head of the Economics Department. A minor in Economics requires:
ECON 200 — Principles of Economics ........................................ 4
12 credits in approved economics courses at the 300 level or above ........................................ 12
Total ........................................ 16

Education
College of Liberal Arts
School of Education (907) 474-7341
Minimum Requirements for Degrees: B.Ed.: minimum of 130 credits; M.Ed.: minimum of 36 additional credits, Ed.D.: 36 credits beyond master’s degree and 60 credits beyond baccalaureate; Post Baccalaureate: Elementary certification — minimum of 45 credits; Secondary certification and K-12 certification — minimum of 33 credits

I. CERTIFICATION AND ACCREDITATION INFORMATION
Teaching certificates are issued by the State of Alaska Department of Education. Students who successfully complete a UAF Education program including student teaching will meet the current academic requirements for Alaska certification. Students interested in teaching in a state other than Alaska should consult the certification department for that state to obtain specific certification requirements.

All UAF education programs are accredited by the National Council for Accreditation of Teacher Education (NCATE), and follow the standards for NCATE review. These programs are also approved by the State of Alaska Department of Education.

Students may contact the Office of Certification and Advising in the UAF School of Education or the X-CED faculty at the nearest campus for additional information and support.

II. ADMISSION TO TEACHER EDUCATION
In addition to being accepted by the University, all students wishing to be certified must also formally apply for admission to the Fairbanks elementary education program or secondary Teachers for Alaska program offered on the Fairbanks campus, or the Cross Cultural Education Development (X-CED) elementary or secondary education programs offered on the rural campuses. Admission requirements for these programs may be found on the following pages. Continuation in these programs is based upon the maintenance of satisfactory performance in all areas of the program. A student who fails student teaching will be exited from the program, and further involvement is dependent upon a reapplication process. See the Coordinator of the Office of Practica Experience regarding this procedure.

III. EDUCATION PROGRAMS
Education programs at the University of Alaska Fairbanks have the responsibility for preparing highly qualified professionals in education who are prepared to teach in both urban and rural Alaska, and to work with multicultural and minority students, especially Alaska Native students. These education programs are offered through two delivery systems: resident programs at the Fairbanks campus, and distance education programs through the Cross Cultural Education Development Program (X-CED) at the following rural campus areas: Barrow (Arctic Sivummi Ilisivigvik, Bethel (Kuskokwim), Dillingham (Bristol Bay), Interior Campus, Kotzebue (Chukchi), and Nome (Northwest).

A. Fairbanks Campus Resident Program:
Offered at the Fairbanks campus are resident programs leading to both elementary and secondary teaching certificates. These programs are designed for full-time students, although part-time students are accommodated when possible. The professional year, the last year in the program, is an intensive compressed integrated curriculum that incorporates university classwork with practicum experiences and culminates in student teaching. It requires a full-time commitment since students are placed in the school for methods’ practicum experiences and student teaching.

Available at the Fairbanks campus are a Bachelor of Education degree program in elementary education, an elementary education minor with certification, an elementary education minor without certification, a general education minor, a post-baccalaureate elementary education program (a minimum of the elementary minor), and a secondary certification program (the Teachers for Alaska Program). A Bachelor of Education degree in secondary education is no longer available at the Fairbanks campus. A student wishing to be certified for secondary teaching must complete the bachelor’s degree requirements, including all requirements for a certifiable major, before entering the Teachers for Alaska program.

B. Rural Campuses Cross-Cultural Education Development Program (X-CED)
The X-CED program is the teacher education program offered through the University of Alaska Fairbanks’ rural campuses to serve the unique educational needs of Alaska’s village residents. Full-time education faculty members are responsible for coordinating program activities within each region through the regional campuses. The X-CED program offers full-time undergraduate coursework for students seeking a B.Ed. degree in either elementary or secondary education. Available degree majors, minors and concentration areas are limited by faculty resources. Priority for enrollment in field-based courses is given to students formally admitted to the program, but are available to other students on a space-available basis and with permission of the instructor. Applicants for admission to the program are reviewed and recommended by regional panels.

In addition, the X-CED program provides supplemental services including workshops, technical assistance and other support services as time and resources permit. All inquiries should be addressed to the program coordinator’s office at each campus, or the Program Head, X-CED, School of Education, Fairbanks campus.

IV. ELEMENTARY EDUCATION PROGRAMS
To be recommended for an elementary teaching certificate, a student must complete the requirements of one of the following three options: A) B.Ed. in Elementary Education, B) Minor in Elementary Education with certification, or C) Post-Baccalaureate Certification in Elementary Education. All three options are available both at the Fairbanks campus and through the X-CED program. Students admitted to either the Fairbanks Teacher Education program or the X-CED program may transfer between programs without reapplying for admission. However, it is important to note that the programs have different requirements, placement procedures, and timetables. The Office of Certification and Advising will assist transferring students.

Students graduating under earlier catalog requirements will substitute ED 410, 411, 412, and 413 for the past required courses ED 381, 419 and 421.

Requirements
A. Elementary Education — B.Ed. Degree
1. Complete general University requirements.
2. Complete the following degree and program (major) requirements:
   Credits
   a. Humanities (9 credits)
      LING 101 — Nature of Language ........................................ 3
      Electives ........................................................................... 6
   b. Social Sciences (9 credits)
      ANTH 242 — Native Cultures of Alaska .................................. 3
      PSY 101 — Introduction to Psychology .................................... 3
      PSY 240 — Devel. Psychology in Cultural Perspective ............ 3
   c. Mathematics (6 credits)
      MATH 205 — Math. for Elementary School Teachers I ............ 3
      MATH 206 — Math. for Elementary School Teachers II ............ 3
   d. Complete one of the concentrations listed below:
      Each concentration must have a minimum of 12 upper division credits (except Early Childhood). Core requirements (except Communication requirements) may be counted toward these concentrations.
      1. Humanities (30 credits)
         At least 12 credits concentrated in Art, or English, or Music
      2. Social Science (30 credits)
         At least 12 credits concentrated in one discipline
      3. Mathematics and/or Science (29 credits)
         At least 12 credits concentrated in one discipline
      4. ESL/Applied Linguistics (21 credits)
         ENGL 318 — Modern English Grammar ................................ 3
         ENGL 462 — Applied English Linguistics ............................... 3
         ANS 320 — Language and Ethnicity ....................................... 3
         Credits in a language ......................................................... 6
         Approved linguistics courses (25 credits)
         Credits in one Alaska Native Language (25-27 credits)
         ANL 287-288 — Teaching Methods/Curriculum and Materials Development .................................................. 6
         ANL 215 or 216 — Alaska Native Languages .......................... 3
         5. Early Childhood Development (18 credits)
         12 credits of approved Early Childhood Development courses
         plus 6 upper division credits from one of the following:


c. Education - complete the following:
Foundation/Theory Courses
ED 201 — Introduction to Education ........................................... 3
ED 330 — Diagnosis and Evaluation of Learning .......................... 3
ED 350 — Communications in Cross-Cultural Classrooms .......... 3
ED 375 — The Exceptional Learner .............................................. 3
Education Foundation Elective (ED 345, 346, 380, 440, 450, 422, or
ANS 420) .................................................................................... 3
Physical Education Elective (PE 316, 317 or 327) .............. 2 or 3
ED 304 — Literature for Children ................................................. 3
Art Education Elective (ED 309, 310) ........................................... 3
Methods Block Courses
ED 410 — Foundations of Literacy Development ....................... 3
ED 411 — Strat. for Reading/Writing Instr. in Multicult.
Classrooms ................................................................................... 3
ED 412 — Lang. Arts and Social Studies: Methods and
Curric. Dev. .................................................................................. 3
ED 413 — Math. and Science: Methods and Curric. Dev. ............ 3
Student Teaching
ED 452 — Elementary Student Teaching ...................................... 12
(Candidates who have successfully taught full-time in self-
contained elementary classrooms may request a reduced student
Teaching experience. Contact the Office of Practice Experience for
further information.)
Minimum credits required .......................................................... 130

B. MINOR in Education — With or Without Teacher Credential
Endorsement
Majors in other departments who wish to obtain an Elementary Certificate
should contact the UAF School of Education to obtain course requirements
and application procedures for admission to the Teacher Education Program.
Students must have completed the necessary prerequisites and have been admitted
to the Teacher Education Program prior to acceptance for placement in methods
courses and student teaching. Students may have a minor in education without
student teaching, but they must complete student teaching if they wish to meet
certification requirements for teaching.

MINOR in Elementary Education (WITH credential endorsement):

<table>
<thead>
<tr>
<th>Foundation/Theory Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 240 — Developmental Psychology in Cross-Cultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>ED 201 — Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 304 — Literature for Children</td>
<td>3</td>
</tr>
<tr>
<td>ED 330 — Diagnosis and Evaluation of Learning</td>
<td>3</td>
</tr>
<tr>
<td>ED 375 — The Exceptional Learner</td>
<td>3</td>
</tr>
<tr>
<td>Education Foundation Elective (ED 345, 346, 380, 422, 440, or ANS 420)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 205 — Mathematics for Elementary School Teachers I</td>
<td>3</td>
</tr>
<tr>
<td>MATH Elective (100-level or above)</td>
<td>3</td>
</tr>
<tr>
<td>Methods Block Courses</td>
<td></td>
</tr>
<tr>
<td>ED 410 — Foundations of Literacy Development</td>
<td>3</td>
</tr>
<tr>
<td>ED 411 — Strat. for Reading/Writing Instr. in Multicultural Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>ED 412 — Lang. Arts and Social Studies: Methods and Curriculum Development</td>
<td>3</td>
</tr>
<tr>
<td>ED 413 — Math. and Science: Methods and Curric. Dev.</td>
<td>3</td>
</tr>
<tr>
<td>Student Teaching</td>
<td></td>
</tr>
<tr>
<td>ED 452 — Elementary Student Teaching</td>
<td>12</td>
</tr>
</tbody>
</table>

MINOR in Elementary Education (WITHOUT credential endorsement):
Complete the Elementary Education minor requirements excluding ED
452 — Elementary Student Teaching.

C. Post-Baccalaureate Elementary Certification Program
Post-baccalaureate students who wish to obtain an Elementary Certificate
should contact the UAF School of Education to obtain course requirements and
application procedures for admission to the Teacher Education Program. Students
must have completed the necessary prerequisites and have been admitted
to the Teacher Education Program prior to acceptance for placement in methods
courses and student teaching.
Cost requirements are the same as those for Elementary Education Minor
with Certification.

ADMISSION REQUIREMENTS - ELEMENTARY
The Elementary Education Program is a selective teacher education
Program. In order to obtain an elementary teaching certificate, all students (B.Ed.
majors, elementary education minors, and post-baccalaureate) must not only complete one of the three above options, they also must apply and be admitted to the Elementary Teacher Education Program. Admission to UAF as a degree student majoring in education does not automatically qualify a student for admission to the Elementary Teacher Education Program. Admission to the program is based on a comprehensive system that includes more than one measure and is used by the education faculty to assess the personal characteristics, communications, and basic skills proficiency of candidates preparing to teach.

Once in the program, there is ongoing professional assessment with two formal reviews which monitor the progress of elementary education students from admission through completion of their professional education program. One review is prior to entry to the professional year (which begins with the methods block), and one prior to student teaching. These reviews include an evaluation of grades, observations, faculty recommendations, demonstrated competence in academic work, and recommendations from the appropriate professionals in the schools. Consistent procedures and relevant criteria are used to determine eligibility for student teaching. Systematic approaches are used to assist education students who are making unsatisfactory progress in this program. Specific admission procedures and criteria for each of these three steps for the Fairbanks and X-ED programs are described in the following sections.

Fairbanks Campus Program - Elementary
1. Admission to elementary education program (B.Ed. major, elementary
education minor, and certification)
In order to be considered for admission to the elementary education
program, students must:
a. Submit a complete application, including all required transcripts
and references, in accordance with deadlines.
b. Complete a minimum of 45 semester credits, (up to 30 transfer
credits may be used).
c. Students will be chosen for the program based on the following
multiple measures which will be weighed and assessed by
various means, including but not limited to faculty rating
forms, letters of reference, university transcripts, writing
samples, and evaluations from University-sponsored practi
cum placements. The range and balance in these four areas will
be considered in a review by the faculty. Questions faculty will
ask in this review include: does the student have:
1) a solid academic background (a minimum cumulative
GPA of 2.7),
2) interpersonal, intercultural, and communication skills,
3) successful experience in one or more of the following
contexts:
   a. preschool or public school classrooms,
   b. other settings with children,
   c. rural Alaska,
   d. culturally diverse settings, and
4) practical skills and life experiences
2. Review criteria for entry to elementary education professional year
(methods block and student teaching)
a. Acceptance to the elementary education program.
b. Placement information form on file with Elementary Educa-
tion Office by October 1 to begin the professional year during
the spring semester or by February 15 to begin the professional
year during the fall semester. Students are admitted for
a specific semester and must reapply if their schedule changes.
c. Completion of 100 credits leading to a bachelor’s degree.
d. Completion of all required education courses (except ED 410,
411, 412, and 413) and all required math courses, with a
minimum grade of “C” in education and math courses and a
minimum cumulative GPA of 2.7.
e. Approval of Elementary Education Committee to enter the
professional year.
A maximum of 15 credits per semester is recommended while
enrolled in the professional year.
3. Review criteria for entry to elementary education student teaching
a. Successful completion of Methods Block.
b. Placement information for student teaching on file with the
Office of Practica Experience by October 1 for student teaching
in the spring semester or by February 15 for student teaching in
the fall semester.
c. A completed physical examination.
d. Approval of faculty to enter student teaching.
Students who feel they have experience comparable to student
teaching may petition to have the requirement reduced or
waived. See the Coordinator of the Office of Practica Experi-
ence regarding this procedure.
Rural placements for student teaching are also available. Con-
tact the Office of Practica Experience for further information.
### V. SECONDARY EDUCATION PROGRAMS

To be recommended for a secondary teaching certificate, a student must complete the requirements of one of the following three options: 

A) Secondary Certification: Teachers for Alaska Program (Fairbanks Campus only), 
B) B.Ed in Secondary Education (X-CED Program, distance delivery only), or 
C) Secondary Certification: X-CED Program (distance delivery only).

Admission procedures and criteria for admission to the X-CED secondary education program are the same as those for the X-CED elementary education program. Admission procedures and criteria for admission to Fairbanks' Teachers for Alaska Program are discussed below.

### Program Requirements - Secondary

#### A. Fairbanks Campus Secondary Certification Program: Teachers for Alaska (TFA) Program

The Teachers for Alaska Program (TFA) is a professional certification program which prepares highly qualified teachers for secondary (7-12) school positions. The program is especially designed for students who want to teach at the secondary school level either in small rural schools or in Alaska's urban multicultural secondary schools. It is an intensive, extended two-semester program which students begin before the start of one academic semester, and complete after the end of the following academic semester. For further information on the program, please contact the Coordinator of the UAF Office of Certification and Advising in the School of Education.

**Admission Requirements - Secondary TFA**

1. Applicants for the TFA program must meet credit requirements for certification in a specific subject area as approved by the Alaska Department of Education. Eligible applicants include 1) UAF undergraduates who will have completed bachelor's degree requirements for an Alaska State Department of Education certifiable subject area by the start of the first semester of the TFA program; and 2) post-baccalaureate students who already possess a bachelor degree in a certifiable subject area. Certifiable subject areas are: Alaska Native Languages, Anthropology, Art, Biological Science, Chemistry, English, Foreign Languages, General Science, Geography, History, Journalism and Broadcasting, Mathematics, Music, Physical Education, Physics, Political Science, Speech Communication, Theatre Arts, Language Arts/Humanities (interdisciplinary), Social Science (interdisciplinary), or Math/Science (interdisciplinary). The Office of Certification and Advising will evaluate past degrees to determine eligibility.

2. Acceptance to TFA is contingent upon acceptance into the University of Alaska Fairbanks and completion of a TFA application form obtained from the School of Education.

3. All application materials, including transcripts and letters of reference, must be received by February 15 in order to be reviewed for admission in the following fall semester.

4. Teachers for Alaska is a selective teacher education program. A comprehensive system that includes more than one measure is used to assess the personal characteristics, communication, and basic skills proficiency of candidates preparing to teach. This system includes, but is not limited to, the following multiple measures which will be weighed and assessed by various means, including a review of transcripts, essays, performance, and letters of reference. Faculty may also require interviews. The range and balance of these four areas will be considered in a review by the faculty.

5. Once accepted into the program, TFA 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 in the program, be advanced to student teaching, or be recommended for a teaching certificate. In assessing student progress, faculty review grades, observations, faculty recommendations, demonstrated academic competence, and recommendations from the appropriate professionals in the schools. Systematic approaches are used to assist education students who are making unsatisfactory progress in their programs.

6. Reciprocity will be maintained with rural campus programs. Specific criteria for entry to secondary education student teaching are as follows:
   a. Successful completion of the first block in TFA.
   b. Placement information for student teaching on file with the office of Practica Experience by October 1 for student teaching in the spring semester, and by February 15 for student teaching in the fall semester.
   c. A completed physical examination.
   d. Approval of faculty to enter student teaching.

   Students who feel they have experience comparable to student teaching may petition to have the requirement reduced or waived. See the Coordinator of the Office of Practica Experience regarding eligibility and procedure.

   - X-CED students wishing to complete their professional year at the Fairbanks campus must send enrollment letter to the office of Certification and Advising. Contact your advisor and the Coordinator for the Office of Certification and Advising for further information.

7. Secondary teacher candidates seeking initial certification who are interested in an additional endorsement should contact the Office of Certification and Advising for details during the application process for TFA. TFA students interested in separate Elementary certification must meet admission requirements for the elementary program.

### Course Requirements: TFA Secondary Subject Area Endorsement

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 632 — Teaching as Reflective Inquiry</td>
<td>4</td>
</tr>
<tr>
<td>ED 634 — Teaching as Decision Making and Invention</td>
<td>8</td>
</tr>
<tr>
<td>ED 451 — Practicum in Education</td>
<td>6</td>
</tr>
<tr>
<td>ED 643 — Reflective Inquiry into Multicultural Classrooms and Communities</td>
<td>6</td>
</tr>
<tr>
<td>ED 644 — Designing Learning Environments</td>
<td>3</td>
</tr>
<tr>
<td>ED 453 — Student Teaching</td>
<td>12</td>
</tr>
</tbody>
</table>

Secondary Education: Transition Policy

Students graduating under the requirements in any catalog before the 1991-92 catalog year will substitute ED 451, 452, 632 and 634 for the following past required courses:

<table>
<thead>
<tr>
<th>Secondary B.Ed</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education minor</td>
<td></td>
</tr>
<tr>
<td>ED 201</td>
<td>ED 201</td>
</tr>
<tr>
<td>ED 330</td>
<td>ED 330</td>
</tr>
<tr>
<td>ED 350</td>
<td>ED 375</td>
</tr>
<tr>
<td>ED 375</td>
<td>ED 407</td>
</tr>
<tr>
<td>Education foundation</td>
<td></td>
</tr>
<tr>
<td>Education elective</td>
<td></td>
</tr>
<tr>
<td>Education foundation</td>
<td></td>
</tr>
<tr>
<td>Education elective</td>
<td></td>
</tr>
<tr>
<td>Education elective</td>
<td></td>
</tr>
<tr>
<td>Health/nutrition</td>
<td></td>
</tr>
<tr>
<td>ED 402</td>
<td>ED 402</td>
</tr>
<tr>
<td>ED 407</td>
<td>ED 407</td>
</tr>
<tr>
<td>ED 424 or 425</td>
<td>ED 424 or 425</td>
</tr>
<tr>
<td>ED 430</td>
<td>ED 453</td>
</tr>
<tr>
<td>ED 453</td>
<td></td>
</tr>
</tbody>
</table>

In order to be eligible for certification, students must also complete ED 643 and ED 644.

#### B. Rural Secondary Education Degree - B.Ed. Degree (Minimum Credits — 130) (X-CED Program)

Rural students outside the Fairbanks area should contact the X-CED program faculty at the nearest UAF rural campus for specific admissions and degree requirements.

1. Complete the general university core requirements, including the baccalaureate core.
2. Complete the following degree and program (major) requirements:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities (9 credits)</td>
<td>3</td>
</tr>
<tr>
<td>History Electives</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences (9 credits)</td>
<td>3</td>
</tr>
<tr>
<td>Math Electives</td>
<td>3</td>
</tr>
<tr>
<td>Math Electives</td>
<td>3</td>
</tr>
<tr>
<td>Electives from above areas</td>
<td>3</td>
</tr>
<tr>
<td>Electives from above areas</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology Electives</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology Electives</td>
<td>3</td>
</tr>
<tr>
<td>Politics Electives</td>
<td>3</td>
</tr>
<tr>
<td>Geography Electives</td>
<td>3</td>
</tr>
<tr>
<td>Economics Electives</td>
<td>3</td>
</tr>
<tr>
<td>Economics Electives</td>
<td>3</td>
</tr>
<tr>
<td>Upper Division Social Science Electives</td>
<td>12</td>
</tr>
<tr>
<td>Core Math requirements</td>
<td>3</td>
</tr>
<tr>
<td>Math Electives (minimum 6 credits upper division)</td>
<td>12</td>
</tr>
<tr>
<td>Science Electives (minimum 6 credits upper division)</td>
<td>19</td>
</tr>
<tr>
<td>Science Electives (minimum 6 credits upper division)</td>
<td>19</td>
</tr>
<tr>
<td>Education - Complete the following:</td>
<td></td>
</tr>
<tr>
<td>Foundation/Theory Courses</td>
<td>3</td>
</tr>
<tr>
<td>Foundation/Theory Courses</td>
<td>3</td>
</tr>
<tr>
<td>ED 330 — Diagnosis and Evaluation of Learning</td>
<td>3</td>
</tr>
<tr>
<td>ED 350 — Communications in Cross-Cultural Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>ED 375 — The Exceptional Learner</td>
<td>3</td>
</tr>
<tr>
<td>Education Foundation Elective (ED 345, 346, 380, 450, 422, or ANS 420)</td>
<td>3</td>
</tr>
<tr>
<td>ECCHD 120, HLTH 203</td>
<td>3</td>
</tr>
<tr>
<td>Methods Block Courses</td>
<td>3</td>
</tr>
<tr>
<td>ED 407 — Reading Strategies for Secondary Teachers</td>
<td>3</td>
</tr>
<tr>
<td>ED 424 — Small High School Programs</td>
<td>3</td>
</tr>
<tr>
<td>ED 425 — Community as an Educational Resource</td>
<td>3</td>
</tr>
<tr>
<td>ED 426 — Methods of Teaching in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>ED 430 — Multicultural Teaching Techniques</td>
<td>3</td>
</tr>
<tr>
<td>Student Teaching</td>
<td>3</td>
</tr>
<tr>
<td>ED 453 — Secondary Student Teaching</td>
<td>3</td>
</tr>
</tbody>
</table>

Candidates who have successfully taught full-time in secondary schools may request a reduced student teaching experience. Contact the Office of Practica Experience for further information.

Minimum credits required: 130

C. X-CED Secondary Certification Program

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 240 — Developmental Psychology in Cross-Cultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>ED 201 — Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 330 — Diagnosis and Evaluation of Learning</td>
<td>3</td>
</tr>
<tr>
<td>ED 375 — The Exceptional Learner</td>
<td>3</td>
</tr>
<tr>
<td>Education Foundation Elective (ED 345, 346, 380, 450, 422, or ANS 420)</td>
<td>3</td>
</tr>
<tr>
<td>or approved substitute</td>
<td>3</td>
</tr>
<tr>
<td>or approved substitute</td>
<td>3</td>
</tr>
<tr>
<td>or approved substitute</td>
<td>3</td>
</tr>
<tr>
<td>or approved substitute</td>
<td>3</td>
</tr>
</tbody>
</table>

Methods Courses

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 402 — Methods of Teaching in the Secondary School</td>
<td>3</td>
</tr>
<tr>
<td>or approved substitute</td>
<td>3</td>
</tr>
<tr>
<td>or approved substitute</td>
<td>3</td>
</tr>
<tr>
<td>or approved substitute</td>
<td>3</td>
</tr>
</tbody>
</table>

Minimum credits required: 130

VI. OTHER PROGRAMS

MINOR in General Education

For those students interested in exploring the possibility of a career in education before beginning the elementary education professional year or the TFA program, and for those students who are interested in education but who may not wish to pursue certification, there is the option of completing a minor in general education that is not linked to certification or admission to either education program. Students may also elect to take one or more of the following courses according to their own personal interests. The minor consists of the following courses:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 201 — Introduction to Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 299 — Practicum in Education</td>
<td>3</td>
</tr>
<tr>
<td>ED 350 — Communication in Cross-Cultural Classrooms</td>
<td>3</td>
</tr>
<tr>
<td>Two approved education electives</td>
<td>6</td>
</tr>
</tbody>
</table>

International Exchange Programs

The School of Education offers two international exchange programs, one with the Soviet Union and one with Japan. Both programs offer students an excellent opportunity to study and teach abroad. The Soviet Exchange Program is with Magadan State Pedagogical Institute, and allows a short term exchange (3 to 4 weeks) and a long term exchange (one semester or one academic year). The Japan Exchange Program is with Hokkaido University of Education in Sapporo, Japan. During the one month exchange, UAF students who have completed student teaching will complete a three-week teaching internship in Japanese schools and participate in an orientation and program debriefing at Hokkaido University. Students interested in these programs are encouraged to begin language study in the appropriate language as undergraduates. Please contact the School of Education for further information on these programs.

M.Ed. Degree

This program offers several options from which a person selects an area of specialization. Inquiries concerning options and the specific requirements of each option should be directed to the School of Education, Coordinator of Graduate Programs.

Ed.S. Degree

This is a post-master's degree for school administrators who desire advanced study in educational leadership. It requires 36 semester hours beyond the master's degree or 60 beyond the bachelor's degree. Educators interested in pursuing this degree should confer with the Coordinator of Graduate Studies.
## Electrical Engineering

### School of Engineering

**Department of Electrical Engineering**

**Degrees:** B.S., M.E.E., M.S.

### Minimum Requirements for Degrees:

- **B.S.:** 135 credits; **M.S.:** 30 additional credits; **M.E.E.:** 32 additional credits

Electrical engineering encompasses the areas of computer applications and design, electrical power transmission and distribution, telecommunications and electronics. The electrical engineer designs and oversees the construction, installation and maintenance of electrical systems providing light, heat and power. Engineers design the communication systems of telephone, radio and television as well as the transistors and integrated circuits used in these systems. People trained in computer engineering automate businesses, factories, pipelines and refineries; and design control systems and computers which guide trains, planes and space vehicles. Even the test devices and tools of investigation—in medicine, in physics, in geology and in other sciences—are today largely electronic.

The scope of electrical engineering has expanded tremendously in recent years. Many developments have been important in this expansion, including automatic control theory, environmental monitoring, communications theory, new geophysical instrumentation, extra-high voltage power transmission, medical electronics, plasmas, magneto-hydrodynamics, integrated circuits, satellites, and mini and microcomputers. The process controls in the extraction, transmission and refining of petroleum products are largely the responsibility of the electrical and computer engineer. Development of techniques for utilizing new energy sources presents a challenge, requiring much imagination and resourcefulness. Advanced training in engineering science and mathematics is required for creative work in these areas.

The curriculum is designed to insure that basic fundamentals are learned, as well as specialized skills. The practical needs of engineers who plan to enter practice immediately upon graduation, as well as the theoretical background needed for individuals planning to pursue graduate studies, have been taken into account in the program. Candidates for the bachelor of science degree will be required to take the State of Alaska Engineer-In-Training Examination in their general field.

### Requirements

#### Electrical Engineering — B.S. Degree

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements. 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.

**First Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>ENGL 111X — Methods of Written Comm.</td>
<td>3</td>
</tr>
<tr>
<td>MATH 200X — Calculus</td>
<td>4</td>
</tr>
<tr>
<td>ES 101 — Introduction to Engineering</td>
<td>4</td>
</tr>
<tr>
<td>Perspectives on the Human Condition</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 105 — General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>Spring Semester</td>
<td>17 credits</td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td>3</td>
</tr>
<tr>
<td>MATH 201X — Calculus</td>
<td>4</td>
</tr>
<tr>
<td>EE 102 — Intro. to Electrical Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 106 — General Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>Perspectives on the Human Condition</td>
<td>3</td>
</tr>
</tbody>
</table>

**Second Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>MATH 202X — Calculus</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 211 — General Physics</td>
<td>4</td>
</tr>
<tr>
<td>EE 201 — Computer Techniques</td>
<td>3</td>
</tr>
<tr>
<td>EE 203 — Fund of Elec. Engineering</td>
<td>4</td>
</tr>
<tr>
<td>ENGL 211X — Intermediate Exposition with Modes of Lit or ENGL 213X — Intermediate Exposition</td>
<td>3</td>
</tr>
<tr>
<td>Spring Semester</td>
<td>16 credits</td>
</tr>
<tr>
<td>MATH 302 — Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 312 — General Physics</td>
<td>4</td>
</tr>
<tr>
<td>ES 208 — Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>EE 204 — Fund. of Elec. Engineering</td>
<td>4</td>
</tr>
<tr>
<td>LS 101 — Library Information and Research</td>
<td>1</td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>EE 333 — Physical Electronics</td>
<td>4</td>
</tr>
</tbody>
</table>

**Fourth Year**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>EE 353 — Circuit Theory I</td>
<td>3</td>
</tr>
<tr>
<td>Approved Math Elective**</td>
<td>3</td>
</tr>
<tr>
<td>Perspectives on the Human Condition</td>
<td>3</td>
</tr>
<tr>
<td>Option I: Communications</td>
<td>3</td>
</tr>
<tr>
<td>EE 311 — Applied Engineering Electromagnetics</td>
<td>3</td>
</tr>
<tr>
<td>EE 331 — High Frequency Lab</td>
<td>1</td>
</tr>
<tr>
<td>Option II: Power and Control</td>
<td>4</td>
</tr>
<tr>
<td>EE 303 — Electrical Machinery</td>
<td>4</td>
</tr>
<tr>
<td>Option III: Computer Engineering</td>
<td>4</td>
</tr>
<tr>
<td>EE 343 — Digital Syst. Anal. &amp; Design I</td>
<td>4</td>
</tr>
<tr>
<td>Spring Semester</td>
<td>18 credits</td>
</tr>
<tr>
<td>EE 334 — Electronic Circuit Design</td>
<td>4</td>
</tr>
<tr>
<td>EE 354 — Engineering Signal Analysis</td>
<td>3</td>
</tr>
<tr>
<td>Perspectives on the Human Condition</td>
<td>3</td>
</tr>
<tr>
<td>EE 471 — Fundamentals of Automatic Control</td>
<td>4</td>
</tr>
<tr>
<td>Option I: Communications</td>
<td>4</td>
</tr>
<tr>
<td>EE 312 — Electromagnetic Waves and Devices</td>
<td>3</td>
</tr>
<tr>
<td>EE 332 — Electromagnetics Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>Option II: Power and Control</td>
<td>4</td>
</tr>
<tr>
<td>EE 404 — Electric Power Systems</td>
<td>4</td>
</tr>
<tr>
<td>Option III: Computer Engineering</td>
<td>4</td>
</tr>
<tr>
<td>EE 443 — Digital Systems Analysis and Design II</td>
<td>4</td>
</tr>
</tbody>
</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 credits</td>
</tr>
</tbody>
</table>

* Perspectives on the Human Condition and ES 201 may be interchanged if student's mathematics preparation allows.

** 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.

*** Engineering science elective to be chosen from ES 331, ME 334, ES 341 and ES 346.

### Electrical Engineering — M.S. or M.E.E. Degree

Graduate degree programs in electrical engineering are closely connected with research activities of the faculty. Research areas in electrical engineering emphasize high latitude problems. They include data communications, telecommunications, electromagnetic wave propagation, satellite communications, digital and physical electronics, computer and microcomputer applications including remote biomedical and environmental instrumentation, electric energy system analyses, electric power quality improvement, geomagnetic storm interaction with electric energy systems, system identification and simulation and digital signal processing.

The M.S. degree program includes research and advanced specialized study with a thesis. The M.E.E. degree program is composed of coursework with the possibility of a research project.

For complete information on the graduate programs in Electrical Engineering, see the UAF Graduate Catalog.
Engineering Management

School of Engineering
Department of Engineering and Science Management (907) 474-6121

Degrees: M.S.

Minimum Requirements for Degrees: 33 credits (beyond a bachelor's degree in an engineering field)

The engineering management curriculum is designed for graduate engineers who will hold executive or managerial positions in engineering, construction, industrial, or governmental organizations. It includes human relations, financial, economic, quantitative, technical, and legal subjects useful in solving problems of management.

The curriculum includes graduate-level core courses in the subjects named above, plus additional course work either directed toward special problems such as arctic engineering or in one of the more general fields of engineering through projects or research in the application of management principles. In addition to an undergraduate degree, a candidate should have had on-the-job experience in engineering.

Candidates for the engineering management degree must hold a previous degree in an engineering discipline. (See also "Science Management").

For complete information of the graduate program in engineering management, see the UAF Graduate Catalog.

English

College of Liberal Arts
Department of English (907) 474-7193

Degrees: B.A., M.A., M.F.A.

Minimum Requirements for Degrees: B.A.: 120 credits; M.A.: 30 additional credits; M.F.A.: 45 additional credits

The work of the Department of English includes the two functions traditionally associated with the discipline — teaching basic and advanced courses in writing and offering survey and advanced courses in English, American and world literature both to English majors and minors and to students in other fields who may choose the courses as electives. In addition, the department offers courses in English linguistics and Alaskan literature.

Requirements

English — B.A. Degree

A. Emphasis: Literature
1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements: 36 credits in English besides English 111X and English 211X or 213X, including:

   Credits
   a. ENGL 301 — Continental Literature in Translation: From the Ancient World through the Renaissance ............................... 3
   b. ENGL 310 — Literary Criticism .................................................... 3
   c. Complete three courses from the following: ENGL 306 — Survey of American Literature: Beginnings to the Civil War; ENGL 307 — Survey of American Literature: Civil War to the Present; ENGL 308 — Survey of British Literature: Beowulf to the Romantic Period; ENGL 309 — Survey of British Literature: Romantic Period to the Present; One course from the following: ENGL 403 — American Renaissance, ENGL 404 — American Realism, ENGL 405 — British Writers of the 19th Century: Romantic Period; ENGL 406 — British Writers of the 19th Century: Victorian Period; ENGL 407 — English Writers of the 18th Century: Restoration and Neo-Classical Period; ENGL 408 — American Origins ..................................................... 3
   d. ENGL 422 or 425 — Shakespeare ................................................ 3

   b. ENGL 422 or 425 — Shakespeare ................................................ 3

   c. Any 300- or 400-level English electives

   Credits
   a. Same as listed under a, b, and d for literature emphasis .............. 18
   b. ENGL 317 — Traditional English Grammar or ENGL 318 — Modern English Grammar ................................................. 3
   c. ENGL 472 — History of the English Language ............................ 3
   d. ENGL 313 — Writing Non-Fiction Prose ................................. 3
   e. ENGL 371 — Intermediate Creative Writing ............................ 3
   f. ENGL 311 — Writing Fiction Prose ........................................... 3

   g. Any 300- or 400-level English electives

   Credits

   3. Minimum Credits Required ................................................ 120

B. Emphasis: Writing

1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements: 36 credits in English besides English 111X and English 211X or 213X, including:

   Credits
   a. ENGL 444 — Fiction in Translation ............................................. 6
   b. ENGL 445 — 20th Century Drama: From Chekhov to Ionesco ....... 6
   c. ENGL 446 — Major Modern and Contemporary Poetry ................. 6
   d. ENGL 447 — 20th Century British Prose .................................. 6
   e. ENGL 448 — 20th Century American Prose ............................... 3
   f. ENGL 452 — The British Novel to 1930 ................................. 3
   g. ENGL 453 — Writing Non-Fiction Prose ................................. 3
   h. ENGL 454 — Fiction in Translation ................................. 3
   i. ENGL 455 — 20th Century Drama: From Chekhov to Ionesco ....... 3
   j. ENGL 456 — Major Modern and Contemporary Poetry ................. 3
   k. ENGL 457 — 20th Century British Prose .................................. 3
   l. ENGL 458 — 20th Century American Prose ............................... 3
   m. ENGL 459 — The British Novel to 1930 ................................. 3
   n. ENGL 460 — Writing Non-Fiction Prose ................................. 3
   o. ENGL 461 — Intermediate Creative Writing ............................ 3
   p. ENGL 462 — Applied Linguistics ............................................. 3
   q. ENGL 463 — Creative Writing ................................. 3
   r. ENGL 464 — Fiction in Translation ............................................. 3
   s. ENGL 465 — 20th Century Drama: From Chekhov to Ionesco ....... 3
   t. ENGL 466 — Major Modern and Contemporary Poetry ................. 3
   u. ENGL 467 — 20th Century British Prose .................................. 3
   v. ENGL 468 — 20th Century American Prose ............................... 3
   w. ENGL 469 — The British Novel to 1930 ................................. 3
   x. ENGL 470 — Writing Non-Fiction Prose ................................. 3
   y. ENGL 471 — Intermediate Creative Writing ............................ 3
   z. ENGL 472 — History of the English Language ............................ 3

   g. One course chosen from 300-400 English Department Courses .... 3

   3. Minimum Credits Required ................................................ 120

C. Emphasis: Teaching

1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements: 36 credits in English besides English 111X and English 211X or 213X, including:

   Credits
   a. ENGL 301 — Continental Literature in Translation: From the Ancient World through the Renaissance ............................... 3
   b. ENGL 310 — Literary Criticism .................................................... 3
   c. Complete three courses from the following: ENGL 306 — Survey of American Literature: Beginnings to the Civil War; ENGL 307 — Survey of American Literature: Civil War to the Present; ENGL 308 — Survey of British Literature: Beowulf to the Romantic Period; ENGL 309 — Survey of British Literature: Romantic Period to the Present; One course from the following: ENGL 403 — American Renaissance, ENGL 404 — American Realism, ENGL 405 — British Writers of the 19th Century: Romantic Period; ENGL 406 — British Writers of the 19th Century: Victorian Period; ENGL 407 — English Writers of the 18th Century: Restoration and Neo-Classical Period; ENGL 408 — American Origins ..................................................... 3
   d. ENGL 422 or 425 — Shakespeare ................................................ 3

   b. ENGL 422 or 425 — Shakespeare ................................................ 3

   c. Any 300- or 400-level English electives

   Credits

   3. Minimum Credits Required ................................................ 120

MINOR in English

A minor in English requires 18 credits distributed as follows:

   a. Two courses from the following: ENGL 301 — Continental Literature in Translation; ENGL 306 — Survey of American Literature: Beginnings to the Civil War; ENGL 307 — Survey of American Literature: Civil War to the Present; ENGL 308 — Survey of British Literature: Beowulf to the Romantic Period; ENGL 309 — Survey of British Literature: Romantic Period to the Present; Any 300- or 400-level English electives

   Credits

   9. English — M.A. Degree; Creative Writing — M.F.A. Degree

   The master of arts degree focuses on scholarly research in British and American literature. The master of fine arts degree centers on the writing of original, imaginative work in poetry, fiction, drama, and/or nonfiction. Each degree program requires students to take a large proportion of graduate literature courses and to engage in research and writing. Master of arts candidates write theses in literary scholarship. Any graduate student may apply for one of the department's teaching assistantships.

   For complete information on the graduate programs in English, see the UAF Graduate Catalog.
Environmental Quality Engineering and Science

School of Engineering
Department of Civil Engineering

Degrees: M.S.

Minimum Requirements for Degree: 30 credits (beyond a bachelor's degree)

The environmental quality engineering curriculum is administered through the civil engineering department and is designed for graduate engineers and science majors who wish to pursue careers in the areas of water supply, treatment, and distribution; waste treatment, stream pollution, air pollution, solid-waste disposal, hazardous and toxic waste management, and environmental impact evaluation. Consideration is given for broad study of the environment, prevention and abatement of quality deterioration, and solutions to environmental problems. Graduates will be prepared to hold positions in federal, state, and municipal organizations as well as in consulting engineering offices. For students having non-engineering degrees, an interdisciplinary program is available leading to the master of science in environmental quality science.

For complete information on the graduate program in environmental quality engineering and science, see the UAF Graduate Catalog.

Eskimo

College of Liberal Arts
Department of Alaska Native Languages

Degree: B.A.

Minimum Requirements for Degree: 130 credits

Requirements

Inupiaq Eskimo — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.

2. Complete the following program (major) requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESK 111-112 - Elementary Inupiaq Eskimo</td>
<td>10</td>
</tr>
<tr>
<td>ESK 211-212 - Intermediate Inupiaq Eskimo</td>
<td>6</td>
</tr>
<tr>
<td>ANL 215 - Eskimo-Aleut Languages</td>
<td>3</td>
</tr>
<tr>
<td>ESK 417 - Advanced Inupiaq Eskimo</td>
<td>3</td>
</tr>
<tr>
<td>LING 101 - The Nature of Language</td>
<td>3</td>
</tr>
<tr>
<td>or ANS 320 - Language and Culture</td>
<td></td>
</tr>
</tbody>
</table>

Complete three of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESK 417 - (Additional) Adv. Inupiaq Eskimo</td>
<td>3</td>
</tr>
<tr>
<td>ANL 287 - Teaching Methods for Alaska Native Languages</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 242 - Native Cultures of Alaska</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 380 - Peoples of Alaska Southwest</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 381 - Inupiaq and Yup’ik People</td>
<td>3</td>
</tr>
<tr>
<td>HIST 110 - History of Alaska Natives</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Minimum Credits Required 130

Yup’ik Eskimo — B.A. Degree

1. Complete general university requirements and B.A. degree requirements.

2. Complete the following program (major) requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESK 101-102 - Elementary Central Yup’ik Eskimo</td>
<td>10</td>
</tr>
<tr>
<td>ESK 201-202 - Intermediate Central Yup’ik Eskimo</td>
<td>6</td>
</tr>
</tbody>
</table>

Film Studies

College of Liberal Arts
Department of Theater

MINOR in Film Studies
15 credits: ENGL 217, JB 308, THR 380 and JB 105 required plus 3 credits from approved electives.

Fire Science

College of Rural Alaska
Tanana Valley Campus

Certificate: Degree: A.A.S.

Minimum Requirements for Degree: 60-63 credits; for Certificate: 30 credits

The UAF Fire Science Program provides a unique learning environment where students can obtain classroom education, hands-on training and practical vocational experience through 10 local fire and rescue organizations. The program offers students a fundamental working knowledge of the various aspects of municipal fire, wildland fire, emergency medical services and hazardous materials control. A large pool of instructors provides a high level of technical expertise on a variety of specialty emergency services. The primary goal of this program is to make our students the most attractive candidates for job openings and promotions within the fire service and related fields. Associate degrees and certificate programs in municipal fire control, wildland fire control and hazardous materials fire control are offered.

Requirements

Hazardous Materials Control - A.A.S. Degree

1. Complete the following general university and A.A.S. requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 111X and ENGL 211X, 212X, or 213X</td>
<td>6</td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td></td>
</tr>
<tr>
<td>Mathematics or Natural Science: A math or natural science course at the 100 level or above</td>
<td>3</td>
</tr>
<tr>
<td>Humanities, social sciences, mathematics, natural science or Perspectives on the Human Condition</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Complete the following major degree requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 103 - Emergency Trauma Training (ETT)</td>
<td>3</td>
</tr>
<tr>
<td>or EMS 119 - Emergency Medical Technician 1</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 110 - Introduction to Hazardous Waste Operations and Emergency Response</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 111 - Management and Supervision for Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 120 - Introduction to Fire Chemistry and Physics</td>
<td>3</td>
</tr>
</tbody>
</table>
### Municipal Fire Control — A.A.S. Degree

1. Complete the following general university and A.A.S. requirements:

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications:</td>
<td></td>
</tr>
<tr>
<td>ENGL 111X and ENGL 211X, 212*, or 213X</td>
<td>6</td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td></td>
</tr>
<tr>
<td>Mathematics or Natural Science:</td>
<td></td>
</tr>
<tr>
<td>A math or natural science course at the 100 level or above</td>
<td>3</td>
</tr>
<tr>
<td>Humanities, social sciences, mathematics, natural science or Perspectives on the Human Condition</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Complete the following major degree requirements:

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 103 - Emergency Trauma Training (ETT) First Responder</td>
<td>3</td>
</tr>
<tr>
<td>or EMS 119 - Emergency Medical Technician I</td>
<td>6</td>
</tr>
<tr>
<td>EMS 105 - Fundamentals of Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>EMS 202 - Fire Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>EMS 203 - Hazards Materials I</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>24-27</td>
</tr>
</tbody>
</table>

3. Complete 6 credits from the following major specialty electives:

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 124 - Emergency Medical Technician Refresher</td>
<td>1</td>
</tr>
<tr>
<td>EMS 230 - Emergency Medical Technician II</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 115 - Fire Apparatus and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 120 - Introduction to Fire Chemistry and Physics</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 123 - Fire Investigation</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 151 - Wildland Fire Control I</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 205 - Building Construction for Fire Protection</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 208 - Fire Service Records and Reports</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 212 - Building Codes</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 214 - Fire Protection Equipment and Systems</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 216 - Methods of Instruct for Fire Service Training</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>24-27</td>
</tr>
</tbody>
</table>

4. Complete 15 general electives credits.

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 101 - Introduction to Fire Science</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 111 - Supervision and Management for Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 202 - Fire Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 203 - Hazardous Materials I</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>15</td>
</tr>
</tbody>
</table>

5. Complete 6 credits from the following major specialty electives:

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 103 - Emergency Trauma Training (ETT) First Responder</td>
<td>3</td>
</tr>
<tr>
<td>or EMS 119 - Emergency Medical Technician I</td>
<td>6</td>
</tr>
<tr>
<td>FIRE 151 - Wildland Fire Control I</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 155 - Wildland Fire Behavior</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 252 - Wildland Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>15</td>
</tr>
</tbody>
</table>

### Wildlands Fire Control — Certificate

**Suggested Course Sequence**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 101 - Introduction to Fire Science</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 111 - Supervision and Management for Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 202 - Fire Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 203 - Hazardous Materials I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 105 - Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 107 - Fire Tactics and Strategy</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 117 - Rescue Practices I</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 103 - Emergency Trauma Training (ETT) First Responder</td>
<td>3</td>
</tr>
<tr>
<td>or EMS 119 - Emergency Medical Technician I</td>
<td>6</td>
</tr>
<tr>
<td>Major specialty electives</td>
<td></td>
</tr>
</tbody>
</table>

**Total** 15-18

### Certificate Total

30-33

---

Note: Major electives and general electives must be approved by the student’s advisor.

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

---

### Municipal Fire Control — Certificate

**Suggested Course Sequence**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 101 - Introduction to Fire Science</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 111 - Supervision and Management for Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 202 - Fire Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 203 - Hazardous Materials I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 105 - Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 107 - Fire Tactics and Strategy</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 117 - Rescue Practices I</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 103 - Emergency Trauma Training (ETT) First Responder</td>
<td>3</td>
</tr>
<tr>
<td>or EMS 119 - Emergency Medical Technician I</td>
<td>6</td>
</tr>
<tr>
<td>Major specialty electives</td>
<td></td>
</tr>
</tbody>
</table>

**Total** 15-18

### Certificate Total

30-33

---

Note: Major electives and general electives must be approved by the student’s advisor.

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

---

### Wildlands Fire Control — A.A.S. Degree

1. Complete the following general university and A.A.S. requirements:

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications:</td>
<td></td>
</tr>
<tr>
<td>ENGL 111X and ENGL 211X, 212*, or 213X</td>
<td>6</td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td></td>
</tr>
<tr>
<td>Mathematics or Natural Science:</td>
<td></td>
</tr>
<tr>
<td>A math or natural science course at the 100 level or above</td>
<td>3</td>
</tr>
<tr>
<td>Humanities, social sciences, mathematics, natural science or Perspectives on the Human Condition</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Complete the following major degree requirements:

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 103 - Emergency Trauma Training (ETT) First Responder</td>
<td>3</td>
</tr>
<tr>
<td>or EMS 119 - Emergency Medical Technician I</td>
<td>6</td>
</tr>
<tr>
<td>FIRE 151 - Wildland Fire Control I</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 155 - Wildland Fire Behavior</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 157 - Wildland Air Operations and Safety</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 159 - Wildland Fire Operations Function</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 252 - Wildland Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 254 - Wildland Fire Business Management</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 262 - Wildland Fire Control II</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>15</td>
</tr>
</tbody>
</table>

3. Complete 6 credits from the following major elective courses:

   **Credits**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 124 - Emergency Medical Technician Refresher</td>
<td>1</td>
</tr>
<tr>
<td>EMS 230 - Emergency Medical Technician II</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 161 - Wildland Fire Logistics Function</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 165 - Wildland Fire Planning Function</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 203 - Hazardous Materials I</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 216 - Methods of Instruct for Fire Service Training</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 226 - Fire Planning and Multiple Use Management</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 258 - Wildland Fuels Management</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 260 - Fire Research and Development</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 270 - Wildland Fire Command Function</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>15</td>
</tr>
</tbody>
</table>

4. Complete 15 general electives credits.

   **Degrees Total** 60-63

   Note: Major electives and general electives must be approved by the student’s advisor.

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

---

### Wildlands Fire Control — Certificate

**Suggested Course Sequence**

**Fall Semester**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 101 - Introduction to Fire Science</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 111 - Supervision and Management for Emergency Services</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 202 - Fire Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 203 - Hazardous Materials I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Spring Semester**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE 105 - Fundamentals of Fire Prevention</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 107 - Fire Tactics and Strategy</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 117 - Rescue Practices I</td>
<td>3</td>
</tr>
<tr>
<td>FIRE 103 - Emergency Trauma Training (ETT) First Responder</td>
<td>3</td>
</tr>
<tr>
<td>or EMS 119 - Emergency Medical Technician I</td>
<td>6</td>
</tr>
<tr>
<td>Major specialty electives</td>
<td></td>
</tr>
</tbody>
</table>

**Total** 15-18

### Certificate Total

30-33

---

Note: Major electives and general electives must be approved by the student’s advisor.

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.
Fisheries

School of Fisheries and Ocean Sciences
Program in Fisheries (907) 474-7289

Degrees: B.S., M.S., Ph.D.

Minimum Requirements for Degrees: B.S.: 130 credits; M.S.: 30 additional credits, Ph.D.: open

The fisheries undergraduate curriculum program is intended to provide broad basic education and training. Holders of the bachelor's degree will be qualified to enter the management, law enforcement, and public information-education phase of fisheries work. Students contemplating careers in research, administration, advanced management, or teaching will find the bachelor's curriculum a solid foundation for graduate study. The undergraduate program is offered at Fairbanks only.

The geographic location of UAF is advantageous for the study of interior Alaska aquatic habitats. A number of subarctic streams and lakes are within easy reach. Main access to the marine environment from the Fairbanks campus is in Prince William Sound and Cook Inlet.

The Juneau Center, School of Fisheries and Ocean Sciences (JCSFOS) houses the UAF Fisheries Science Program in southeast Alaska.* JCSFOS has well-equipped labs located near the Auke Bay National Marine Fisheries Laboratory. Students matriculating at Juneau can also register for University of Alaska Southeast courses.

Students from both locations have an opportunity for association with personnel of federal and state conservation agencies and those agencies hire a number of students for summer field work.

*Juneau students should also reference the University of Alaska Southeast catalog.

Requirements

Fisheries — B.S. Degree

1. Complete the general university and B.S. degree requirements. Some of the Fisheries core courses below may be used to meet these requirements as indicated by *

2. Complete the following major requirements. A total of 130 credits must be earned for the Bachelor of Science in Fisheries. Courses completed in A, B, and C areas may be graded "C" or better.

A. Fisheries Core Courses (79-84 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 105X, 106X — General Chemistry</td>
<td>8</td>
</tr>
<tr>
<td>CS or CAPS courses</td>
<td></td>
</tr>
<tr>
<td>ENGL 314 — Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 414 — Research Writing</td>
<td></td>
</tr>
<tr>
<td>*MATH 200X and 201X — Introduction to Calculus</td>
<td>8</td>
</tr>
<tr>
<td>PHYS 103X-104X — College Physics</td>
<td>8</td>
</tr>
<tr>
<td>STAT 200 — Elementary Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 300 — Statistics</td>
<td></td>
</tr>
<tr>
<td>Biology (27 credits)</td>
<td></td>
</tr>
<tr>
<td>*BOL 105X, 106X — Fundamentals in Biol. I and II</td>
<td>8</td>
</tr>
<tr>
<td>BIOL 262 — Principles of Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 271 — Principles of Ecology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 310 — Animal Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 473 — Limnology</td>
<td></td>
</tr>
<tr>
<td>or MSL 411 — Current Topics in Oceanographic Research</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 477 — Ecology of Streams and Rivers</td>
<td>3</td>
</tr>
<tr>
<td>MSL 111X — The Oceans</td>
<td>4</td>
</tr>
</tbody>
</table>

*May be applied to general University requirements simultaneously.

Fisheries (13-15 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISH 336 — Aquaculture of Marine Species</td>
<td></td>
</tr>
<tr>
<td>or FISH 380 — Marine Fisheries of Alaska</td>
<td>3-4</td>
</tr>
<tr>
<td>or FISH 384 — Biology of Freshwater Fish of Alaska</td>
<td>3</td>
</tr>
<tr>
<td>or FISH 385 — Biology of Economically Important Fish and Invertebrates</td>
<td>3-4</td>
</tr>
<tr>
<td>FISH 400 — Fishes Science</td>
<td></td>
</tr>
<tr>
<td>FISH 401 — Fisheries Management</td>
<td>3</td>
</tr>
<tr>
<td>FISH 427 — Ichthyology</td>
<td></td>
</tr>
<tr>
<td>or BIOL 305 — Invertebrate Zoology</td>
<td>4-5</td>
</tr>
</tbody>
</table>

B. Fisheries Electives (18 credits): (Choose any Fisheries course (FISH) not already applied to require-ments or any courses from the following list to total 18 credits.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 305 — Invertebrate Zoology</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 328 — Biology of Marine Organisms</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 473 — Limnology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 477 — Ecology of Rivers</td>
<td></td>
</tr>
<tr>
<td>CHEM 212 — Chemical Equilibrium and Analysis</td>
<td>4</td>
</tr>
<tr>
<td>and CHEM 213 — Quantitative Analysis Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 321-322 — Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>and CHEM 324 — Organic Laboratory</td>
<td>9</td>
</tr>
<tr>
<td>GEOG 205 — Elements of Physical Geography</td>
<td>3</td>
</tr>
<tr>
<td>MSL 411 — Current Topics in Oceanographic Research</td>
<td>3</td>
</tr>
<tr>
<td>STAT 401 — Regression and Analysis of Variance and/or STAT 402 — Scientific Sampling</td>
<td>3-7</td>
</tr>
</tbody>
</table>

C. Electives to total 130 credits.

Fisheries majors are encouraged to reinforce their fisheries qualifications by earning a minor in a program related to fisheries. Some examples are Biological Sciences, Chemistry, Economics, Mathematics, Natural Resources Management (Animal Science), Northern Studies, Statistics, Wildlife Biology. Recommended electives (other courses may be substituted) include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 242 — Native Cultures of Alaska</td>
<td>3</td>
</tr>
<tr>
<td>BA 307 — Personnel Management</td>
<td></td>
</tr>
<tr>
<td>BIOL 317 — Comparative Anatomy of Vertebrates</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 342 — Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 407 — Aquatic Entomology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 418 — Developmental Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 442 — Bacteriology and Immunology</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 471 — Population Ecology</td>
<td></td>
</tr>
<tr>
<td>BIOL 472 — Communities and Ecosystems</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 477 — Ecology of Streams and Rivers</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 480 — Water Pollution Biology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 451 — General Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 452 — Biochemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>ECON 438 — The Economics of Fisheries Management</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 330 — Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 302 — Geography of Alaska</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 402 — Resources and Environment</td>
<td>3</td>
</tr>
<tr>
<td>GEOS 304 — Geomorphology (3 credits)</td>
<td></td>
</tr>
<tr>
<td>GEOS 410 — Intro. to Marine Communication</td>
<td></td>
</tr>
<tr>
<td>JB 311 — Magazine Article Writing</td>
<td>3</td>
</tr>
<tr>
<td>MRM 204 — Natural Resources Legislation and Policy</td>
<td>3</td>
</tr>
<tr>
<td>MRM 277 — Introduction to Conservation Biology</td>
<td>3</td>
</tr>
<tr>
<td>MRM 303 — Environmental Ethics and Actions</td>
<td>3</td>
</tr>
<tr>
<td>MRM 370 — Introduction to Watershed Management</td>
<td>3</td>
</tr>
<tr>
<td>MRM 407 — Environmental Law</td>
<td></td>
</tr>
<tr>
<td>MRM 407 — Environmental Law</td>
<td>3</td>
</tr>
<tr>
<td>PS 201 — Comparative Politics</td>
<td></td>
</tr>
<tr>
<td>PS 212 — Intro. to Public Administration</td>
<td></td>
</tr>
<tr>
<td>PS 302 — Congress and Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PS 400 — Environmental Politics</td>
<td></td>
</tr>
<tr>
<td>SOC 309 — Urban Sociology</td>
<td></td>
</tr>
</tbody>
</table>

Bachelor of science candidates are strongly urged to obtain work experience in fisheries-related positions with public resource agencies or private firms. Faculty members can help students contact potential employers. Fisheries undergraduate students will be asked each fall to describe their work experience of the previous year.

Fisheries — M.S. and Ph.D. Degrees

For complete information on the graduate programs in fisheries, see the UAF Graduate Catalog.

Food Science and Nutrition

School of Fisheries and Ocean Sciences/ School of Agriculture and Land Resources Management Cross-School Program (907) 474-7289/(907) 474-5550

Food Science is the study of the chemical, biological, and engineering aspects of food and its components. Knowledge from diverse scientific disciplines is integrated to develop new methods for the processing and fabrication of foods while assuring safe, nutritious, and acceptable products. From a chemical, microbiological and physical standpoint, food is the most complex of all natural
products. Whereas food science is a high-technology field, the results of research and development reach people and animals daily, as safe, nutritious and acceptable foods.

The Food Science and Nutrition (FSN) program at UAF emphasizes the food uses of fisheries, game, and other traditional foods. The program provides UAF students majoring in a natural science, engineering, northern agriculture, or management with a strong emphasis area in food science and nutrition. The food industry is the largest employer in the United States and job openings are available for people trained as food technologists.

The following undergraduate courses are currently offered as part of the FSN program. See the UAF Graduate Catalog for information on the FSN graduate offerings.

NRM 122 - Food Facts, Fads and Consumer Choices
FISH 261 - Introduction to Seafood Science and Nutrition
NRM 305 - Nutrition for Children, Adolescents and Adults
NRM 310 - Agriculture Concepts
NRM 321 - Applied Animal Nutrition
NRM 420 - Animal Nutrition and Metabolism
NRM 445 - Managing Food Production Systems
FSN 460-K (FISH 460-K) - Food Science and Technology Internship

University of Alaska Fairbanks/
Oregon State University
Cooperative Program (907) 474-7289

For students interested in a Bachelor of Science degree in food science and technology, UAF offers a program in cooperation with Oregon State University (OSU). Students enrolled in this program complete their freshman and sophomore years at UAF, then transfer to Corvallis, Oregon to complete their junior and senior years and earn a B.S. degree in Food Science and Technology from OSU under the Western Undergraduate Exchange (WUE) program. The academic program combines principles and concepts acquired in the life sciences, chemistry, physics, and engineering. The core curriculum at OSU is approved by the Education Committee of the Institute of Food Technologists, the professional society of international food scientists.

Foreign Languages

College of Liberal Arts
Department of Foreign Languages and Literatures (907) 474-7396

Degree: B.A.

Minimum Requirements for Degree: B.A.: 130 credits

In a shrinking world Americans increasingly need to communicate directly with other peoples in order to achieve mutual understanding. Whether it be Japanese or English, the language of a people embodies its unique culture and its way of thinking and feeling. Therefore, to know only one language is to think in only one way.

The study of foreign languages and literatures liberates the student from the confines of one culture.

Requirements

Foreign Language — B.A. Degree

1. Complete the general university and B.A. degree requirements.
2. Complete the following program (major) requirements: Credits

Option A (Arts Option)

a. LING 101 — Nature of Language
b. 6 credits in literature courses other than those of the field of specialization

Option B (Career-oriented Option)

1. Complete the following courses in the first language:
   201/202 - 6-8 credits
   301/302 - 6 credits
   488 - 3 credits

2. Complete a minimum of nine (9) credits in the first language at the 400-level in addition to 488. Students may repeat a 400-level course for credit if the topics vary but may not count any one course more than twice in fulfillment of this requirement.

3. Complete the following courses in the second language (French, German, Japanese, Russian or Spanish):
   201/202; 301/302

The second language does not satisfy the minor requirements.

Where appropriate, courses required under any option above and courses in the first and second language repeated for credit, may be counted toward fulfillment of B.A. requirements listed under 1.

In addition, 100-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.

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

Minimum credits required: 130

MINOR in Foreign Languages

A minor in foreign languages requires 15 credits, 12 of which must be at the 200 level or above.

Forestry

University of Alaska Fairbanks/
Northern Arizona University
Cooperative Program (907) 474-5276

UAF provides training in forest sciences through the Natural Resource Management/Forestry program. The program provides students with a foundation in the biological, social and physical sciences and professional education in forest sciences. The academic program is a blend of classroom, laboratory, and field work to develop skills for a professional career in forestry.

For students interested in pursuing a forestry degree outside of Alaska, UAF's School of Agriculture and Land Resources Management offers a program in cooperation with Northern Arizona University. Students enrolled in Natural Resources Management complete the first two years of their program at UAF, then transfer to Northern Arizona University's forestry program to complete their junior and senior years. The forestry program at Northern Arizona University is accredited by the Society of American Foresters.

The pre-forestry program at UAF introduces students to land resources management and provides lower level courses common to most forestry curricula. Students desiring to transfer to a forestry degree program outside of Alaska should consult their faculty advisor before registering for classes. This will ensure a schedule that provides for the expeditious transfer of credit.

Students who are considering forestry as a career choice should contact the student affairs coordinator within the School of Agriculture and Land Resources Management at (907) 474-5276.
General Science

College of Natural Sciences
Department of Physics

(907) 474-6108

Degrees: B.S., M.S.

Minimum Requirements for Degrees: B.S.: 130 credits; M.S.: 30 additional credits

The B.S. in General Science has been designed to provide a broad background in the Natural Sciences and to allow for specialization in at least two of the disciplines within the Natural Sciences as well as an additional area of associated interest. This degree offers more breadth in the Natural Sciences than the other degree programs and may be classified as an interdisciplinary degree.

Requirements

General Science — B.S. Degree
1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:
   - First Year
     Fall Semester — Methods of Written Comm. — 3
     CHEM 105X — General Chemistry — 4
     BIOL 105X — Fundamentals of Biology — 4
     Credits — 11
   - Spring Semester
     COMM 131X or 141X — 3
     MATH 107-108 — Functions for Calculus/Trigonometry — 6
     CHEM 106X — General Chemistry (II) — 4
     BIOL 106X — Fundamentals of Biology — 4
     Credits — 15
   - Second Year
     Fall Semester
     PHYS 103X — College Physics — 4
     GEOG 205 — Introductory Geography (or equivalent) — 3
     Credits — 18
     - Spring Semester
     GEOG 339 — Research Techniques (or project) — 4
     Credits — 4
   - Third and Fourth Years
     By at least the beginning of his/her junior year, a student in General Science should decide upon his/her major and minor fields of interest. A B.S. in General Science requires the student to choose two majors or one major and two minors in selected fields of interest.
     A major requires the completion of at least 20 credits in addition to the foundation courses in the discipline. The first major must be selected from Biological Sciences, Chemistry, Geosciences, or Physics.
     A student then has the option of selecting: (1) a second major in biological sciences, chemistry, geosciences, physics, or mathematics or (2) 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.
     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.
     Additional Information:
     1. All prerequisites of courses elected must be met.
     2. A grade of “C” or better must be attained in all courses for the major or minor.
     3. One year of German or Russian is recommended.

4. Courses selected to complete the remaining general degree requirements must be the remaining required courses from Perspectives on the Human Condition section of the baccalaureate core.

5. A student does not need to take MATH 107-108 if he/she successfully completes MATH 200X with a grade of “C” or better.

Geological Science — M.S. Degree
1. Complete the general University and Master’s Degree requirements.
2. Complete a minimum of 30 credits of approved courses. At least 24 credits, including thesis and/or research, must be at the 600 level.

The Department of General Science offers a M.S. in Biological Sciences, Chemistry, Geosciences, and Physics. This degree may be described as a "breadth" rather than a "depth" degree, and a candidate is ordinarily pursuing a course of study in which one of these disciplines is cooperating with at least one other discipline within the University. A prospective candidate must meet the general requirements for admission and for the awarding of the degree. At least 21 credits must be earned in science and mathematics. At least 12 credits must be earned in the discipline selected. A thesis (maximum of three credits) or project (no credit) must be completed in the major discipline. It is not intended that the individual courses comprising the program merely satisfy the credit requirements; each course should contribute to the specific aim of the candidate, and the thesis or project should reflect this aim.

For complete information on the graduate program in general science, see the UAF Graduate Catalog.

Geography

College of Liberal Arts
Department of Geography

(907) 474-7494

Degrees: B.A., B.S.

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

The department offers undergraduate courses and degrees in geography and in regional development. Geography provides an organized picture of the earth as a whole and of its interrelated regions and activities. It deals both with the natural resources of the earth and with man’s use of them. Its methodology includes the observation, measurement, description, and analysis of places or areas — their likenesses, differences, interdependence and significance. Geography serves as a bridge between the physical sciences and the social sciences. At UAF, geography is offered as: (a) part of a broad cultural background in a liberal arts curriculum; (b) part of a comprehensive program in biological and earth sciences; (c) background for studies in economics, history, political science, and other social sciences; (d) preparation for teaching geography, earth science, or social science in elementary or secondary schools; (e) technical training for professional geographic work in government, business or industry; (f) preparation for further graduate study in geography, regional planning and related disciplines. Students majoring in geography may elect such advanced work in this and other departments as will provide a concentration either in physical science or in social science.

Requirements

Geography — B.A. Degree
1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:
   - A. Complete 33 or 34 credits in geography as follows:
     GEOG 101 — Introductory Geography of UAF Graduate Catalog...
     GEOG 203 — World Economic Geography — 3
     GEOG 205 — Elements of Physical Geography — 3
     GEOG 339 — Maps and Landscape Analysis — 3
     GEOG 401 — Weather and Climate — 3
     GEOG 482 — Seminar in Geographical Analysis — 3
     Select three of the following regional courses:
     GEOG 302 — Geography of Alaska (3)
     GEOG 303 — Geography of the U.S. and Canada (3)
     GEOG 305 — Geography of Europe (Except U.S.S.R.) (3)
     GEOG 306 — Geography of Russia (3)
     GEOG 311 — Geography of Asia (3)
     GEOG 327 — Cold Lands (3)
     Select two of the following cultural courses:
     GEOG 402 — Resources and Environment (3)
     GEOG 404 — Urban Geography (3)
     GEOG 405 — Political Geography (3)
     Select one of the following technique courses:
     GEOG 309 — Cartography (4)
GEOG 408 — Quantitative Research Techniques (3) .......................... 3-4
Geography elective ................................................................................. 3
B. Approved electives to complete 120 credits.

Geography — B.S. Degree
1. Complete general university requirements and B.S. degree requirements.
2. Complete the following program (major) requirements:
   A. Complete 34 credits in geography as follows:
   GEOG 101 — Introductory Geography or
   GEOG 202 — World Economic Geography ........................................ 3
   GEOG 205 — Elements of Physical Geography ............................ 3
   GEOG 390 — Cartography .................................................................. 4
   GEOG 339 — Maps and Landscape Analysis ..................................... 3
   GEOG 401 — Weather and Climate .................................................... 3
   GEOG 402 — Resources and Environment ........................................... 3
   GEOG 408 — Quantitative Research Techniques ............................ 3
   GEOG 482 — Geography Seminar ..................................................... 3
   Select two of the following regional courses:
   GEOG 302 — Geography of Alaska (3)
   GEOG 303 — Geography of the U.S. and Canada (3)
   GEOG 305 — Geography of Europe (Except U.S.S.R.) (3)
   GEOG 306 — Geography of Russia (3)
   GEOG 311 — Geography of Asia (3)
   GEOG 327 — Cold Lands (3) ............................................................. 6
   Geography elective ........................................................................... 3
B. Approved electives to complete 120 credits.

MINOR in Geography
A minor in geography requires 15 credits in geography including GEOG 101 or 203 and 205.

Geological Engineering

School of Mineral Engineering
Department of Mining and Geological Engineering
(907) 474-7388

Degrees: B.S., M.S.

Minimum Requirements for Degree: B.S. — 137 credits plus 6 credits field course; M.S. — 30-33 additional credits.

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

Candidates for the bachelor of science degree in geological engineering will be required to take a comprehensive exam in the general field (completion of the State of Alaska Engineering-In-Training examination will satisfy the requirement). The State of Alaska Engineer-in-Training examination is a first step toward registration as professional engineers.

Graduates of the program are employed by industry, consulting companies, and government agencies.

Students may initiate their geological engineering program in Anchorage and transfer to Fairbanks upon completion of the freshman and sophomore years. Such students should be in communication with a faculty member of the Department of Mining and Geological Engineering, UAF.

Requirements
Geological Engineering — B.S. Degree
1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

First Year
Fall Semester
GE 101 — Introduction to Geological Engineering ........................... 17 Credits
ENGL 111X — Methods of Written Communications ........................... 3
MATH 200X — Calculus .............................................................................. 3
CHEM 105X — General Chemistry .............................................................. 4
ES 101 — Introduction to Engineering ..................................... 2
Perspectives on the Human Condition ................................. 3
Spring Semester
COMM 131X or 141X ............................................................. 18 Credits
MATH 201X — Calculus .............................................................................. 4
GE 261 — General Geology for Engineers ............................................... 3
CHEM 106X — General Chemistry .............................................................. 4

Second Year
Fall Semester
MATH 202X — Calculus .............................................................................. 4
GEOS 213 — Mineralogy .............................................................................. 4
PHYS 211X — General Physics ................................................................. 4
ENGL 211X or 213X — Intermediate Exposition ..................................... 3
MIN 202 — Mine Surveying ................................................................. 3
Spring Semester
GE 201 — Computer Techniques .............................................................. 3
ES 209 — Statics ........................................................................................... 3
GEOS 214 — Petrology and Petrography ................................................... 3
Perspectives on the Human Condition ................................. 3

Third Year
Fall Semester
MATH 210 — Dynamics .............................................................................. 3
ES 331 — Mechanics of Materials .............................................................. 3
GE 365 — Geological Engineering I .......................................................... 3
GE 375 — Principles of Geol and Terrain Analysis .................................... 3
GEOS 321 — Sedimentology ...................................................................... 3
STAT 200 — Elementary Probability & Statistics .............................. 3
Spring Semester
ES 341 — Fluid Mechanics ..................................................................... 4
GEOS 332 — Ore Deposits and Structure ................................................... 3
GE 372 — Rock Engineering .................................................................... 3
MATH 302 — Differential Equations .......................................................... 3
MINT 370 — Rock Mechanics ................................................................. 6
Summer
GE 381 — Field Methods and Applied Design I ...................................... 2
GE 382 — Field Methods and Applied Design II ..................................... 4

Fourth Year
Fall Semester
GE 405 — Exploration Geophysics .......................................................... 4
GE 471 — Remote Sensing for Engineering ........................................... 3
Perspectives on the Human Condition ............................................. 6
Spring Semester
GE 420 — Subsurface Hydrology .............................................................. 3
GE 480 — Geological Engineering II .......................................................... 3
MINT 408 — Mineral Valuation and Economics ...................................... 3
Technical Electives .............................................................................. 6
Perspectives on the Human Condition ............................................. 6
* At least three out of the six technical elective credits must contain engineering design and be selected by the student in conference with his or her advisor and approved by the department. Technical electives are selected from a list of approved technical electives from the Geological Engineering and other programs.

Geological Engineering — M.S. Degree
The graduate program allows for awarding the master of science degree in geological engineering. The degree consists of a core program and electives in either geotechnical engineering or exploration engineering. University policy pertaining to graduate study leading to a master’s degree apply as approved by the student’s adviser and the Department of Mining and Geological Engineering faculty.

For complete information on the graduate program in geological engineering, see the UAF Graduate Catalog.

Geology

College of Natural Sciences
Department of Geology and Geophysics
(907) 474-7565

Degrees: B.S., M.S., Ph.D.

Minimum Requirements for Degrees: B.S.: 126-136 credits including summer field courses; M.S.: 30 additional credits, including thesis; Ph.D. (open)

Graduates in geology will have broad backgrounds in the earth sciences with firm foundations in mathematics, physics, and chemistry. There are many options available in the geological sciences, and the suggested curricula are
intended to be flexible enough to allow the students to pursue their own emphases in the junior and senior years. The bachelor's degree should prepare one for positions with industry or government or for graduate study. Graduate programs are tailored around minimal core course requirements (M.S. only) to the special research and study interest of the student. In addition to courses listed under the geology and geophysics program, students should check the course listings under the School of Mineral Engineering and the Marine Science program.

All serious students of the geological sciences at UAF should note that in addition to the facilities available directly through the instructional program, there are active research laboratories in the fields of seismology, volcanology, paleomagnetism, isoep geochronology, glaciology and ice physics which are housed in the Geophysical Institute (see also Geophysical Institute under Research). These laboratories can frequently provide topics for M.S. and Ph.D. theses. Other laboratories are also available in other divisions on campus, as listed under research. There are about 40 professional geoscientists in residence on campus, and graduate students normally participate in the ongoing research of these professionals. Similar possibilities exist for the motivated undergraduate.

Requirements

Geology - B.S. Degree

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:
3. Electives (professional and general) to bring total to 126 Credits

Complete either Plan A or Plan B

Plan A - Exploration Geophysics:

1. Complete the following degree program:

Plan B - General Geophysics:

1. Complete the following degree program:

*GEOS 351 is offered at UAF when there is sufficient demand. In years when GEOS 351 is not offered (decision made early in fall semester), students are required to take a 6 credit field geology class at another institution. The Department of Geology and Geophysics will offer financial assistance to geology majors when GEOS 351 is not offered to attend an approved field camp at another institution. Amount of the assistance is dependent on the number of students involved, but will typically be about $500. The Geology and Geophysics undergraduate advisor will assist students in placement in a field geology class and will inform the department head about students requiring financial aid.

**Strongly recommended for students interested in exploration geophysics.
MINOR in Geology:
A minor in geology requires 12-16 credits of approved geosciences courses.

Geology — M.S., M.A.T., or Ph.D. Degrees
For complete information on the graduate programs in geology, see the UAF Graduate Catalog.

Geophysics

College of Natural Sciences
Department of Geology and Geophysics (907) 474-7565
Degrees: M.S., Ph.D.
Minimum Requirements for Degrees: M.S.: 36 credits (beyond a bachelor's degree), Ph.D.: open
For complete information on the graduate programs in geophysics, see the UAF Graduate Catalog.

Guidance and Counseling

College of Liberal Arts
School of Education (907) 474-7341
Degree: M.Ed.
Minimum Requirements for Degree: M.Ed.: 42 credits
For complete information on the graduate program in Guidance and Counseling, see the UAF Graduate Catalog.

History

College of Liberal Arts
Department of History (907) 474-7126
Degrees: B.A.
Minimum Requirements for Degrees: B.A.: 120 credits
The history department seeks to make the student aware of the human cultural heritage, the great problems that have faced humans throughout history and how we have sought to solve them.
The department also trains the student in applying the historical method which offers analysis based on the dimension of time. Discussion, focused on concrete, specific events, persons and judgments explains why things are the way they are. Students will learn effective historical research and writing.
Through the study of history, students may prepare for careers in public service agencies; as members of management teams, particularly in the area of policy analysis; for careers in teaching, or for advanced work in history and other social sciences.

Requirements

History — B.A. Degree
1. Complete general university and B.A. degree requirements.
2. Complete the following program (major) requirements:
   Complete any four of the following: ................................. Credits
   *HIST 100X — Modern World History .................................. 3
   HIST 101 — Western Civilization .................................... 3
   HIST 102 — Western Civilization .................................... 3
   HIST 121 — East Asian Civilization ................................. 3
   HIST 122 — East Asian Civilization ................................. 3
   HIST 131 — History of the U.S. ......................................... 3
   HIST 132 — History of the U.S. ......................................... 3
   HIST 141 — Africa to 1800 ............................................. 3
   HIST 142 — Africa Since 1800 ............................................ 3
   Complete the following: HIST 475 — Historiography ............. 3
   HIST 476 — Historical Method ........................................... 3
   *If used to fulfill core requirements, HIST 100X may not also count towards a History major.
   Complete 15 upper division elective credits in history, including courses from at least two of the following fields: European History, U.S. History, Northern History, Asian History, Colonial History, European History
   HIST 305 — Europe 1789-1850 ........................................ 3
   HIST 306 — Europe 1850-1900 ........................................ 3
   HIST 315 — Europe 1900-1945 ....................................... 3
   HIST 316 — Europe Since 1945 ....................................... 3
   HIST 320 — Modern Scandinavia ..................................... 3
   HIST 321 — English History .......................................... 3
   HIST 322 — English History .......................................... 3
   HIST 401 — Renaissance & Reformation .......................... 3
   HIST 402 — 17th & 18th Century Europe ......................... 3
   HIST 405 — Modern Germany ....................................... 3
   HIST 464 — Modern Russia .......................................... 3
   U.S. History
   HIST 430 — American Colonial History ......................... 3
   HIST 435 — Civil War & Reconstruction .......................... 3
   HIST 440 — Westward Expansion 1763-1867 ..................... 3
   HIST 441 — American & Canadian West 1867-Present ........... 3
   HIST 450 — 20th Century America .................................. 3
   HIST 451 — U.S. Foreign Policy (Independent Learning only) .. 3
   Northern History
   HIST 320 — Modern Scandinavia ..................................... 3
   HIST 345 — Maritime History of Alaska (Independent Learning only) ........................................... 3
   HIST 354 — Canadian History to 1867 ................................ 3
   HIST 355 — Canadian History: 1867 to the Present ............. 3
   HIST 375 — History of the Northern Pacific ...................... 3
   HIST 460 — Russian America ......................................... 3
   HIST 461 — History of Alaska ....................................... 3
   HIST 465 — Russian Eastward Expansion ......................... 3
   HIST 470 — Researching and Writing Alaskan History ........ 3
   HIST 481 — Polar Exploration and its Literature .............. 3
   HIST 482 — Circumpolar Research .................................. 3
   HIST 483 — 20th Century Circumpolar History .................. 3
   Asian History
   HIST 330 — Modern China ............................................ 3
   HIST 331 — Modern Japan ............................................. 3
   HIST 350 — People’s Republic of China ............................ 3

3. Minimum credits required 120
   Students who intend to pursue a career in secondary education are strongly encouraged to complete HIST 461 — History of Alaska, plus at least one upper division course in each of the following areas: European History, U.S. History.
   Students are strongly urged to consult with the History Department regarding the selection of a minor.

MINOR in History:
A minor in history requires the completion of 18 credits in history, six of which must be at the 300 level or above.

Human Services

College of Liberal Arts
Department of Behavioral Sciences and Human Services (907) 474-7240
Degree: B.A.
At the present time, no students are being accepted into the Human Services program.

Minimum Requirements for Degree: B.A.: 121 credits
The B.A. in human services was developed in response to a need for a program at the bachelor’s level which prepares students to function as counselors and social service workers in rural areas. Agencies seeking middle-level, baccalaureate professionals will provide career placements. Students in this program gain knowledge about various agencies in the state that address social service needs and are trained in generic skills such as agency administration, counseling, and the usual content areas which are customarily addressed by such agencies (e.g., alcoholism, drug abuse, child and youth care, and health problems). Students will become familiar with cross-cultural issues that influence human service needs and are taught to integrate that knowledge with human service planning, delivery and evaluation of services.
The human services program at the University of Alaska Fairbanks is interdisciplinary in its approach, cross-cultural in its content and rural in its orientation. The program is offered at the Fairbanks, Chukchi and Northwest campuses.
### Requirements

**Human Services — B.A. Degree**

1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following integrated major-minor requirements:
   - Behavioral sciences core (24 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMSV 201 — Introduction to Human Services</td>
<td>3</td>
</tr>
<tr>
<td>PSY/SOC 250 — Introductory Statistics for Behavioral Sciences</td>
<td>3</td>
</tr>
<tr>
<td>SOC 301 — Rural Sociology</td>
<td>3</td>
</tr>
<tr>
<td>PSY/SOC 473 — Social Science Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSY 310 — Cross-Cultural Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 345 — Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 408 — American Minority Groups</td>
<td>3</td>
</tr>
<tr>
<td>PSY 101 — Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Departmental core (15 credits)</td>
<td></td>
</tr>
<tr>
<td>SOC 101 — Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 240 — Developmental Psychology in Cross-Cultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>PSY 304 — Personality</td>
<td>3</td>
</tr>
<tr>
<td>PSY 380 — Human Behavior in the Arctic</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 242 — Native Cultures of Alaska</td>
<td>3</td>
</tr>
<tr>
<td>Human Services (18)</td>
<td></td>
</tr>
<tr>
<td>Select 18 credits from the following:</td>
<td></td>
</tr>
<tr>
<td>HMSV 210 — Crisis Intervention</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 255 — Foundations of Counseling I</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 356 — Foundations of Counseling II</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 230 — Alcoholism: Theories of Etiology</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 330 — Alcoholism: Treatment and Prevention</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 360 — The Helping Role in Child Abuse and Neglect</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 410 — Management of Human Services Programs</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 415 — Group Counseling</td>
<td>3</td>
</tr>
<tr>
<td>HMSV 488 — Practicum in Human Services</td>
<td>3</td>
</tr>
<tr>
<td>*HMSV/PSY 445 — Community Psychology</td>
<td>3</td>
</tr>
<tr>
<td>*PSY/SOC 370 — Drugs and Drug Dependence</td>
<td>3</td>
</tr>
<tr>
<td>*SOC 310 — Sociology of Later Life</td>
<td>3</td>
</tr>
<tr>
<td>*SOC 242 — The Family: A Cross-Cultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>RD 325 — Community Organization and Development Strategies</td>
<td>3</td>
</tr>
<tr>
<td>Minimum Credits Required for Degree</td>
<td>121</td>
</tr>
</tbody>
</table>

* These courses, when not applied towards the major, may be applied to fill distribution requirements.

**MINOR in Human Service**

A minor in human services requires the satisfactory completion of 15 credits of approved human services courses including HMSV 201 and 210.

### Human Service Technology

**College of Rural Alaska**

**Tanana Valley Campus; Interior-Aleutian Campus;**

**Northwest Campus**

(907) 474-6658

**Degree:** A.A.S.

**Minimum Requirements for Degree:** 60 credits

The Human Service Technology program provides training and knowledge in basic helping skills needed for entry level employment in public, private and volunteer human service agencies. The Human Service Technician may provide case management, needs assessment, advocacy, crisis intervention and stabilization, and supportive task-centered short term counseling under the supervision of a specialist worker and usually within a multidisciplinary team. Human Service Technicians are employed in a wide variety of human service settings such as mental health, Native corporations, developmental disabilities, public assistance, corrections and substance abuse treatment. Persons seeking a career in human service should recognize that in order to be successful they must be emotionally stable, creative and flexible. Human Service Technicians will have to be able to work with diverse groups of people and individuals with a wide variety of ages, social and cultural backgrounds and life situations. Upon completion of the Human Service Technology major, students are eligible to be certified Counselor Technician in the State of Alaska.

### Requirements

**Human Service Technology — A.A.S. Degree**

1. Complete the following general university and A.A.S. requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 111X and ENGL 211X, 212*, or 213X</td>
<td>6</td>
</tr>
<tr>
<td>COMM 131X or 141X</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics or Natural Science</td>
<td>3</td>
</tr>
<tr>
<td>A math or natural science course at the 100 level or above</td>
<td>3</td>
</tr>
<tr>
<td>PSY 101 — Introduction to Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Complete the following major degree requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HST 120 — Cultural Diversity and Human Service</td>
<td>3</td>
</tr>
<tr>
<td>HST 205 — Basic Principles of Group Counseling</td>
<td>3</td>
</tr>
<tr>
<td>HST 210 — Crisis and Grief Counseling</td>
<td>3</td>
</tr>
<tr>
<td>HST 215 — Individual Interviewing and Assessment</td>
<td>3</td>
</tr>
<tr>
<td>HST 230 — Human Service Practicum I (8 hour/week)</td>
<td>2</td>
</tr>
<tr>
<td>HST 231 — Human Service Practicum II (8 hour/week)</td>
<td>2</td>
</tr>
<tr>
<td>HST 240 — Human Service Seminar I</td>
<td>1</td>
</tr>
<tr>
<td>HST 241 — Human Service Seminar II</td>
<td>1</td>
</tr>
<tr>
<td>HST 301 — Ethics in Human Service</td>
<td>3</td>
</tr>
<tr>
<td>HST 305 — Substance Abuse Counseling</td>
<td>3</td>
</tr>
<tr>
<td>PSY 240 — Developmental Psych. in Cross-Cult. Perspec.</td>
<td>3</td>
</tr>
<tr>
<td>SOC 242 — The Family: A Cross-Cultural Perspective</td>
<td>3</td>
</tr>
<tr>
<td>SWK 103 — Social Work in the Human Services</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal</td>
<td>39</td>
</tr>
</tbody>
</table>

3. Complete 9 credits from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HST 250 — Current Issues in Human Service</td>
<td>3</td>
</tr>
<tr>
<td>and/or General Electives</td>
<td>6</td>
</tr>
<tr>
<td>Degree Total</td>
<td>60</td>
</tr>
</tbody>
</table>

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

**MINOR in Human Service Technology**

A minor in Human Service Technology is available to students pursuing a Bachelor of Science or a Bachelor of Arts degree. This minor will give students the opportunity to gain knowledge and skills applicable to careers in the helping professions. Upon completion of the Human Service Technology minor students are eligible to be certified as a Counselor Technician in the State of Alaska.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HST 125 — Introduction to Addictive Processes</td>
<td>3</td>
</tr>
<tr>
<td>HST 210 — Crisis and Grief Counseling</td>
<td>3</td>
</tr>
<tr>
<td>HST 215 — Individual Interviewing and Assessment</td>
<td>3</td>
</tr>
<tr>
<td>HST 250 — Current Issues in Human Service</td>
<td>3</td>
</tr>
<tr>
<td>HST 301 — Ethics in Human Service</td>
<td>3</td>
</tr>
<tr>
<td>HST 305 — Substance Abuse Counseling</td>
<td>3</td>
</tr>
<tr>
<td>Minor total</td>
<td>18</td>
</tr>
</tbody>
</table>

**Substance Abuse Counselor Certification:**

The Alcohol and Drug Abuse Certification Review Board has approved the following courses for 45 training hours each toward certification of recertification of Substance Abuse Counselors in the State of Alaska:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HST 125 — Introduction to Addictive Processes</td>
<td>3</td>
</tr>
<tr>
<td>HST 210 — Crisis and Grief Counseling</td>
<td>3</td>
</tr>
<tr>
<td>HST 215 — Individual Interviewing and Assessment</td>
<td>3</td>
</tr>
<tr>
<td>HST 250 — Current Issues in Human Service</td>
<td>3</td>
</tr>
<tr>
<td>HST 301 — Ethics in Human Service</td>
<td>3</td>
</tr>
<tr>
<td>HST 305 — Substance Abuse Counseling</td>
<td>3</td>
</tr>
<tr>
<td>Currently certified Substance Abuse Counselors are eligible for transfer</td>
<td></td>
</tr>
<tr>
<td>credit toward th Human Service Technology degree. Please contact the Human</td>
<td></td>
</tr>
<tr>
<td>Service Technology Program Coordinator at 474-6658 for more information.</td>
<td></td>
</tr>
</tbody>
</table>

### Interdisciplinary Studies

**_degrees:** A.A.S., B.A., B.S., B.T., M.A., M.S., Ph.D.

**Minimum Requirements for Degrees:** A.A.S.: 60 credits; B.A., B.S. or B.T.: 130 credits; M.A. and M.S.: 30 or more credits; Ph.D.: open

**Associate or Baccalaureate Degree —**

Interdisciplinary Studies is a program available to UAF students within the interdisciplinary program option provides flexibility to students with well-defined goals who do not fit into one of the
established majors offered by the university. Students may submit their proposal for an interdisciplinary program upon completion of 15 credits at UAF and preferably 30 credits (for the associate's degree), or 60 credits (for the bachelor's degree), prior to graduation. The proposed curriculum must differ significantly from established degree programs at UAF and will require evidence that the necessary facilities and faculty are available. Students must have completed a normal undergraduate degree. All general requirements for the A.A.S., B.A., B.S., or B.T. degree must be met.

In developing an interdisciplinary proposal, the student should specify the degree (A.A.S., B.A., B.S., or B.T.), include an explanation of how the proposed program differs substantially from established UAF programs, and discuss how current UAF resources are adequate to meet the requirements of the proposed program. The student then obtains an advisory committee of at least three faculty members from the appropriate disciplines. 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 to the Provost (Vice Chancellor for Academic Affairs and Research) their proposal for the program they wish to pursue, specifying the degree, proposed curriculum and rationale.

Students interested in pursuing an interdisciplinary A.A.S., B.A., B.S., or B.T. degree, or who want to explore this as a degree option, can contact the Academic Advising Center to receive assistance in finding faculty advisors and developing their curriculum proposal.

Graduate — Interdisciplinary proposals for graduate degrees must be submitted to the Director of Graduate Programs who will coordinate the review process. For complete information on interdisciplinary graduate programs, see the UAF Graduate Catalog.

Japanese Studies

Interdisciplinary

Degree: B.A.

Minimum Requirements for Degree: 130 credits

An in-depth study of Japanese language and culture, aimed at the application of linguistic skills and cultural insights to specific career opportunities. Japanese is classified among the most difficult of foreign languages for American students. The highlight of the major is, therefore, one semester of intensive study in Japan during the junior or senior year. This interdisciplinary program will culminate in a senior seminar on contemporary Japan. Students will begin their research project for the seminar while studying at our exchange university, Nagoya Gakuin, or at another pre-approved program. Students are encouraged to use this major in conjunction with a discipline-based major.

Requirements

Japanese Studies — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

Japanese Studies core courses (33 credits)
- GEOG 311 - Geography of Asia (3 credits)
- HIST 121 - East Asian Civilization (3 credits)
- or HIST 122 - East Asian Civilization (3 credits)
- HIST 331 - Modern Japan (3 credits)
- JPN 352 - Japanese Cultural Traditions (3 credits)
- JPN 301 - Advanced Japanese (3 credits)
- JPN 302 - Advanced Japanese (3 credits)
- JPN 497 - Advanced language study in Japan (12 credits)
- JPN 475 - Seminar on Contemporary Japan (3 credits)

*These courses are offered in the Japanese language. Students may study in Japan during their junior year, as long as they complete a minimum of 18 credits of Japanese language at the upper division level to fulfill the Japanese Studies core requirements. 15 credits of language may be taken in Japan, and at least three upper division language credits must be taken in residence at UAF.

Concentration courses (12 credits)
- International Business Concentration (with Business minor)
  Select twelve credits from the following:
  - BA 461 - International Finance (3 credits)
  - BA 460 - International Business (3 credits)
  - BA 462 - Corporate Strategy (3 credits)
  - ECON 463 - International Economics (3 credits)
  - GEOG 405 - Political Geography (3 credits)
  - PS 312 - East Asian Governments and Politics (3 credits)

Students planning a double major for a single B.A. may double count a maximum of nine credits from the major requirements towards a second major. Students earning two degrees (BA/BBA) are not subject to double counting restrictions.

Journalism and Broadcasting

College of Liberal Arts
Department of Journalism and Broadcasting

(907) 474-7761

Degree: B.A.

Minimum Requirements for Degree: 124 credits

The curriculum in Journalism and Broadcasting offers a balance of professional and theory courses for majors and non-majors. Majors are able to take a variety of skills and theory courses while acquiring a strong liberal arts background. Non-majors, including those minoring in Journalism and Broadcasting, may choose from a wide selection of courses to meet their needs.

Besides gaining a solid academic background in the classroom, students get practical experience by working with media on and off campus. On campus, these include public television and public radio stations and a student-owned FM-stereo station. Print journalists work on the campus newspaper, Off campus, students may choose from a variety of radio and television stations. Print journalists work at the Fairbanks Daily News-Miner.

Students in the department also have access to the department's state-of-the-art laboratory facilities. These include a computerized newswriting lab, typography lab, audio production lab, video editing lab and two photography labs.

The department is fully accredited by the Accrediting Council on Education in Journalism and Mass Communications.

Requirements

Journalism — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

A. Complete the following courses in journalism (16 credits):
- JB 101 — Introduction to Mass Communications (3 credits)
- or JB 102 — Introduction to Broadcasting (3 credits)
- JB 301 — News Reporting and Writing (4 credits)
- JB 320 — Journalism in Perspective (3 credits)
- JB 400 — Media Practicum (3 credits)
- JB 413 — Mass Media Law and Regulations (3 credits)

B. Complete one of the following sequences:
- News-Editorial (18 credits)
- or Internet and Electronic Resources (3 credits)
- or Magazine Article Writing (3 credits)
- or Typography and Publication Design (3 credits)
- or Principles of Advertising (3 credits)
- or Mass Media and Society (3 credits)
Crisis and Grief Counseling

Introduction to Broadcast

Research Seminar

Photojournalism

Women, Principles of professionalism so necessary to create and maintain a criminal justice system which will mirror our otherwise advanced civilization.

Requirements

Justice — B.A. Degree

1. Complete the general university requirements and general requirements for the B.A. degree.

Electives chosen to fulfill the general requirements for the B.A. degree must be approved in advance by the director of the justice program.

2. Complete the following program (major) requirements:

Credits

Justice Core Course Requirements (21 credits)

JUST 110 — Introduction to Justice ....................................... 3
JUST 222 — Research Methods ........................................... 3
JUST 251 — Criminology ..................................................... 3
JUST 258 — Juvenile Delinquency ......................................... 3
JUST 330 — Justice and Society ......................................... 3
JUST 340 — Rural Justice .................................................... 3
JUST 460 — Political Philosophy of Crime Control ....................... 3

Justice Electives: 15 credits in justice courses which may include any two of the following Human Service Technology courses:

HST 125 — Introduction to Addictive Processes ......................... 3
HST 210 — Crisis and Grief Counseling .................................. 3
HST 215 — Individual Interviewing and Assessment ..................... 3
HST 301 — Ethics in Human Service ..................................... 3

3. Minimum credits required 120

MINOR in Justice:

Complete 15 credits in justice, including JUST 110.

Justice - A.A.S.

This degree program is presently suspended.

Law

Pre-Professional Advising (907) 474-6396

Law education prepares students to become attorneys. Attorneys are concerned with the interpretation of law and its application to specific situations. This involves doing in-depth research, writing reports and briefs, advising clients and representing parties in reports and briefs, advising clients and representing parties in courts. Often law school graduates go onto hold government office, or to serve as judges, public servants, teachers or administrators.

Law school consists of three years of graduate level study. Instruction includes classroom lecture and discussion, considerable outside research, and practice of courtroom procedures. Upon graduation, students must pass a state bar exam in order to practice.

Completion of a bachelor's degree is required for admission into most law schools. While law schools do not prescribe a specific major for admission, students should have a strong academic record and high scores on the Law School Admission Test (LSAT).

A liberal education is the best preparation for law school. Students planning a legal career should select courses which are designed to enhanced communication skills, both oral and written, to expand understanding of human values and institutions, and to develop analytical reasoning and logical thinking. Areas of study which are valuable for pre-law majors are English, philosophy, history, literature and the social sciences. Additionally, courses in accounting and economics are recommended. Recent trends indicate that students with an undergraduate degree in the natural sciences are gaining in favor for law school admission.

Students interested in a legal career are assigned a special pre-law advisor, through the Academic Advising Center, to discuss program planning, professional schools and financial planning.
freedom, privacy, justice and rights. While the program is of special interest to students who plan graduate study in law or careers in government service, many students will simply share a desire to understand the role of law in society. The program provides students with tools for reasoned appraisal of how the law works, the ideas and policies that underlie it, and the ability to think clearly and analyze arguments critically.

**Requirements**

**MINOR in Law and Society**

Complete the following courses (9 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS 303 - Politics and the Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>PS 330 - Law, Justice and Society</td>
<td>3</td>
</tr>
<tr>
<td>PS 435 - Constitutional Law: Institutions and Governmental Poker or PS 436</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Elective Courses: (9 credits) Complete at least 9 credits from the following (or other approved law related course):
| AKSP 230 - Federal Indian Law                                                        | 3       |
| ANS 425 - Federal Indian Law and Alaska Natives                                      | 3       |
| BA 317 - Employment Law                                                             | 3       |
| BA 327 - Collective Bargaining and Labor Relations                                  | 3       |
| BA 330 - Legal Environment of Business                                              | 3       |
| JB 413 - Mass Media Law and Regulation                                              | 3       |
| JUST 351 - Criminal Law                                                             | 3       |
| JUST 354 - Procedural Law                                                           | 3       |
| PS 450 - Comparative Aboriginal Rights and Policies                                 | 3       |
| PS 651 - Law, Justice and Society in the Circumpolar North                          | 3       |

Minor Total: 18

**Library Science**

**Pre-Professional Advising** *(907) 474-6692*

The field of library and information science engages students in professional positions concerned with the management of information in libraries and other environments. One graduate program states that the "contemporary librarian has become an essential part of the complex communication/information network that now encircles the globe. Today's information professional must understand how information is created and disseminated in society; must be familiar with print, non-print and electronic media; and must be adept in the use of computers, automated techniques, and information networks."

For a professional career in library science, a one-to-two year program of graduate study is generally required. Course work in the graduate program may include a broad spectrum of areas. These are: planning and evaluation related to acquiring, organizing and accessing information in library settings; management tools and design as well as provision of information services. Special emphasis on topics such as law or medicine may also be available with some programs.

The caliber of one's undergraduate work, as well as test results on the Graduate Record Exam (GRE), are of very important when applying for admission to a program of professional library studies. Library Schools prepare professionals from a variety of academic backgrounds.

At UAF, pre-library science students pursue an extensive general background in their education. Students are advised to also include courses in computer applications and programming, statistics and foreign languages so as to satisfy the demands of the library science field and the admission requirements of the prospective graduate programs. As the number of special libraries increases, concentration in the social and physical sciences is equally important. Advisement for students interested in a career in library science is available through the Academic Advising Center.

**Linguistics**

**College of Liberal Arts**

**Linguistics Program** *(907) 474-7874*

Degree: B.A.

Minimum Requirements for Degree: B.A.: 120 credits

Linguistics is the scientific 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 Linguistics Program offers undergraduate courses and seeks to give an overview of the discipline to make students aware of the many aspects of that uniquely human phenomenon, language.

**Requirements**

**Linguistics — B.A. Degree**

1. Complete the general university requirements.
2. Complete the B.A. degree requirements.
3. Complete the following program (major) requirements:

**A Background-related Requirements (15-18 credits)**

Four semesters (or equivalent) of one foreign or Native language and two semesters of a second.

(English is recommended at least one of the languages be other than an Indo-European language)

**LING 101 — Nature of Language** 3

**B. Major requirements (30 credits)**

Complete the following Linguistics courses:

**LING 318 — Intro. to Phonetics and Phonology** 3
**LING 320 — Intro. to Syntactic Theory** 3
**LING 430 — Historical Linguistics** 3

Complete 7 of the following courses:

**LING 216 — Languages of the World** 3
**LING/ED 303 — Language Acquisition** 3
**LING 340 — Aspects of Bilingualism** 3
**LING 410 — Second Language Teaching** 3
**LING 420 — Semiotics** 3
**LING 450 — Language Policy and Planning** 3
**LING 482 — Topics in Linguistics** 3

(may be taken twice)

**ANL 215 — Alaska Native Languages** 3
**ANL 216 — Alaska Native Languages** 3
**AN 320 — Language and Culture** 3
**ANTH/WMS 308 — Language and Gender** 3
**ENGL 318 — Modern English Grammar** 3
**ENGL 462 — Applied English Linguistics** 3
**ENGL 472 — History of the English Language** 3
**COMM 320 — Communication and Language** 3

Where appropriate, courses listed under A may be counted toward fulfillment of B.A. requirements listed under 2.

4. Minimum credits required: 120

**MINOR in Linguistics**

A minor in linguistics requires 15 credits in linguistics. Three of these credits may be from related courses in other departments as listed under B. above.

**Marine Biology**

**School of Fisheries and Ocean Sciences**

**Graduate Program in Marine Sciences and Limnology** *(907) 474-7531*

**Degrees:** M.S., Interdisciplinary Ph.D.

Minimum Requirements for Degree: M.S.: 30 credits (beyond a bachelor's degree); Ph.D.: open

The graduate curriculum in marine biology, offered by the Department of Marine Sciences and Limnology, focuses on marine organisms, while biological oceanography focuses on how biological processes influence and are influenced by the ocean environment.

Graduate students are afforded excellent opportunities for laboratory and field research through the Institute of Marine Science. Laboratory facilities are available at Fairbanks, the Seward Marine Center, the Juneau Center for Fisheries and Ocean Science, the Fishery Industrial Technology Center at Kodiak, and at the Kachemak Bay Laboratory. Opportunities for field work are available on the RV Alpha Helix, which operates along the Alaskan Coast and in the Bering Sea, and on the RV Little Dipper, which operates in Resurrection Bay.

Students are admitted to the Graduate Program in Marine Sciences and Limnology on the basis of their ability and the capability of the program to meet their particular interests and needs. Requests for admission are considered continuously, and each application is reviewed by the department faculty. Stipends for financial support are awarded competitively. Limited fellowships are available. Most students are supported on research projects that relate directly to their degree research.

For complete information on the graduate program in marine biology, see the UAF Graduate Catalog.
Mathematics

College of Liberal Arts
Department of Mathematics

(907) 474-7332

Degrees: B.A., B.S., M.A.T., M.S., Ph.D.

Minimum Requirements for Degrees: B.A.: 120 credits; B.S.: 120 credits;
M.A.T.: 36 additional credits; M.S.: 30-35 additional credits.

The number of new fields in which professional mathematicians find
employment grows continually. Several programs are offered by the Department
of Mathematical Sciences for students majoring in mathematics, computer
science, or statistics. (See the separate listing elsewhere in this catalog for
information concerning the Department of Mathematical Sciences programs in
Computer Science and Statistics.) Options exist for those who are planning
careers in industry, government, or education. The Department of Mathematical
Sciences also offers degree programs in statistics and computer science which
are described elsewhere in this catalog.

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 of Mathematical Sciences maintains a math lab which is
available for assistance to all students studying mathematics at the baccalaureate
level.

Requirements

All students planning to major in one of the mathematical sciences must be
ready to matriculate into MATH 200, Calculus I, before they will be allowed to
declare mathematics as their major.

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. (All mathematics majors — including double majors — must have
an advisor from the Department of Mathematical Sciences.) Students preparing
to teach mathematics in secondary schools should contact the Department of
Education for a list of mathematics and education courses necessary to obtain an
Alaskan teaching certificate.

Mathematics — B.A. or B.S. Degree

1. Complete the general university requirements and requirements for a
   B.A. or B.S. degree. A portion of the science requirement for the B.S,
   should be met with a one year physics sequence, PHYS 103X-104X
   or PHYS 211X-212X.

2. Complete the following program (major) requirements:

   Credits
   MATH 200X, 201X, 202X — Calculus sequence ................... 12
   MATH 215 — Intro. to Mathematical Proofs ..................... 2
   MATH 314 — Linear Algebra ..................................... 3
   MATH 308 — Abstract Algebra .................................... 3
   MATH 401 — Advanced Calculus ................................... 3
   MATH 490 — Senior Seminar ...................................... 1

   TOTAL ......................................................... 24

Complete an elective package in the Mathematical Sciences
consisting of at least 21 credits. This package must be approved by
a Mathematical Sciences advisor and must include at least 12 credits
at the 300-level or above. Students who are obtaining a single B.S.
or B.A. with mathematics as a second major may substitute up to 9
credits of approved courses with strong mathematical content for
Mathematical Sciences electives.

3. Minimum credits required

   The following sample elective packages are suggested for
   students with interests in the indicated areas of emphasis.

   A. Pure Math
   MATH 305 — Geometry .......................................... 3
   MATH 307 — Discrete Mathematics ............................. 3
   MATH 402 — Advanced Calculus ................................ 3
   MATH 404 — Topology .......................................... 3

   Approved electives .............................................. 9

   TOTAL ......................................................... 21

   B. Applied Math
   MATH 302 — Differential Equations ............................. 3
   MATH 421 — Applied Analysis I ................................ 4
   MATH 422 — Applied Analysis II ................................ 4

   Approved electives .............................................. 9

   TOTAL ......................................................... 21

MINOR in Mathematics:
A minor in Mathematics requires completion of Math 200-201-202, in
addition to nine departmentally approved credits. These courses can be used to
simultaneously satisfy other major or general distribution requirements.

Mathematics — M.S., M.A.T. or Ph.D. Degree

For complete information on the graduate programs in mathematics, see the
UAF Graduate Catalog.

Mechanical Engineering

School of Engineering
Department of Mechanical Engineering

(907) 474-7209

Degrees: B.S., B.S., M.S. Minimum Requirements for Degrees: B.S.: 130 credits;
M.S.: 30 additional credits.

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.

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 in mechanical engineering may elect to complete an emphasis in
petroleum or aerospace engineering each consisting of 12 credit hours. Six of
these credit hours can be used to fulfill the elective credit requirement in the
mechanical engineering curriculum.

Because of the unique location of the University of Alaska Fairbanks,
special emphasis is placed on cold regions engineering problems. This fact is
highlighted in the mechanical engineering program by the technical elective,
arctic engineering.

Candidates for the bachelor of science degree in mechanical engineering will
be required to take the State of Alaska Engineer-in-Training Examination in
their general field.

Requirements

Mechanical Engineering — B.S. Degree

1. Complete the general university requirements.

2. Complete the following degree and program (major) requirements.

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

First Year

Fall Semester ............................................................... 16 credits
   ENGL 111X — Methods of Written Commun. .................. 3
   MATH 200X — Calculus ............................................ 4
   MATH 201X — Calculus ............................................ 4
   MATH 202X — Calculus ............................................ 4

Winter Semester .............................................................. 16 credits
   MATH 204X — Calculus ............................................ 4
   MATH 306X — Calculus ............................................ 4
   MATH 307X — Discrete Mathematics ......................... 4
   MATH 308X — Abstract Algebra ............................... 4
   MATH 309X — Linear Algebra .................................. 4
   MATH 312X — Linear Algebra .................................. 4
DEGREES AND PROGRAMS / 85

Calculus
Economics Analysis
Mechanical

seven semesters.
Cooperative
Medical Technology
University of Washington

Fall Semester
PHYS 211X — General Physics
MATH 202X — Calculus
ME 321 — Industrial Processes
ENGL 211X — Intermediate Exposition, With Modes of Literature
Spring Semester
PHYS 212X — General Physics
MATH 302 — Differ. Equations
ES 310 — Dynamics
ES 346 — Thermodynamics

Fall Semester
ES 101 — Introduction to Engineering
CHEM 105X — General Chemistry
Perspectives on the Human Condition
Spring Semester
COMM 131X or 141X
MATH 201X — Calculus
ES 201 — Computer Techniques
CHEM 106X — General Chemistry
Perspectives on the Human Condition

Second Year
Fall Semester
17 credits
PHYS 211X — General Physics
MATH 202X — Calculus
ES 307 — Elements of Electrical Engr.
ES 331 — Mechanics of Materials
ES 341 — Fluid Mechanics
Perspectives on the Human Condition
Spring Semester
16 credits
ME 302 — Mechanical Design I
ME 313 — Mech. Engr. Thermody.
ME 441 — Heat and Mass Transfer
ES 308 — Instrumentation and Measurement
Perspectives on the Human Condition

Third Year
Fall Semester
16 credits
ES 301 — Engineering Analysis
ES 307 — Elements of Electrical Engr.
ES 331 — Mechanics of Materials
ES 341 — Fluid Mechanics
Perspectives on the Human Condition
Spring Semester
16 credits
ME 302 — Mechanical Design I
ME 313 — Mech. Engr. Thermody.
ME 441 — Heat and Mass Transfer
ES 308 — Instrumentation and Measurement
Perspectives on the Human Condition

Fourth Year
Fall Semester
17 credits
ME 408 — Dynamics of Systems
ME 415 — Thermal Systems Lab
ME Elective**
ME 334 — Elements Material Science Engr
Technical Elective*
Perspectives on the Human Condition
Spring Semester
15 credits
ME 403 — Mechanical Design II
ME 487 — Design Project
ME Elective**
ESM 450 — Econ. Analysis and Operations
Elective

* Engineering Course at 400 level or above
** Mechanical Engineering Course at 400 level or above

Selection of the elective courses must be made in consultation with
ME advisor.

Mechanical Engineering — M.S. Degree
For complete information on the graduate program in Mechanical Engineering, see the UAF Graduate Catalog.

Medical Technology

University of Alaska Fairbanks/University of Washington
Cooperative Program

For students interested in pursuing a Bachelor of Science degree in Medical Technology, UAF offers a program in cooperation with University of Washington. Students enrolled in this program complete the first four semesters of their program at UAF, then apply for acceptance into the professional phase of the medical technology program at the University of Washington for an additional seven semesters. Up to four bona fide Alaska resident students will be accepted into the professional phase each year, if they qualify for admittance to the program. A Bachelor of Science degree is granted from University of Washington at the completion of the program.

While at UAF, students are required to complete 60 semester credits with a GPA of 3.0, to include the following courses: biology (Biol 105, 106), chemistry (Chem 105, 106), and math (Math 271, 272).

For further information on the baccalaureate medical technology program, please contact the Academic Advising Center at the University of Alaska Fairbanks at (907) 474-6396.

Medicine

Pre-Professional Advising (907) 474-7608 or 474-6396

Physicians serve a broad range of functions within the field of medicine: diagnosing disease, prescribing treatment, supervising patient care and participating in the improved delivery of health. As an alternative to direct patient care, physicians often branch off into other arenas of medicine, such as basic and applied research, teaching or administration.

Professional medical education consists of four years of graduate level study. Typically, the first two years of medical school are comprised of classroom instruction and laboratory work; the second two years consist of clinical rotations. Following graduation from medical school, students may elect to continue their training by doing a one-year internship and/or a one-to-three year residency. The residency option is required in order to specialize in medicine.

Upon application to medical school, a student's overall academic achievement will be evaluated together with results of the Medical College Admission Test (MCAT). While medical schools do not require that students pursue a specific major at the undergraduate level, applicants are generally expected to have a foundation in biology, chemistry, and physics. At UAF the courses which satisfy this are: chemistry (Chem 103X and 104X or 105X and 106X), organic chemistry (Chem 321 and 322), anatomy and physiology (Biol 211X and 212X), biology (Biol 105X and 106X), and physics (Phys 103X and 104X).

In addition, medical schools recommend students have a background in the social sciences and humanities. While medical schools will consider applicants who have completed three years of undergraduate work, most entering medical students have completed a bachelor's degree.

Students who are considering medicine as a career choice should contact the Dean of the College of Natural Sciences or the Academic Advising Center to be assigned an academic advisor. Program advisement, exploration of professional schools and licensing requirements, and financial planning are available to meet the needs of students in fulfilling their career aspirations.

Military Science

College of Liberal Arts
Department of Military Science (907) 474-7501

Minor only

The Army Reserve Officers' Training Program 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 purpose 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.

The program of instruction is designed to complement the student's goal of obtaining a bachelor's degree in a course of study of his/her own choosing. Through academic instruction and practical experience laboratories, the student becomes familiar with the leadership, management and decision-making 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. Military science courses are open to all students regardless of whether or not they intend to seek an Army commission.

Basic Course — All UAF students are eligible to enroll. There is no military obligation incurred by enrolling in any of the basic courses.

Advanced Course — Those students who successfully complete the basic course and desire to pursue the program for a commission, may apply for enrollment in the advanced course. 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 selected to compete for a commission are provided a $150-per-month subsistence allowance. They also incur a military obligation. Students who wish to enroll in advanced course classes, but do not
desire to earn a commission, may do so with the approval of the department head. The obligation and subsistence allowance will be waived for those students.

Academic Credit — A maximum of 23 credits in military science courses may be used as elective credit toward fulfillment of baccalaureate degree requirements.

MINOR in Military Science — Military science is an approved minor for the bachelor of arts degree. The requirements for the minor are the satisfactory completion of 19 credits in military science as approved by the department.

Financial Aid — Advanced course students receive a monthly subsistence allowance during the school year which presently amounts to approximately $2,000 for the two-year period. This allowance is tax free.

Uniforms and Equipment — Students enrolled in military science are furnished uniforms and textbooks by the department.

Awards — Awards are made annually at the UAF awards ceremony. Awards, such as the governor’s and chancellor’s medals, are presented for outstanding achievement in the ROTC program, academic achievement, and leadership.

ROTC Rifle Team — Competition is scheduled with civilian and military teams in the state. Postal matches with other schools are fired throughout the year. All necessary equipment is furnished by the Department of Military Science at no cost to the student.

Two-Year Program — A special Basic Camp 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 PMS prior to June annually for information concerning the camp.

Scholarships — Army ROTC scholarships pay all tuition, lab fees, and provide a book allowance in addition to the $150 monthly stipend. Scholarships are awarded for two or three years on a competitive basis. Interested students should contact the military science department for further details.

Mineral Preparation Engineering

School of Mineral Engineering
Department of Mining and Geological Engineering

(907) 474-7388

Degree: M.S.

Minimum Requirements for Degree: 30-36 credits beyond bachelor’s degree. For complete information on the graduate program in mineral preparation engineering, see the UAF Graduate Catalog.

Mining Engineering

School of Mineral Engineering
Department of Mining and Geological Engineering

(907) 474-7388

Degrees: B.S., M.S., E.M.

Minimum Requirements for Degrees: B.S.: 136 credits; M.S.: 30-36 additional credits; E.M.: thesis and 5 years of experience

In the mining engineering curriculum, particular emphasis is placed upon engineering as it applies to the exploration and development of mineral resources and upon the economics of the business of mining. The program allows the student the choice of technical electives to develop in areas of exploration, mining or mineral beneficiation.

Candidates for the bachelor of science degree in mining engineering will be required to take a comprehensive examination in their general field (completion of the State of Alaska Engineer-in-Training examination will satisfy this requirement). The state of Alaska Engineer-in-Training is a first step toward registration as professional engineers.

Students may initiate their mining engineering program in Anchorage and transfer to Fairbanks upon completion of their freshman or sophomore year. Such students should be in communication with faculty of the Mining Engineering Department, UAF.

Requirements

Mining Engineering — B.S. Degree
1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

First Year
Fall Semester
ENGL 111X — Methods of Written Communications ........................................... 3
MATH 200X — Calculus ....................................................................................... 4
CHEM 105X — General Chemistry ...................................................................... 4
MIN 103 — Introduction to Mining Engineering ...................................................... 2
MIN 104 — Mining Safety and Operations Lab ...................................................... 1
Perspectives on the Human Condition ................................................................. 3
Spring Semester
MIN 313 — Introduction to Mineral Preparation .................................................... 3
GEOS 261 — General Geology for Engineers ...................................................... 3
LS 101 — Library Information and Research ...................................................... 1

Second Year
Fall Semester
MIN 201X — Calculus ....................................................................................... 4
MATH 202X — Calculus ....................................................................................... 4
PHYS 211 — General Physics ................................................................................ 4
MIN 202 — Mine Surveying .................................................................................. 3
MIN 315 — Introduction to Mineral Preparation .................................................... 3
Spring Semester
MIN 313 — Introduction to Mineral Preparation .................................................... 3
Spring Semester
MIN 315 — Introduction to Mineral Preparation .................................................... 3
Spring Semester
MIN 301 — Mine Plant Design ............................................................................ 3
MIN 302 — Underground Mine Environmental Engineering .............................. 3
GEOS 332 — Ore Deposits and Structure ................................................................ 3
Perspectives on the Human Condition ................................................................. 3

Fourth Year
Fall Semester
MIN 401 — Mineral Valuation and Economics ...................................................... 3
MIN 409 — Ore Research & Computer Appl. in Min. Ind. .................................... 3
MIN 490 — Mine Design Project ........................................................................... 3
Technical Electives
Perspectives on the Human Condition ................................................................. 3

Notes:
1. 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.
2. On alternate years, Perspectives on the Human Condition requirement should be taken.
3. On alternate years, GEOS 262 should be substituted.

Recommended Technical Electives for B.S. in Mining Engineering
1. MIN 472 — Ground Control
2. MIN 447 — Placer Mining
3. MIN 448 — Open Pit Mining
4. GE 440 — Slope Stability
At least three out of the six technical elective credits must be taken from the above list of the approved technical electives. The other three credits should be chosen in consultation with the advisor and subject to approval by the department head.
Museum Studies

College of Natural Sciences

The Museum Studies courses provide students with an understanding of the functions and roles of museums in contemporary society, with academic instruction as well as practical hands-on experience. Emphasizing a broad natural history focus, Museum Studies courses present a comprehensive perspective of education, research and public service in museums and cover a variety of subjects.

Music

College of Liberal Arts

Department of Music

Degrees: B.A., B.M., M.A.

Minimum Requirements for Degrees: B.A.: 130 credits; B.Mus.: 120-144 credits, M.A.: 30 additional credits.

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

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 participate in at least one ensemble (band, choir, orchestra, chorus) each semester they are enrolled. In addition, participation in chamber music opportunities is offered.

Attendance at recitals and concerts provides students with a variety of musical experiences which expand their regular curriculum; therefore, attendance is mandatory for all majors. All applied music students are expected to perform in student recitals during each semester of study.

At the end of the sophomore year, all music majors must demonstrate a satisfactory level of proficiency in performance in their applied major in order to advance to upper-division courses in music. A student may elect to continue study at the 200 level in attempting to pass requirements for admission to upper-division study.

A piano proficiency jury examination must be successfully completed by the end of the student's second year in the program. This examination will consist of (1) performance of a recital composition equivalent in difficulty to a Bach two-part invention; or Clementi or Kuhlau sonatina; (2) sight reading of Bach Chorales; (3) improvisation of a choral accompaniment to a simple melody; and (4) transposition and harmonization of the same song to another key.

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

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

Requirements

Music — B.A. Degree

1. Complete general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 131-132</td>
<td>4</td>
</tr>
<tr>
<td>MUS 133-134</td>
<td>4</td>
</tr>
<tr>
<td>MUS 221-222</td>
<td>6</td>
</tr>
<tr>
<td>MUS 231-232</td>
<td>4</td>
</tr>
<tr>
<td>MUS 233-234</td>
<td>2</td>
</tr>
<tr>
<td>MUS 331</td>
<td></td>
</tr>
<tr>
<td>*MUS 190</td>
<td></td>
</tr>
</tbody>
</table>

Six credits to be selected from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 421</td>
<td>3</td>
</tr>
<tr>
<td>MUS 422</td>
<td>3</td>
</tr>
<tr>
<td>MUS 423</td>
<td>3</td>
</tr>
<tr>
<td>MUS 424</td>
<td>3</td>
</tr>
<tr>
<td>*MUS 161-462</td>
<td>8</td>
</tr>
</tbody>
</table>

Ensembles (may include up to 2 credits of MUS 307 — Chamber Music) ............................................. 6
MUS 253 — Piano Proficiency ........................................... 0

Minimum credits required ........................................... 130

The applied music credit minimums defined for the major area of performance may be distributed over more than one instrumental area provided that the required level of competency is achieved for one instrument.

* A half recital will be required in the junior year and a full recital in the senior year. The student, in his graduation recital, must demonstrate ability to perform satisfactorily in public a program of artistic merit. See music department's handbook for details.

Music — B.M. Degree (Performance)

1. Complete the general university requirements.
2. Complete 3 credits of mathematics at the 100-level or above (in addition to the core).
3. Complete the following degree and program (major) requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 153</td>
<td>1</td>
</tr>
<tr>
<td>MUS 161-162</td>
<td>2</td>
</tr>
<tr>
<td>MUS 221-222</td>
<td>4</td>
</tr>
<tr>
<td>MUS 231-232</td>
<td>4</td>
</tr>
<tr>
<td>MUS 233-234</td>
<td>2</td>
</tr>
<tr>
<td>MUS 351</td>
<td>3</td>
</tr>
<tr>
<td>*MUS 190</td>
<td>0</td>
</tr>
</tbody>
</table>

Secondary Area:

Twenty-seven credits to be selected from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 124</td>
<td>3</td>
</tr>
<tr>
<td>MUS 153</td>
<td>1</td>
</tr>
<tr>
<td>MUS 161-162</td>
<td>4</td>
</tr>
<tr>
<td>MUS 221-222</td>
<td>2</td>
</tr>
<tr>
<td>MUS 231</td>
<td>3</td>
</tr>
<tr>
<td>MUS 331</td>
<td>3</td>
</tr>
<tr>
<td>MUS 421-424</td>
<td>6</td>
</tr>
<tr>
<td>MUS 431</td>
<td>3</td>
</tr>
<tr>
<td>MUS 432</td>
<td>3</td>
</tr>
<tr>
<td>MUS 433</td>
<td>3</td>
</tr>
<tr>
<td>MUS 493</td>
<td>3</td>
</tr>
<tr>
<td>*MUS 190</td>
<td>0</td>
</tr>
<tr>
<td>MUS 253</td>
<td>0</td>
</tr>
</tbody>
</table>

Minimum credits required for degree .................. 120-121

1 Repeatable for credit — MUS 153, 307, 313, 317
3 Repeatable for credit — MUS 493. Maximum total of 6 credits.
4 Minimum of 6 credits to be selected from MUS 421, 422, 423, 424, 431, 432, 433.
5 The applied music credit minimums defined for the major area of performance may be distributed over more than one instrumental area provided that the required level of competency is achieved for one instrument.

* A half recital will be required in the junior year and a full recital in the senior year. The student, in his graduation recital, must demonstrate ability to perform satisfactorily in public a program of artistic merit. See music department's handbook for details.

Music — B.M. Degree (Secondary)

(Music Education — Secondary)

1. Complete the general university requirements.
2. Complete 3 credits of mathematics at the 100-level or above (in addition to the core).
3. Complete the following degree and program (major) requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 153</td>
<td>1</td>
</tr>
<tr>
<td>MUS 161-162</td>
<td>2</td>
</tr>
<tr>
<td>MUS 221-222</td>
<td>4</td>
</tr>
<tr>
<td>MUS 231-232</td>
<td>4</td>
</tr>
<tr>
<td>MUS 233-234</td>
<td>2</td>
</tr>
<tr>
<td>MUS 351</td>
<td>3</td>
</tr>
<tr>
<td>*MUS 190</td>
<td>0</td>
</tr>
</tbody>
</table>

Minimum credits required for degree .................. 120-121

1 Repeatable for credit — MUS 153, 307, 313, 317
3 Repeatable for credit — MUS 493. Maximum total of 6 credits.
4 Minimum of 6 credits to be selected from MUS 421, 422, 423, 424, 431, 432, 433.
5 The applied music credit minimums defined for the major area of performance may be distributed over more than one instrumental area provided that the required level of competency is achieved for one instrument.

* A half recital will be required in the junior year and a full recital in the senior year. The student, in his graduation recital, must demonstrate ability to perform satisfactorily in public a program of artistic merit. See music department's handbook for details.
MUS 221-222 — History of Music ...................................................... 6
MUS 231-232 — Advanced Theory .................................................. 4
MUS 233-234 — Advanced Ear Training ........................................... 2
MUS 315 — Music Methods and Techniques ...................................... 10
MUS 331 — Form and Analysis ...................................................... 3
MUS 351 — Conducting ............................................................... 3
MUS 432 — Orchestration ............................................................. 3
Ensembles (one large ensemble per semester) ................................. 8
**MUS 190 — Recital Attendance .................................................. 0
MUS 253 — Piano Proficiency ........................................................ 0

Courses required for Secondary Certification (Contact the School of Education before beginning education courses):
MUS 405 — Secondary School Music Methods ................................... 3
PSY 101 — Introduction to Psychology .......................................... 3
PSY 240 — Developmental Psychology .......................................... 3
ED 201 — Introduction to Education .............................................. 3
ED 330 — Diagnosis and Evaluation of Learning .............................. 3
ED 407 — Reading Strategies for Secondary Students ...................... 3
ED 424 — Small School Programs or ED 425 — Community as Education Resource .............................................. 3
ED 430 — Multicultural Teaching Techniques .................................. 3
ED 453 — Secondary Student Teaching .......................................... 12

One course from the following:
ED 345 — Sociology of Education ................................................. 3
ED 346 — Structure of American/Alaskan Education ......................... 3
ED 350 — Communication in Cross-Cultural Classrooms ................... 3
ED 380 — Cultural Influence in Education ...................................... 3
ED 450 — Education and Cultural Transmission ................................ 3

Minimum credits required ......................................................... 138

The applied music credit minimums defined for the major area of performance may be distributed over more than one instrumental area provided that the required level of competency is achieved for one instrument.

**A half recital will be required in the junior year and a full recital in the senior year. The student, in his graduation recital, must demonstrate ability to perform satisfactorily in public a program of artistic merit. See music department's handbook for details.

Music — B.M. Degree

(Music Education — Elementary)

1. Complete the general university requirements.
2. Complete 3 credits of mathematics at the 100-level or above (in addition to the core).
3. Complete the following degree and program (major) requirements:

Credits

Required Music Courses:
*MUS 161-162 — Applied Music (major) ........................................ 14
MUS 131-132 — Basic Theory ...................................................... 4
MUS 133-134 — Basic Ear Training .............................................. 4
MUS 221-222 — History of Music .................................................. 4
MUS 233-234 — Advanced Ear Training ........................................ 2
MUS/ED 309 — Elementary School Music Methods ........................ 3
MUS 315 — Music Methods and Techniques ................................... 10
MUS 331 — Form and Analysis .................................................... 3
MUS 351 — Conducting ............................................................. 3
MUS 432 — Orchestration and Arranging Ensembles (one large ensemble per semester) .............................................. 8
**MUS 190 — Recital Attendance .................................................. 0
MUS 253 — Piano Proficiency ........................................................ 0

Required education courses (Contact School of Education before beginning education courses):
PSY 101 — Introduction to Psychology ........................................... 3
PSY 240 — Developmental Psychology .......................................... 3
ED 201 — Introduction to Education .............................................. 3
ED 304 — Literature for Children .................................................... 3
ED 333-334 — Diagnosis and Evaluation of Literacy Development ....... 3
ED 410 — Foundations of Literacy Development ............................... 3
ED 411 — Strat for Reading/WRITING INSTR Multicult Classrooms .... 3
ED 412 — Language Arts/Social Studies: Meth/Curric Dev ............... 3
ED 413 — Math and Science: Methods and Curric Dev ........................ 3
ED 452 — Elementary Student Teaching ........................................ 12

One course from the following:
ED 345 — Sociology of Education ................................................. 3
ED 346 — Structure of American/Alaskan Education ......................... 3
ED 350 — Communication in Cross-Cultural Classrooms ................... 3
ED 380 — Cultural Influences in Education ..................................... 3
ED 450 — Education and Cultural Transmission ................................ 3

Minimum credits required ......................................................... 132

The applied music credit minimums defined for the major area of performance may be distributed over more than one instrumental area provided that the required level of competency is achieved for one instrument.

**All undergraduate students majoring in Music must enroll in Music 190 — Recital Attendance during each semester of their residence.

MINOR in Music:

Complete one of two options:

MINOR Option A

Complete 18 credits in music to be selected from the following:

 Credits
Music Theory, History and Appreciation (courses to be selected with approval of department head) ......................................................... 12
MUS 151, 152, 153, 161-162 ......................................................... 4
MUS 101, 203, 205, 211 ................................................................. 2

MINOR Option B

Complete 18 credits in music to be selected from the following:

MUS 101, 162, 201, 202, 261 ......................................................... 8
Native Language Education

College of Liberal Arts
Department of Alaska Native Languages (907) 474-7874
Certificate; Degree: A.A.S.
Minimum Requirements for Degree: A.A.S.: 60 credits; for Certificate: 30 credits

Requirements

Native Language Education — A.A.S. Degree
Athabaskan Option: Students will be admitted to the program after consultation with a faculty member who will determine that they have suitable backgrounds in an Athabaskan language.

1. Complete the following general university and A.A.S. requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications:</td>
<td></td>
</tr>
<tr>
<td>ENG111X and ENGL211X, 212*</td>
<td>6</td>
</tr>
<tr>
<td>COMM131X or 141X</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics or Natural Science:</td>
<td></td>
</tr>
<tr>
<td>A math or natural science course</td>
<td>3</td>
</tr>
<tr>
<td>that the 100 level or above</td>
<td></td>
</tr>
<tr>
<td>Humanities, social sciences,</td>
<td></td>
</tr>
<tr>
<td>mathematics, natural science or</td>
<td></td>
</tr>
<tr>
<td>perspectives on the Human</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
</tr>
</tbody>
</table>

2. Complete the following major degree requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANL108 — Beginning Athabaskan</td>
<td></td>
</tr>
<tr>
<td>Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ANL208 — Advanced Athabaskan</td>
<td></td>
</tr>
<tr>
<td>Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ANL287 — Teaching Methods for</td>
<td></td>
</tr>
<tr>
<td>Alaska Native Languages</td>
<td>3</td>
</tr>
<tr>
<td>ANL288 — Curriculum and Materials</td>
<td></td>
</tr>
<tr>
<td>Development for Alaska Native</td>
<td>3</td>
</tr>
<tr>
<td>Languages</td>
<td></td>
</tr>
<tr>
<td>ANL251 — Introduction to Athabaskan</td>
<td></td>
</tr>
<tr>
<td>Linguistics</td>
<td></td>
</tr>
<tr>
<td>ANL216 - Alaska Native Languages:</td>
<td></td>
</tr>
<tr>
<td>Indian Languages</td>
<td>3</td>
</tr>
<tr>
<td>ED199 — Practicum in Education:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>ED299 — Practicum in Education:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Complete 15 credits of general</td>
<td></td>
</tr>
<tr>
<td>electives.</td>
<td></td>
</tr>
</tbody>
</table>

Degree Total: 60

Inupiaq Eskimo Option: Students will be admitted to the program after consultation with a faculty member who will determine that they have suitable backgrounds in the Inupiaq Eskimo language.

1. Complete the following general university and A.A.S. requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications:</td>
<td></td>
</tr>
<tr>
<td>ENGL111X and ENGL211X, 212*</td>
<td>6</td>
</tr>
<tr>
<td>COMM131X or 141X</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics or Natural Science:</td>
<td></td>
</tr>
<tr>
<td>A math or natural science course</td>
<td>3</td>
</tr>
<tr>
<td>that the 100 level or above</td>
<td></td>
</tr>
<tr>
<td>Humanities, social sciences,</td>
<td></td>
</tr>
<tr>
<td>mathematics, natural science or</td>
<td></td>
</tr>
<tr>
<td>perspectives on the Human</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
</tr>
</tbody>
</table>

2. Complete the following major degree requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESK118 — Inupiaq Orthography</td>
<td>3</td>
</tr>
<tr>
<td>ESK218 — Inupiaq Composition</td>
<td>3</td>
</tr>
<tr>
<td>ANL287 — Teaching Methods for</td>
<td></td>
</tr>
<tr>
<td>Alaska Native Languages</td>
<td>3</td>
</tr>
<tr>
<td>ANL288 — Curriculum and Materials</td>
<td></td>
</tr>
<tr>
<td>Development for Alaska Native</td>
<td>3</td>
</tr>
<tr>
<td>Languages</td>
<td></td>
</tr>
<tr>
<td>One three credit course in Eskimo</td>
<td></td>
</tr>
<tr>
<td>Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>ANL215 - Alaska Native Languages:</td>
<td></td>
</tr>
<tr>
<td>Eskimo-Aleut</td>
<td>3</td>
</tr>
<tr>
<td>ED199 — Practicum in Education:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>ED299 — Practicum in Education:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Complete 15 credits of general</td>
<td></td>
</tr>
<tr>
<td>electives.</td>
<td></td>
</tr>
</tbody>
</table>

Degree Total: 60

Native Language Education — Certificate
Athabaskan Option: Students will be admitted to the program after consultation with a faculty member who will determine that they have suitable backgrounds in an Athabaskan language.

Complete the following major requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANL 108 — Beginning Athabaskan Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ANL 208 - Advanced Athabaskan Literacy</td>
<td>3</td>
</tr>
<tr>
<td>ANL 287 - Teaching Methods for Alaska Native Languages</td>
<td>3</td>
</tr>
<tr>
<td>ANL 288 - Curriculum and Materials Development for Alaska Native Languages</td>
<td>3</td>
</tr>
<tr>
<td>ANL 251 - Introduction to Athabaskan Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>ANL 216 - Alaska Native Languages: Indian Languages</td>
<td>3</td>
</tr>
<tr>
<td>ED 199 - Practicum in Education</td>
<td>6</td>
</tr>
<tr>
<td>ED 299 - Practicum in Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Certificate Total: 30

Inupiaq Eskimo Option: Students will be admitted to the program after consultation with a faculty member who will determine that they have suitable backgrounds in the Inupiaq Eskimo language.

Complete the following major requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESK 118 — Inupiaq Orthography</td>
<td>3</td>
</tr>
<tr>
<td>ESK 218 — Inupiaq Composition</td>
<td>3</td>
</tr>
<tr>
<td>ANL 287 - Teaching Methods for Alaska Native Languages</td>
<td>3</td>
</tr>
<tr>
<td>ANL 288 - Curriculum and Materials Development for Alaska Native Languages</td>
<td>3</td>
</tr>
<tr>
<td>One three credit course in Eskimo linguistics</td>
<td>3</td>
</tr>
<tr>
<td>ANL 215 - Alaska Native Languages: Eskimo-Aleut</td>
<td>3</td>
</tr>
<tr>
<td>ED 199 - Practicum in Education</td>
<td>6</td>
</tr>
<tr>
<td>ED 299 - Practicum in Education</td>
<td>6</td>
</tr>
</tbody>
</table>

Certificate Total: 30

Natural Resources Management

School of Agriculture and Land Resources Management (907) 474-5550
Degrees: B.S., M.S.
Minimum Requirements for Degree: B.S.: 130 credits; M.S.: 30-35 credits

Natural Resources Management consists of making and implementing decisions to develop, maintain or protect ecosystems to meet human needs and values. The core natural resources management curriculum is designed to provide 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, students planning advanced study, as well as those wishing to be better informed citizens.

The forestry option 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 Plant, Animal, and Soil Science option offers opportunities for scientific study and education in areas such as: field and greenhouse plant production, domestication and propagation of native plants, revegetation, domestic and native animal production, and agricultural and ecological aspects of soil science. The Resources option emphasizes responsible stewardship in the management of multiple resources that occur in natural systems.

Field and laboratory activities and applications of knowledge gained are stressed throughout the program. Internships and work-study arrangements are often available for qualified students.

Requirements

Courses required for the majors may also be used to satisfy the general university requirements as appropriate.

Natural Resources Management — B.S. Degree

1. Complete general university requirements and B.S. degree requirements.

2. Complete the following (major) requirements (39 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 105X — Fundamentals of Biology I</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 106X — Fundamentals of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 271 — Principles of Ecology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 105X — General Chemistry I</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 106X — General Chemistry II</td>
<td>4</td>
</tr>
</tbody>
</table>
ECON 235 — Intro. to Nat. Resource Econ. 3
NRM 101 — Natural Resources Conservation and Policy 3
NRM 304 — Perspectives in Natural Resources Management 3
NRM 380 — Soils and the Environment 3
NRM 385 — Seminar in Natural Resources Management 4
STAT 200 — Elementary Probability and Statistics 3

3. Complete the requirements for one of the following options:

A. Forestry Option
Department of Forest Sciences
1. Complete the following (54 credits):

AIS 101 — Effective Personal Computer Use (or approved alternative) 3
Biol 239 — Introduction to Plant Biology 4
CE 112 — Elementary Surveying 4
ECON 335 — Intermediate Natural Resource Economics 3
GEOS 101X — The Earth System 4
NRM 204 — Natural Resources Legislation and Policy 3
NRM 251 — Silvics and Dendrology 4
NRM 338 — Introduction to Geographic Information Systems 3
NRM 340 — Natural Resources Management and Inventory 3
NRM 365 — Principles of Outdoor Recreation Management 3
NRM 370 — Introduction to Watershed Management 3
NRM 430 — Land-Use Planning 3
NRM 450 — Forest Management 3
NRM 451 — Silviculture 3
NRM 452 — Forest Protection 3
NRM 583 — Harvest and Utilization of Forest Products 3
WLF 201 — Wildlife Management Principles or FISH 401 — Fisheries Management 3

2. Complete three courses that total at least 8 credits from the following list of restricted electives (courses other than those listed must be approved by student's advisor)

AVTY 302 — Aerial Data Collection 2
BA 350 — Introduction to Real Estate and Land Economics 3
BIOL 331 — Systematic Botany 4
FIRE — Any course on wildland fire management/3
GEOS 402 — Paleobotany 2
GEOS 408 — Paleoclimatology 2
NRM 277 — Introduction to Conservation Biology 3
NRM 300 — Internship in Natural Resources Management (must be forestry related) 1-6
NRM 303 — Environmental Ethics and Actions 3
NRM 312 — Introduction to Range Management 3
NRM 341 — GIS Analysis 4
STAT 401 — Regression and Analysis of Variance 3
STAT 402 — Scientific Sampling 3
WLF 201 — Wildlife Management Principles or FISH 401 — Fisheries Management 3
WLF 417 — Forest Policy and Administration 2
Minimum credits required 130

B. Plant, Animal and Soil Sciences Option
Department of Plant, Animal and Soil Sciences
1. Complete the following (12 credits):

NRM 211 — Introduction to Applied Plant Science 3
NRM 310 — Agricultural Concepts 3
NRM 320 — Introduction to Animal Science 3
NRM 480 — Soil Management for Quality and Conservation 3

2. Complete a minimum of 12 credits in the following natural resources management electives:

NRM 102 — Practicum in Natural Resources Management and NRM 300 — Internship in Natural Resources Mgt 1-3
NRM 204 — Natural Resources Legislation and Policy 3
NRM 215 — Plant Propagation 3
NRM 251 — Silvics and Dendrology 4
NRM 312 — Introduction to Range Management 3
NRM 313 — Plant Pathology 4
NRM 321 — Applied Animal Nutrition 3
NRM 338 — Introduction to Geographic Information Systems 3
NRM 340 — Natural Resources Measurement and Inventory 3
NRM 341 — GIS Analysis 4
NRM 370 — Introduction to Watershed Management 3
NRM 404 — Processes of Natural Resources Management 3
NRM 412 — Field Crop Production 3
NRM 420 — Animal Nutrition and Metabolism 3
NRM 425 — Ungulate Management and Production Systems 3

NRM 445 — Managing Food Production Systems 4
NRM 480 — Soil Management for Quality and Conservation 3

3. Complete a minimum of 12 credits in an approved support field. Selections may include courses listed within the humans and the environment elective category, and need not be limited to those with NRM designators. Courses are selected for their clear pertinence to the cohort program and must be approved by the student's academic advisor prior to attaining senior standing. Examples include but are not limited to: communications, data management, economics, marketing, recreation, or resources policy. Support fields may also include subject areas in forest and plant, animal, and soil sciences.

4. Minimum credits required 130

MINOR in Natural Resources Management

A minor in Natural Resources Management requires completion of NRM 101 and 15 credits of any other courses, with no more than 6 credits of which must be upper division. The minor program must be approved by an NRM advisor.

Natural Resources Management — M.S. Degree

For complete information on the graduate program in natural resources management, see the UAF Graduate Catalog.
Northern Studies

Interdisciplinary

Degrees: B.A., M.A.

Minimum Requirements for Degree: B.A.: 130 credits; M.A.: 30 or more credits

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 major in northern studies is interdisciplinary.

The northern studies curriculum is centered around an interdisciplinary seminar, the Northern Studies Seminar, NORS 484, which is taken in the senior year. Students also must complete 10 courses, constituting a core program and select an additional two courses of their choice from the disciplines represented in the core curriculum.

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

Requirements

Northern Studies — B.A. Degree

1. Complete the following program (major) requirements:

   Credits

   Northern Studies Core:
   - BIOL 104X — Natural History of Alaska ......................... 3
   - PS 210 — Alaska Government and Politics or
   - PS 263 — Alaska Native Politics ..................... 3
   - ANL 215 — Native Languages .................................. 3
   - ANTH 242 — Native Cultures of Alaska ................. 3
   - GEOG 327 — Cold Lands ..................................... 3
   - HIST 483 — 20th Century Circumpolar History .......... 3
   - NORS 484 — Northern Studies Seminar .................... 3

   Select 15 credits from two of the following groups:* Anthropology:
   - ANTH 309 — Arctic Prehistory ................................ 3
   - ANTH/ANTH 320 — Lang and Culture: Appl to Alaska .... 3
   - ANTH 321 — Physical Anthropology of the Americans .... 3
   - ANTH 380 — The People of Alaska Southwest ............ 3
   - ANTH 381 — The Inupiat and Yup'ik Peoples .............. 3
   - ANTH 382 — The People of Alaska Southeast ............ 3
   - ANTH 383 — Athabas. Peoples of Alaska & Adjacent Canada 3

   Geography:
   - GEOG 302 — Geography of Alaska ......................... 3
   - GEOG 303 — Geography of United States and Canada ... 3
   - GEOG 306 — Geography of Russia ............................ 3

   History:
   - HIST 320 — Modern Scandinavia ........................... 3
   - HIST 354 — Canadian History to 1867 .............. 3
   - HIST 355 — Canadian History 1867 to Present ........ 3
   - HIST 373 — History of the Northern Pacific .......... 3
   - HIST 460 — Russian America ............................ 3
   - HIST 461 — History of Alaska .............................. 3
   - HIST 464 — Modern Russian ............................... 3
   - HIST 465 — Russian Eastward Expansion .............. 3
   - HIST 481 — Polar Exploration and Its Literature ...... 3
   - HIST 482 — History of Circumpolar Research ........... 3

   Political Science:
   - PS 310 — The Politics of Post-Industrial States .... 3
   - PS 311 — Government and Politics of Russia & the Periphery 3
   - PS 321 — International Politics .......................... 3
   - PS 322 — International Law and Organizations ...... 3
   - PS/ANTH 325 — Native Self Government ................. 3
   - PS/ANTH 450 — Comparative Aboriginal Rights and Policies 3
   - PS 481 — Geopolitics and International Environ ....... 3

   Humanities:
   - ANS 301 — Native Cultural Heritage Documentation ... 3
   - ART 364 — Native Art of Alaska ....................... 3
   - ENGL 349 — Narrative Art of Alaska Native Peoples . 3
   - ENGL 350 — Literature of Alaska and the Yukon Territory 3
   - MUS 441 — Alaska Native Music and Social Change .... 3
   Two semesters of a northern language, such as Eskimo, Russian, or
   Danish .............................................................. 10

   Minimum credits required ....................................... 130

*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.

Minor in Northern Studies

A minor in Northern Studies requires the completion of the core courses, excluding NORS 484, for a total of 18 credits.

Northern Studies — M.A. Degree

The M.A. in Northern Studies provides graduate academic study of northern policy issues and the cultural, historical, economic, and political context of the circumpolar north.

For complete information on the graduate program in Northern Studies, see the UAF Graduate Catalog.

Oceanography

School of Fisheries and Ocean Sciences

Graduate Program in Marine Sciences and Limnology

(907) 474-7289

Degree: M.S., Ph.D.

Minimum Requirements for Degree: M.S.: 30 credits; Ph.D.: Open

The Graduate Program in Marine Sciences and Limnology offers M.S. degrees in several areas of oceanography (physical, chemical, biological, geological, fisheries and marine biology). Limnological research projects are also undertaken under the oceanography degree. The Ph.D. degree is offered in oceanography and students also may pursue an interdisciplinary Ph.D. degree in marine biology.

Opportunities for laboratory and field work are available through the School of Fisheries and Ocean Sciences and the Institute of Marine Science. These include laboratories at Fairbanks, the Seward Marine Center, Kasitsna Bay, the Juneau Center for Fisheries and Ocean Sciences, and the Fishery Industrial Technology Center at Kodiak.

Research vessels operated by the institute and school include the RV Alpha Helix, which has open-ocean capabilities and operates in Alaskan coastal waters, the Gulf of Alaska, and the Bering Sea, and the RV Little Dipper, which operates on day trips in Resurrection Bay.

Laboratory facilities include a seawater system at Seward and a variety of modern and analytical instrumentation, including mass spectrometers, alpha, gamma and beta counting equipment, a flow cytometer facility, and gas and liquid chromatography equipment. Mainframe and personal computing facilities are readily accessible to graduate students.

For complete information on the graduate programs in oceanography, see the UAF Graduate Catalog.

Office Management and Technology

College of Rural Alaska

Tanana Valley Campus

(907) 451-7223

Certificate; Degree: A.A.S.

Minimum Requirements for Degree: 60 credits; for Certificate: 30 credits

The Office Management and Technology program provides students with the specific skills needed to obtain entry level employment or achieve career advancement. Review courses aimed at preparing candidates for the Certified Professional Secretary examination are offered annually.

Courses covering basic knowledge and skills, emerging technology, advanced procedures, and interpersonal skills are offered. Potential careers for graduates include office secretary, stenographer, file clerk, receptionist, word information processors and office supervisors. This department offers both an associate degree and a certificate program.

Requirements

Office Management and Technology — A.A.S. Degree

1. Complete the following general university and A.A.S. requirements:

   Credits

   Communications:
   - ENGL 111X and ENGL 211X, 212*, or 213X .................. 6
   - COMM 131X or 141X ........................................ 3
Mathematics or Natural Science:  
A math or natural science course at the 100 level or above ........................................ 3

Humanities, social sciences, mathematics, natural science or perspectives on the Human Condition ................................................................. 3

2. Complete the following major degree requirements:
   ACCT 101 — Elementary Accounting .................................................. 3
   or ABUS 142 — Office Accounting I .................................................. 2
   CAPS 135 — Microcomputer Spreadsheets ........................................ 2
   OMT 105 — Keyboarding II/Intermediate Typewriting ........................ 3
   OMT 106 — Keyboarding III/Advanced Typewriting ............................ 3
   OMT 110 — Office Procedures ......................................................... 3
   OMT 131 — Business English ........................................................... 3
   OMT 151 — WordPerfect  
or OMT 155 — Microsoft Word ..................................................... 2
   OMT 203 — Calculating Machines ................................................,... 2
   OMT 221 — Filing/Records Management ............................................ 3
   OMT 231 — Business Communications ................................................ 3
   OMT 244 — Office Management .......................................................... 3

   Subtotal: (minimum of) 31-32

3. Complete 7 (minimum) credits from the following major specialty electives:
   ACCT 102 — Elementary Accounting .................................................. 3
   ABUS 154 — Human Relations ............................................................ 3
   ABUS 155 — Business Math ............................................................... 3
   CAPS 100 — Introduction to Personal Computers .................................. 1
   OMT 103 — Keyboarding I/Beginning Typewriting ............................ 3
   OMT 207 — Machine Transcription ..................................................... 2
   OMT 210 — Legal Typewriting ........................................................... 2
   OMT 211 — Medical Typewriting ....................................................... 2
   OMT 214 — Medical Machine Transcription ....................................... 1
   OMT 219 — Legal Machine Transcription .......................................... 1
   Any other CAPS, ABUS, OMT course ................................................ 1-6

   Degree Total: 60-61

   *ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

Office Management and Technology — Certificate
1. Complete the following major specialty requirements:
   ACCT 101 — Elementary Accounting .................................................. 3
   or ABUS 142 — Office Accounting I .................................................. 2
   OMT 105 — Keyboarding II/Intermediate Typewriting ........................ 3
   OMT 106 — Keyboarding III/Advanced Typewriting ............................ 3
   OMT 110 — Office Procedures ......................................................... 3
   OMT 131 — Business English ........................................................... 3
   OMT 151 — WordPerfect  
or OMT 155 — Microsoft Word ..................................................... 2
   OMT 203 — Calculating Machines ................................................,... 2
   OMT 221 — Filing/Records Management ............................................ 3

   Credits

2. Complete 7 (minimum) credits from the following major specialty electives:
   ACCT 102 — Elementary Accounting .................................................. 3
   ABUS 154 — Human Relations ............................................................ 3
   ABUS 155 — Business Math ............................................................... 3
   CAPS 100 — Introduction to Personal Computers .................................. 1
   OMT 103 — Keyboarding I/Beginning Typewriting ............................ 3
   OMT 207 — Machine Transcription ..................................................... 2
   OMT 210 — Legal Typewriting ........................................................... 2
   OMT 211 — Medical Typewriting ....................................................... 2
   OMT 214 — Medical Machine Transcription ....................................... 1
   OMT 219 — Legal Machine Transcription .......................................... 1
   Any other CAPS, ABUS, or OMT course ........................................... 1-6

3. Any other CAPS, ABUS, or OMT course for a total of 3 credits. 

Certificate Total: 32-33

Paralegal Studies

College of Rural Alaska
Tanana Valley Campus  (907) 451-7223

Degree: A.A.S.

Minimum Requirements for Degree: 60 credits

The paralegal studies curriculum leads to an associate of applied science degree for individuals aspiring to enter the legal community, state and federal agencies, insurance companies, banks and title companies as paralegal personnel. The core curriculum of 33 credits is based on model curricula published by the American Bar Association and designed to assure that students receive fundamental education in the vocabulary and process of the paralegal profession.

Requirements

Paralegal Studies — A.A.S. Degree

Students must complete ENGL 111X with a grade of "C" or above prior to admission to the program.

1. Complete the following general university and A.A.S. requirements:

Communications:
   ENGL 111X and ENGL 211X, 212*, or 213X ........................................ 6
   COMM 131X or 141X ........................................................................ 3

Mathematics or Natural Science:
   A math or natural science course at the 100 level or above ................... 3
   PS 101 — Introduction to American Government and Politics .............. 3

2. Complete the following major degree requirements:

   CAPS 150 — Computer Applications .................................................. 3
   PLS 101 — Introduction to Paralegal Studies ...................................... 3
   PLS 203 — Torts ................................................................................. 3
   PLS 210 — Civil Procedure ............................................................... 3
   PLS 213 — Criminal Law for Paralegals .......................................... 3
   PLS 215 — Contracts/Real Property .................................................. 3
   PLS 240 — Family Law ...................................................................... 3
   PLS 299 — Practicum ....................................................................... 3
   PS 303 — Introduction to Legal Processes ......................................... 3
   PS 404 — Introduction to Legal Research and Writing ....................... 3
   PS 435 — The Supreme Court and Judicial Process  
or PS 436 — The Courts and Civil Liberties ........................................... 3

3. Complete 12 credits of general electives

   Recommended electives: CAPS 160, CAPS 260, BA 317, BA 330, 
   ANS 425, ABUS 241, or coursework fulfilling UAF core requirements. 

Degree Total: 60

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.

Petroleum Engineering

School of Mineral Engineering
Department of Petroleum Engineering  (907) 474-7734

Degree: B.S., M.S.

Minimum Requirements for Degrees: B.S.: 134 credits; M.S.: 30-33 additional credits.

Petroleum engineering at UAF offers a unique look at the challenging problems confronting the petroleum industry. Both the bachelor of science and the master of science degrees are available. Requirements for the degrees focus on many disciplines, including mathematics, physics, chemistry, geology and engineering science. In addition, courses in petroleum engineering deal with drilling, formation evaluation, production, reservoir engineering, computer simulation and enhanced oil recovery.

The curriculum at UAF was designed to prepare 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 Department of Petroleum Engineering offers one of the most modern and challenging degree programs available.

Requirements

Petroleum Engineering — B.S. Degree

1. Complete the general university requirements.
2. Complete the following degree and program (major) requirements:

First Year
Fall Semester ........................................... 16 Credits
PETE 103 — Survey of the Energy Industry ......................... 1
MATH 200X — Calculus I .............................................. 4
CHEM 105X — General Chemistry .................................... 4
ENGL 111X — Methods of Written Communication ................. 3
Perspectives on the Human Condition ................................. 3
LS 101X — Library Information and Research .................... 1

Spring Semester ........................................... 17 Credits
ES 201 — Computer Techniques .................................... 3
MATH 201X — Calculus II .............................................. 4
GE 261 — Geology for Engineers .................................... 3
CHEM 106X — General Chemistry II .................................. 4
COMM 131X or 141X — Fundamentals of Oral Communication 3

Second Year
Fall Semester ........................................... 17 Credits
PETE 205 — Introduction to Petroleum Drilling and Production ... 3
MATH 202X — Calculus III ............................................ 4
PHYS 211X — General Physics I ...................................... 4
ENGL 211X/213X — Intermediate Exposition .......................... 3
Perspectives on the Human Condition ................................. 3

Spring Semester ........................................... 17 Credits
ES 208 — Mechanics .................................................. 4
MATH 302 — Differential Equations .................................. 3
PHYS 212X — General Physics II .................................... 4
ES 346 — Basic Thermodynamics .................................... 3
Perspectives on the Human Condition ................................. 3

Third Year
Fall Semester ........................................... 16 Credits
PETE 201 — Reservoir Rock and Fluid Properties .................. 4
MATH 310 — Numerical Analysis ..................................... 3
ES 331 — Mechanics of Materials .................................... 3
ES 341 — Fluid Mechanics ............................................. 4
Perspectives on the Human Condition ................................. 3

Spring Semester ........................................... 18 Credits
PETE 302 — Well Logging ............................................ 3
PETE 303 — Reservoir Rock and Fluid Properties Lab ............. 1
PETE 426 — Drilling Engineering ..................................... 3
PETE 411 — Drilling Fluids Laboratory ................................ 1
PETE 476 — Reservoir Engineering .................................... 3
GEOS 370 — Struct. Geol. for Petr. Engr ............................. 4
Perspectives on the Human Condition ................................. 3

Fourth Year
Fall Semester ........................................... 17 Credits
PETE 407 — Production Engineering ................................ 3
PETE 431 — Natural Gas Engineering ................................ 3
PETE 466 — Petroleum Recovery Methods ........................... 3
PETE 481 — Well Completions/Stimulation Design .................. 3
*Engineering Elective .................................................. 3
Perspectives on the Human Condition ................................. 3

Spring Semester ........................................... 15 Credits
PETE 456 — Pet. Eval. and Econ. Dec ................................ 3
PETE 421 — Reservoir Characterization ............................. 3
PETE 478 — Well Test Analysis ....................................... 2
PETE 489 — Reservoir Simulation ..................................... 2
**Technical Elective .................................................. 2
PETE 487 — Petroleum Project Design ............................... 2

1. GEOS 101 may be taken in a full semester in place of GE 261.
2. As approved by advisor (e.g. ME 416 or ES 307).
3. As approved by advisor (e.g. CE 603).
4. All courses in humanities and social sciences must be approved by Petroleum Engineering faculty advisor.
5. As approved by the Board of Architects, Engineers and Land Surveyors, students are required to take the EIT Exam.

Applicants should possess a B.S. degree in engineering or the natural sciences.
For complete information on the graduate program in Petroleum Engineering, see the UAF Graduate Catalog.

Philosophy

College of Liberal Arts
Department of Philosophy and Humanities (907) 474-7398

Degree: B.A.

Minimum Requirements for Degree: 130 credits

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

Requirements

Philosophy — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.

2. Complete the following foundation requirements:
   (May be used to meet general degree requirements.)
   Two years at the college level in a non-English language.

3. Complete the following program (major) requirements: 36 credits in philosophy, including:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 201 — Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 202 — Introduction to Eastern Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 204 — Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 351-352 — History of Philosophy and Science</td>
<td>6</td>
</tr>
<tr>
<td>PHIL 471 — Contemp. Philosophical Problems</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 486 — B.A. Thesis in Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 493 — Special Topics</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 321 — Aesthetics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 322 — Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 341 — Epistemology</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 342 — Metaphysics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 381 — Topics in Logics</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 481 — Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 482 — Comparative Religion</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 483 — Philosophy of Social Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 485 — Topics in Comparative Philosophies</td>
<td>3</td>
</tr>
</tbody>
</table>

4. Successfully complete a comprehensive oral examination conducted by the staff of the Department of Philosophy covering all course work in philosophy. The student is to arrange for the examination at the beginning of the last semester of his major study.

Minimum credits required ........................................... 130

MINOR in Philosophy:

A minor in philosophy requires 18 credits of approved philosophy courses including:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 201 — Introduction to Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 351-352 — History of Philosophy and Science</td>
<td>6</td>
</tr>
<tr>
<td>PHIL 471 — Contemp. Philosophical Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

Choose six credits from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 202 — Intro. to Eastern Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 204 — Introduction to Logic</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 321 — Aesthetics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 322 — Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 341 — Epistemology</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 342 — Metaphysics</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 481 — Philosophy of Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 482 — Comparative Religion</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 483 — Philosophy of Social Science</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 485 — Topics in Comparative Philosophies</td>
<td>3</td>
</tr>
</tbody>
</table>
Physical Education and Exercise Science

College of Liberal Arts
Department of Physical Education and Exercise Science (907) 474-7382

Degrees: B.A., B.S.

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

The curriculum in physical education and exercise science takes a common core of study of how humans move and exercise (Exercise Science) and adds to it studies of professional education such as the pedagogy of teaching (Physical Education) or further study to prepare the student for graduate study or professional fitness delivery in the private setting. Additionally, the department offers courses directed to individual fitness and skill enhancement for those not pursuing a degree within the department.

Requirements

Physical Education — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.

2. Complete the following background requirements as part of the baccalaureate core:

   BIOL 211X-212X — Human Anatomy and Physiology I and II 8
   COMM 141X — Fund. of Oral Communication: Public Context 3

3. Complete the following:
   Any 100 level Chemistry course 4

4. Complete the following program (major) requirements:

   Required Courses (24 Credits)
   PE 205 — Introduction to the Human Movement Sciences 2
   PE 232 — Analysis of Human Movement 3
   PE 246 — Advanced First Aid 3
   PE 316 — Motor Development of Rhythms 3
   PE 405 — Concepts and Design of Physical Fitness Activities 2
   PE 421 — Physiology of Exercise 4
   PE 432 — Biomechanics of Performance 4
   PE 437 — Adapted Programs of Physical Activity 3

   Elective Credits (select a minimum of 8 courses) 8
   Included in these must be one winter sport, one individual sport, and one team sport.

   PE 211 — Fundamentals of Softball 1
   PE 212 — Fundamentals of Basketball 1
   PE 213 — Fundamentals of Ice Sports 1
   PE 214 — Fundamentals of Snow Sports 1
   PE 215 — Fundamentals of Volleyball 1
   PE 216 — Fundamentals of Rhythms 1
   PE 217 — Fundamentals of Recreational Activities 1
   PE 218 — Fundamentals of Soccer 1
   PE 219 — Fundamentals of Aquatics 1
   PE 220 — Fundamentals of Wrestling 1
   PE 221 — Fundamentals of Gymnastics 1
   PE 222 — Fundamentals of Track and Field 1

   Elective Credits (select a minimum of 4 courses) 4

   PE 300 — Advanced Techniques of Gymnastics 1
   PE 302 — Advanced Techniques of Basketball 1
   PE 303 — Advanced Techniques in Ice Sports 1
   PE 304 — Advanced Techniques in Snow Sports 1
   PE 305 — Techniques in Volleyball 1
   PE 306 — Techniques in Teaching Creative Dance 1
   PE 307 — Techniques in Camping and Outdoor Recreation 1
   PE 308 — Techniques in Track and Field 1

   PE 309 — Aquatics Instructor 2
   PE 310 — Techniques in Teaching Folk and Square Dance 1

   Elective Credits (select a minimum of 7 credits) 7

   PE 317 — Motor Learning 3
   PE 321 — Practicum in Physical Education 3
   PE 327 — Physical Education for Children 2
   PE 401 — Theory of Basketball 2
   PE 406 — Instructional Methodologies for Physical Activity 3
   PE 411 — Sports & Physical Activity in Today's World 3

   PE 412 — Principles and Problems in Athletic Coaching 3
   PE 425 — Administration of P.E. and Athletics 3

   PE 440 — Prevention and Care of Athletic Injuries 3
   PE 442 — Evaluation in Physical Activity 3

   Minimum credits required 130

* If not used as a required PE course.

K-12 Teaching Certification:

In order to receive a K-12 teaching certification in Physical Education a student must 1) complete a General Education minor (minus ED 299), 2) take ED 454 K-12 Student Teaching, and 3) complete the above requirements, including the following courses:

   PE 216 — Fundamentals of Rhythms 1
   PE 217 — Fundamentals of Recreational Activities 1
   PE 221 — Fundamentals of Gymnastics 1
   PE 222 — Fundamentals of Track and Field 1
   PE 306 — Techniques in Teaching Creative Dance 1
   PE 307 — Techniques in Camping and Outdoor Recreation 1
   PE 321 — Practicum in Physical Education (twice) 2
   PE 327 — Physical Education for Children 3
   PE 406 — Instructional Methodologies for Physical Activity 3
   PE 411 — Sports & Physical Activity in Today's World 3
   PE 425 — Administration of P.E. and Athletics 3
   PE 442 — Measurement and Evaluation in Physical Activity 3

Requirements

Exercise Science — B.S. Degree

1. Complete the general university requirements and B.S. degree requirements.

2. Complete the following background requirements as part of the baccalaureate core and B.S. degree requirements:

   Credits
   BIOL 211X-212X — Human Anatomy and Physiology I and II 8
   CHEM 105X-106X or CHEM 105X-106X 8
   COMM 141X — Fund. of Oral Communication: Public Context 3
   STAT 200 — Elementary Probability and Statistics 3

3. Complete the following program (major) requirements:

   Required Courses (47 Credits)
   PE 205 — Introduction to the Human Movement Sciences 2
   PE 224 — Fundamentals of Resistive Training 1
   PE 225 — Fundamentals of Cardiovascular Training 1
   PE 226 — Fundamentals of Movement Mechanics 1
   PE 232 — Analysis of Human Movement 3
   PE 246 — Advanced First Aid 3
   PE 316 — Motor Development or PE 317 — Motor Learning 3
   PE 321 — Practicum in Physical Education 1

   Elective Credits (select a minimum of 8 credits) 8
   Included in these must be one winter sport, one individual sport, and one team sport.

   PE 211 — Fundamentals of Softball 1
   PE 212 — Fundamentals of Basketball 1
   PE 213 — Fundamentals of Ice Sports 1
   PE 214 — Fundamentals of Snow Sports 1
   PE 215 — Fundamentals of Volleyball 1
   PE 216 — Fundamentals of Rhythms 1
   PE 217 — Fundamentals of Recreational Activities 1
   PE 218 — Fundamentals of Soccer 1
   PE 219 — Fundamentals of Aquatics 1
   PE 220 — Fundamentals of Wrestling 1
   PE 221 — Fundamentals of Gymnastics 1
   PE 222 — Fundamentals of Track and Field 1

   Elective Credits (select a minimum of 5 courses) 5

   PE 300 — Advanced Techniques of Gymnastics 1
   PE 302 — Advanced Techniques of Basketball 1
   PE 303 — Advanced Techniques in Ice Sports 1
   PE 304 — Advanced Techniques in Snow Sports 1
   PE 305 — Techniques in Volleyball 1
   PE 306 — Techniques in Teaching Creative Dance 1
   PE 307 — Techniques in Camping and Outdoor Recreation 1
   PE 308 — Techniques in Track and Field 1

   PE 309 — Aquatics Instructor 2
   PE 310 — Techniques in Teaching Folk and Square Dance 1

   Elective Credits (select a minimum of 7 credits) 7

   PE 317 — Motor Learning 3
   PE 321 — Practicum in Physical Education 3
   PE 327 — Physical Education for Children 2
   PE 401 — Theory of Basketball 2
   PE 406 — Instructional Methodologies for Physical Activity 3
   PE 411 — Sports & Physical Activity in Today's World 3
   PE 412 — Principles and Problems in Athletic Coaching 3

   PE 425 — Administration of P.E. and Athletics 3

   PE 440 — Prevention and Care of Athletic Injuries 3
   PE 442 — Evaluation in Physical Activity 3

   Minimum credits required 130

MINOR in Physical Education:

For a minor in P.E. for a B.A. degree, complete 18 approved credits in Physical Education at the 200-level or above.

Physical Therapy

Pre-Professional Advising (907) 474-6396

Physical therapy is a health profession dedicated to the promotion of health, the prevention of disease, and to providing the assessment, evaluation and rehabilitation of the muscular, skeletal, and nervous systems after injury or disease. Typically, physical therapists work in rehabilitation units in hospitals, in conjunction with orthopedic practices, in private rehabilitation practices, and in sports medicine clinics. Along with delivering physical rehabilitation, many also serve as administrators, researchers and educators.

Physical therapy education typically consists of a program two years in length. Some programs lead to a bachelor's degree, others offer a certificate, while still others lead to a master's degree. The trend across the nation is towards the latter as requires completion of a bachelor's degree prior to admission. As with most health care professions, the first half of the training consists of classroom instruction, while the second emphasizing clinical practice. After completion of programs accredited by the American Physical Therapy Program,
students are eligible to test for licensure in all 50 states.

Acceptance to physical therapy programs is very competitive and is based upon several factors. Included are overall academic achievement (most requiring a 3.0 gpa minimum), achievement in foundational sciences, and work experience in health-care situations. Graduate programs usually require the Graduate Record Examination and/or the Miller Analogies Test. UAF does not prescribe a specific major for pre-physical therapy students. Rather, students complete a series of courses which are required for admission to most programs: physics (PHYS 103X, 104X), Anatomy and physiology (BIOL 211X, 212X), and statistics (STAT 300). Careful planning is necessary as course requirements over and above these differ between schools.

Students considering a career in physical therapy should contact the Academic Advising Center. There, students will be assigned an advisor to assist with program planning, exploration of professional schools and licensing requirements.

Physics

College of Natural Sciences
Department of Physics

Degrees: B.A., B.S., M.S., M.A.T., Ph.D.

Minimum Requirements for Degrees: B.A.: 130 credits; B.S.: 130 credits; M.S.: 30 additional credits; M.A.T.: 36 additional credits; Ph.D.: no fixed credits

The physics department is responsible for the physics, space physics, atmospheric sciences, and the general science programs. See space physics and atmospheric sciences listings for more information on degree requirements in these disciplines.

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

The undergraduate curriculum provides a solid foundation in general physics with emphasis on its experimental aspects. Furthermore, opportunity is given to the physics student to study areas in applied physics such as atmospheric physics, space physics and engineering physics. A student completing this curriculum should be prepared for careers in education and industry, and for advanced work in the fields of physics, applied physics and related sciences.

Requirements

Physics — B.A. Degree
1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:
   Complete the foundation courses:
   Credits
   PHYS 113 — Concepts of Physics ........................................ 1
   PHYS 211X-212X — General Physics ................................... 8
   PHYS 213 — Elementary Modern Physics .............................. 3
   Complete a minor in mathematics, which includes MATH 200-201-
   202, and six credits at the 300-level or above.
   Complete 20 additional credits of approved courses in physics.
   Minimum credits required ............................................... 130

Physics — B.S. Degree
1. Complete general university requirements and B.S. degree requirements.
2. Complete the following program (major) requirements:
   MATH 200-201-202, 302 and 9 additional credits at the 300-level or above.
   PHYS 113, 211-212, 213, 311-312-313, 331-332, 411-412, 381,
   382, 445 and 462.
   Minimum credits required ............................................... 130

Suggested Curriculum for B.S. Degree

First Year
Fall Semester ............................................................ 16 credits
   ENGL 111X — Methods of Written Communication ............... 3
   MATH 200X — Calculus ............................................. 4
   CHEM 105 — General Chemistry .................................... 4
   BIOL 105X or GEOL 101X .......................................... 4
   PHYS 113 — Concepts of Physics .................................... 1

Spring Semester .......................................................... 18 credits
   COMM 131X or 141X — Fundamentals of Oral Communication
   PHYS 211 — General Physics ......................................... 4
   MATH 210X — Calculus ............................................. 4
   CHEM 106 — General Chemistry .................................... 4
   ES 201 — Computer Techniques .................................... 3

Second Year
Fall Semester ............................................................ 16 credits
   MATH 202X — Calculus ............................................. 4
   PHYS 212 — General Physics ......................................... 4
   ENGL 211X — Intermediate Exposition with Modes of Literature
   or ENGL 213X — Intermediate Exposition ........................ 4
   GEOL 102X or BIOL 105X ........................................... 4
   Perspectives on the Human Condition ........................... 3

Spring Semester .......................................................... 16 credits
   MATH 302 — Differential Equations ................................ 3
   PHYS 213 — Elementary Modern Physics ........................... 3
   Perspectives on the Human Condition ........................... 3

Third Year
Fall Semester ............................................................ 16 credits
   MATH 421 — Applied Analysis I ................................... 4
   PHYS 311 — Mechanics .............................................. 4
   PHYS 331 — Electricity and Magnetism ............................ 3
   PHYS 381 — Physics Laboratory ..................................... 3
   Perspectives on the Human Condition ........................... 3

Fourth Year
Fall Semester ............................................................ 16 credits
   MATH 411 — Modern Physics ....................................... 4
   PHYS 313 — Thermodynamics ....................................... 4
   PHYS 462 — Optics ................................................... 4
   ES 307 — Elements of Electrical Engineering ...................... 3
   Free elective ............................................................ 1

Spring Semester .......................................................... 17 credits
   PHYS 412 — Modern Physics ....................................... 4
   PHYS 445 — Solid State Physics ..................................... 4
   ES 308 — Instrumentation and Measurement ....................... 3

MINOR in Physics:
A minor in Physics requires 20 credits: PHYS 103X-104X or PHYS 211-
212 and 12 credits selected from PHYS 213 and any 300-400 level course.

Physics — M.S., M.A.T., or Ph.D. Degree

Graduate work is offered in various areas of physics and applied physics including many of the research areas found at the UAF Geophysical Institute. The research program of the Geophysical Institute currently emphasizes investigations of auroral, ionospheric, magnetospheric and space plasma physics, the physics and chemistry of the upper and middle atmosphere, radiowave propagation and scattering, solar-terrestrial relations, and polarimetry.

A graduate student may designate his/her major field as physics, space physics or atmospheric sciences. He/she will pursue his/her studies under the supervision of an advisory committee which will advise on the course of study to be followed.

For complete information on the graduate programs in physics, see the UAF Graduate Catalog.

Political Science

College of Liberal Arts
Department of Political Science

Degree: B.A.

Minimum Requirements for Degree: 130 credits

The study of political science is the study of human efforts to create social
organizations and processes compatible with our environment. Political science is related to all of the social science disciplines. It is the study of the dynamics of human behavior in various cultural, national and international spheres.

Students of political science may prepare for teaching or for advanced study in law and the social sciences, or prepare themselves for careers in public service.

Requirements

Political Science — B.A. Degree
1. Complete general university requirements and B.A. degree requirements including PS 100X, PS 300X, HIST 100X
2. Complete the following foundation requirements (7 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 200 — Principles of Economics (or equivalent economics course)</td>
<td>4</td>
</tr>
<tr>
<td>HIST 131 or 132 — History of the U.S.</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Complete the following major degree requirements (33 credits):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS 101 — Introduction to American Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 222 — Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>PS 492 — Senior Seminar in Political Science</td>
<td>3</td>
</tr>
<tr>
<td>Complete 24 additional credits in political science including at least three credits from 4 of the 5 following sub-disciplinary groups: American Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 210 — Alaska Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 212 — Introduction to Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>PS 301 — American Presidency</td>
<td>3</td>
</tr>
<tr>
<td>PS 302 — Congress and Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>PS 401 — Political Behavior</td>
<td>3</td>
</tr>
<tr>
<td>PS 403 — Public Policy</td>
<td>3</td>
</tr>
<tr>
<td>Public Law</td>
<td>3</td>
</tr>
<tr>
<td>PS 303 — Politics and the Judicial Process</td>
<td>3</td>
</tr>
<tr>
<td>PS 330 — Law, Justice and Society</td>
<td>3</td>
</tr>
<tr>
<td>PS 304 — Introduction to Legal Research and Writing</td>
<td>3</td>
</tr>
<tr>
<td>PS 435 — Constitutional Law I: Institutions and Governmental Power</td>
<td>3</td>
</tr>
<tr>
<td>PS 436 — Constitutional Law II: Civil Rights and Civil Liberties</td>
<td>3</td>
</tr>
<tr>
<td>Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 211 — Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 202 — Cases in Comparative Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 311 — Government and Politics of the Russian and the Periphery</td>
<td>3</td>
</tr>
<tr>
<td>PS 312 — East Asian Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 460 — Government and Politics of Canada</td>
<td>3</td>
</tr>
<tr>
<td>PS 461 — Government and Politics of Latin America</td>
<td>3</td>
</tr>
<tr>
<td>International Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 321 — International Politics</td>
<td>3</td>
</tr>
<tr>
<td>PS 322 — International Law and Organizations</td>
<td>3</td>
</tr>
<tr>
<td>PS 323 — International Political Economy</td>
<td>3</td>
</tr>
<tr>
<td>PS 437 — American Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>PS 438 — Peace and National Security</td>
<td>3</td>
</tr>
<tr>
<td>Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>PS 314 — Political Ideologies</td>
<td>3</td>
</tr>
<tr>
<td>PS 315 — American Political Thought</td>
<td>3</td>
</tr>
<tr>
<td>PS 411 — Classical Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>PS 412 — Modern Political Theory</td>
<td>3</td>
</tr>
<tr>
<td>PS 415 — Contemporary Political Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

MINOR in Political Science
A minor in Political Science requires 15 credits distributed as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS 101 — Introduction to American Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>Complete 12 credits in political science including three (3) credits each from four of the five following sub-disciplinary groups: American Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>Public Law</td>
<td></td>
</tr>
<tr>
<td>Comparative Politics</td>
<td></td>
</tr>
<tr>
<td>International Politics</td>
<td></td>
</tr>
<tr>
<td>Political Theory</td>
<td></td>
</tr>
</tbody>
</table>

Professional Communication

College of Liberal Arts
Department of Communication
(907) 474-6591
Degrees: M.A.

Minimum Requirements for Degrees: 30-33 credits beyond bachelor's degree
For complete information on the graduate program in professional communication, see the UAF Graduate Catalog or contact one of the sponsoring departments.

Psychology

College of Liberal Arts
Department of Behavioral Sciences and Human Services
(907) 474-7240
Degrees: B.A., B.S.

Minimum Requirements for Degrees: 120 credits

Psychology — B.A. or B.S. Degree
1. Complete the general university requirements and B.A. or B.S. degree requirements.
2. Complete the following Psychology Department requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 101 — Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY/SOC 250 — Introductory Statistics for Behav. Sci or STAT 200 — Elementary Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>PSY/SOC 473 — Social Science Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>Complete three credits of a diversity requirement, selected from courses listed below, but not limited to: ANS (any course)</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 242, 301, 302, 303, 380, 381, 382, 383</td>
<td>3</td>
</tr>
<tr>
<td>COMM 330, 351</td>
<td></td>
</tr>
<tr>
<td>HIST 110, 123, 141, 142, 200</td>
<td></td>
</tr>
<tr>
<td>HST 120</td>
<td></td>
</tr>
<tr>
<td>JB 380</td>
<td></td>
</tr>
<tr>
<td>RD 315, 375</td>
<td></td>
</tr>
<tr>
<td>PSY 210, 360</td>
<td></td>
</tr>
<tr>
<td>SOC 160, 242, 408</td>
<td></td>
</tr>
<tr>
<td>WMS (any course)</td>
<td></td>
</tr>
</tbody>
</table>

4. Concentration Areas: Complete a minimum of 15 credits selected from an area of concentration listed below and a minimum of 6 credits from the remaining area.

Experimental, Learning, Physiological Area:
PE/PSY 337 — Exercise and Sport Psychology | 3       |
PSY 350 — Comparative Psychology | 3       |
PSY 370 — Drugs and Drug Dependence | 3       |
PSY 380 — Human Behavior in the Arctic | 3       |
PSY 440 — Learning | 3       |
PSY 460 — Physiological Psychology | 4       |
PSY 470 — Sensation and Perception | 3       |
PSY 475 — Experimental Psychology | 3       |
Community, Clinical, Social-Personality Area:
PSY 230 — Psychology of Adjustment | 3       |
PSY 240 — Develop. Psychology in Cross-cultural Persp. | 3       |
PSY 304 — Personality | 3       |
PSY 310 — Cross-Cultural Psychology | 3       |
PSY 330 — Social Psychology | 3       |
PSY 345 — Abnormal Psychology | 3       |
PSY 353 — Psychology of Women Across Cultures | 3       |
PSY 445 — Community Psychology | 3       |
PSY 455 — Clinical Psychology | 3       |
Minimum credits required for degree | 120     |
Renewable Resources

College of Rural Alaska
Department of Rural Development  
(907) 474-6432
Degree: A.A.S.
Minimum Requirements for Degree: 60 Credits

Requirements

Renewable Resources — A.A.S. Degree
1. Complete the following general university and A.A.S. requirements:
   Communications:
   ENG 111X — Methods of Written Communication .......... 3
   or ENG 211X — Intermediate Exposition with Modes of Literature
   or ENG 212* — Business, Grant and Report Writing
   or ENG 213X — Intermediate Exposition .......... 3
   or COMM 131X — Fund. of Oral Communication: Group Context
   or COMM 141X — Fund. of Oral Communication: Public Credit
   MATH 107** — Functions for Calculus
   or MATH 131 — Concepts and Contemporary Applications of Mathematics .......... 3
   or CHEM 103X — Basic General Chemistry
   or CHEM 105X — General Chemistry ............. 4

2. Complete the following major degree requirements (30 credits minimum):
   ECON 235 — Introduction to Natural Resources Economics .... 3
   or BIOL 104 — Natural History of Alaska (3)
   or BIOL 104X — Natural History of Alaska (4)
   or BIOL 105X — Fundamentals of Biology I (4) .... 3-4
   or GEOG 100X — Introduction to Earth Science (4)
   or GEOG 205 — Elements of Physical Geography (3 or 4)
   or NRM 380** — Soils and the Environment (3) .... 3-4
   or NRM 102 — Practicum in Natural Resources Management (1-2)
   or WLF 304 — Wildlife Internships (1-3) ...... 1-3
   Complete the following:
   CAPS 100 — Introduction to Personal Computers (1)
   or CAPS 111 — Computer Software for Beginners (2)
   or CAPS 150 — Computer Business Applications (3) ...... 3
   or FISH 101 — Introduction to Fisheries (3)
   or WLF 101 — Survey of Wildlife Science (1)
   or ABUS 223 — Real Estate Law (3)
   or RD 256** — Topics in Rural Land Management (3)
   or BIOL 219** — Principles of Ecology (4)
   or WLF 201** — Wildlife Management Principles (3) ...... 4-7
   Electives:
   Complete 9-14 credits from the following courses:
   ANS 310** — Alaska Native Corporations (3)
   ANTH 242 — Native Cultures of Alaska (3)
   BIOL 106X** — Fundamentals of Biology II (4)
   BIOL 239** — Introduction to Plant Biology (4)
   BIOL 271** — Principles of Ecology (3)
   BIOL 150 — Introduction to Marine Biology (3)
   CE 112** — Elementary Survey (3)
   EMS 103 — First Responder (3)
   or PE 246 — First Aid (3)
   or ENGL 314** — Technical Writing (3)
   or FISH 101 — Introduction to Fisheries (3)
   or MIN 101 — Minerals, Man and the Environment (3)
   or NRM 251** — Silvics and Dendrology (3)
   or NRM 304** — Perspectives on Natural Resources Management (3)
   or NRM 340 — Natural Resources Measurement and Inventory (3)
   or RD 265 — Perspectives on Subsistence in Alaska (3)
   or RD 492 — Rural Development Seminar (3)
   or STAT 200** — Elementary Probability and Statistics (3)
   WLF 101 — Survey of Wildlife Science (1)
   WLF 201** — Wildlife Management Principles (3)
   WLF 303** — Wildlife Management Techniques (3) ...... 9-14
   Degree Total .......................................................... 60

4. A maximum of 5 credits earned from the following list of one credit skills courses may be counted as electives for this program:
   SCIA 113 — Map Reading and Orientation (1)
   SCIA 120 — Moose Ecology (1)
   SCIA 157 — Alaskan Plants (1)
   SCIA 161 — Birds of Alaska (1)
   SCIA 162 — Mammals of Alaska (1)
   Note: Other electives may be accepted upon approval of student's adviser.

*ENGL 212 does not fulfill the second half of the written communication requirement for the baccalaureate degree.
**MATH 107 does not fulfill UAF core requirement.
***Prerequisites required.

Resource Economics

School of Management
Department of Economics  
(907) 474-7119
Degree: M.S.
Minimum Requirements for Degree: 30 additional credits.

The M.S. degree in resource economics program offers a specialization in the economics of natural resources with emphases in a variety of specific fields possible through interdisciplinary elective courses and thesis research, e.g., fisheries, wildlife management, land resources management, agriculture, oil and minerals, water resources and forest management.

For complete information on the graduate program in resource economics, see the UAF Graduate Catalog.

Rural Development

College of Rural Alaska
Department of Rural Development  
(907) 474-6432
Degree: B.A.
Minimum Requirements for Degree: 120 credits

The Rural Development (RD) degree is designed for those committed to the empowerment of Alaska Native and other rural communities. A Bachelor of Arts Degree in Rural Development provides a broad understanding of development processes in Alaska and the global community. It also provides specific tools essential for rural leadership, including grant writing, business planning, resources co-management, and project management and evaluation.

RD students work with a faculty advisor to develop program emphasis in one of five areas: Land/Renewable Resources, Local Government Administration, Small Business Management, Community Research and Cultural Documentation, Community Organization and Service.

The RD program is available to students away from the Fairbanks campus through the RD Applied Field-Based Program. Special admission requirements apply to this program. Contact the Department or an RD faculty member for further information.

Requirements

Rural Development — B.A. Degree
1. Complete the general university requirements and the B.A. degree requirements.
2. Complete the following program (integrated major/minor) requirements:

Credits

Rural Development Core (30 credits):
   RD 300 — Rural Development in a Global Perspective .......... 3
   RD 325 — Community Development Strategies .......... 3
   RD 350 — Community Research Techniques .......... 3
   RD 351 — Community Planning and Grant Writing Techniques .......... 3
   RD 400 — Rural Development Internship .......... 3
   RD 450 — Managing Community Development Projects .......... 3
   RD 475 — Senior Project .......... 3
   RD Elective .......... 6
   RD or ED Elective .......... 3
### Degrees and Programs

**Applied Emphasis (24 credits):**

Complete a minimum of 24 elective credits (in addition to any required prerequisites) in one of the following groupings. (These elective credits can also be used to fulfill the humanities, social sciences, mathematics, and general requirements for the B.A. degree.)

**Land/Renewable Resources Emphasis**
- Designed for individuals interested in becoming involved in the management of village corporation lands.

**Aboriginal CULTURAL DIFFERENCES IN NARRATIVE**
- Alaskan Native studies

**Elementary Accounting**
- Perspectives

**Public Finance**
- Land Use Planning

**Photography**
- Introduction to Conservation Biology

**Computer Software for Beginners**
- CE 112 - Elementary Surveying

**CS 101 - Computers and Society**

**ECON 235 - Intro to Natural Resource Economics**

**ENGL 314 - Technical Writing**

**ENQ 201 - Environmental Management**

**FISH 101 - Introduction to Fisheries**

**FISH 401 - Fisheries Management**

**GEOG 338 - Intro to Geographic Information Systems**

**GEOS 101X - The Dynamic Earth**

**GEOS 102X - Environmental Geology**

**MIN 101 - Minerals, Man and the Environment**

**MSL 111X - The Oceans**

**NRM 101 - Conservation of Natural Resources**

**NRM 204 - Natural Resources Legislation and Policy**

**NRM 340 - Natural Resources Management and Inventory**

**NRM 404 - Processes of Natural Resources Decision Making**

**NRM 430 - Land Use Planning**

**PS 420 - Environmental Politics**

**RD 255 - Rural Alaska Land Issues**

**RD 256 - Co-management of Renewable Resources**

**RD 265 - Perspectives on Subsistence in Alaska**

**RD 280 - Resource Management Research Techniques**

**WLF 201 - Wildlife Management Principles**

**WLF 303 - Wildlife Management Techniques**

**Approved Electives**
- 3 or more

**Local Government Administration Emphasis**
- Designed for individuals interested in becoming involved in the administration of small municipal cities and/or IRA Tribal Governments.

**ABUS 145 - Human Relations**

**ABUS 179 - Fundamentals of Supervision**

**ACCT 101 - Elementary Accounting I**

**ACCT 102 - Elementary Accounting II**

**ACCT 103 - Governmental Accounting**

**ANS 120 - Cultural Differences in Institutional Settings**

**ANS 121 - Alaska Native Land Settlement**

**ANS 425 - Federal Indian Law and Alaska Natives**

**APAR 103 - Editing Videotape**

**CAPS 111 - Computer Software for Beginners**

**CS 101 - Computers and Society**

**ED 311 - Intro to Instructional Techniques**

**ENGL 313 - Writing Non-Fiction Prose**

**ENGL 314 - Technical Writing**

**ENGL 349 - Narrative Art of Alaska Native Peoples**

**HIST 350 - Alaska History for Local Historians**

**HIST 470 - Researching and Writing Alaska History**

**JB 215 - Audio Production**

**JB 311 - Magazine Article Writing**

**JB 317 - Broadc...sty**

**LS 309 - Information Resources**

**LS 482 - History of Circumpolar Research**

**MSM 211 - Fundamentals of Museum Studies**

**MSM 212 - Fundamentals of Museum Studies II**

**MSM 312 - Museum Collection Management**

**RD 425 - Cultural Impact Analysis**

**SOC 250 - Intro. Statistics for Behavioral Sciences**

**SOC 373 - Social Science Research Methods**

**COMM 225 - Listening and Interviewing**

**COMM 330 - Intercultural Communication**

**Approved Electives**
- 3 or more

**Community Organization and Service Emphasis**
- Designed for individuals who are interested in becoming involved with community level service organizations and programs.

**ABUS 154 - Human Relations**

**ABUS 179 - Fundamentals of Supervision**

**ACCT 231 - Introduction to Personnel**

**ABUS 232 - Contemporary Management Issues**

**ANS 120 - Cultural Differences in Institutional Settings**

**ANS 425 - Federal Indian Law and Alaska Natives**

**ENGL 314 - Technical Writing**

**HMSV 201 - Introduction to Human Services**

**HMSV 230 - Alcoholism: Causes and Consequences**

**HMSV 410 - Management of Human Services Programs**
**Rural Human Services**

**College of Rural Alaska**

**Interior-Aleutians Campus**

(907) 474-5439

**Certificate**

**Minimum Requirements for Certificate: 30 Credits**

The Rural Human Services Certificate is a one-year program designed to facilitate development of strong and healthy rural Alaska Native individuals, families, and communities. Developed for village-based human service providers preparing to be natural helpers/healers in their communities, the program provides entry-level training for village-based public, private, and volunteer human service organizations. Drawing extensively on resource people from the Native community, curriculum content and delivery reflect a strong multicultural orientation that validates, incorporates, and builds on Native values and principles. Courses are offered through a series of four training sessions. Each of the four sessions last three weeks and consist of six credits. Students spend the time in intensive study at selected delivery sites. A four credit practicum and two electives round out the program.

Admission is open to all individuals employed by a regional Native health corporation or local entity providing delivery of village-based human services, or individuals recognized by their communities as natural helpers/healers. A high school diploma or GED and/or previous training or work experience in the delivery of village-based human services is recommended but not required.

**Requirements**

1. Complete the certificate requirements in the following recommended sequence:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHS 110</td>
<td>Cross-Cultural Bridging Skills</td>
<td>2</td>
</tr>
<tr>
<td>RHS 115</td>
<td>Issues of Personal Development in the Delivery of Rural Human Services</td>
<td>2</td>
</tr>
<tr>
<td>RHS 120</td>
<td>Family Systems I</td>
<td>2</td>
</tr>
<tr>
<td>RSH 130</td>
<td>Processes of Community Change</td>
<td>2</td>
</tr>
<tr>
<td>RSH 140</td>
<td>Alaska Native Values and Principles</td>
<td>2</td>
</tr>
<tr>
<td>RSH 150</td>
<td>Introduction to Rural Counseling</td>
<td>2</td>
</tr>
<tr>
<td>RSH 220</td>
<td>Family Systems II</td>
<td>2</td>
</tr>
<tr>
<td>RSH 250</td>
<td>Rural Counseling II</td>
<td>2</td>
</tr>
<tr>
<td>RSH 260</td>
<td>Addictions: Intervention and Treatment</td>
<td>2</td>
</tr>
<tr>
<td>RSH 265</td>
<td>Interpersonal Violence</td>
<td>2</td>
</tr>
<tr>
<td>RSH 285</td>
<td>Case Management</td>
<td>2</td>
</tr>
<tr>
<td>RSH 287</td>
<td>Rural Human Services Practicum</td>
<td>4</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>Total 30 Credits</strong></td>
<td></td>
</tr>
</tbody>
</table>

*prerequisites required

**MINOR in Rural Development:**

A minor in Rural Development requires the completion of 15 Rural Development credits at the 200 or above level, including RD 300.

---

**Russian Studies**

**Interdisciplinary**

Degree: B.A.

**Minimum Requirements for Degree: 130 credits**

**Requirements**

**Russian Studies — B.A. Degree**

1. Complete the following university requirements and B.A. degree requirements.

2. Complete the following program (major) requirements:

   - Russian Studies core courses (24 credits):
     - Approved Anthropology Elective
     - GEOG 306 - Geography of Russia
     - HIST 464 - Modern Russia
     - RUSS 301 - Advanced Russian
     - RUSS 302 - Advanced Russian
     - RUSS 431 - Studies in Russian Culture
     - RUSS 432 - Studies in Russian Literature
     - RUSS 487 - Translation
     - Complete at least 12 credits from the following courses or alternatives as approved by the program advisor:
       - BA 460 - International Business
       - BA 461 - International Finance
       - ECON 463 - International Economics
       - GEOG 405 - Political Geography
       - HIST 315 - Europe 1900-1945
       - PHIL 471 - Contemporary Philosophical Prob.
       - PS 202 - Comparative Politics: Contemporary Doctrines and Structures
       - PS 311 - Government and Politics of Russia and the Periphery Europe
       - PS 321 - International Politics
       - PS 322 - International Law and Organization
     - Minimum credits required 130
     - * Students must complete two years of Russian language study (RUSS 101-102, 201-202) or equivalent as a prerequisite for RUSS 301-302.

**MINOR in Russian:**

A minor in Russian studies requires 15 credits taken from the Russian Studies core courses and approved by the program adviser.

---

**Science Management**

**School of Engineering**

**Department of Engineering and Science Management**

(907) 474-6121

**Degrees:** M.S.

**Minimum Requirements for Degrees: 33 credits (beyond a bachelor's degree in a scientific field)**

The science management curriculum is designed for graduate scientists who will hold executive or managerial positions in engineering, construction,
industrial, or governmental organizations. It includes human relations, financial, economic, quantitative, technical and legal subjects useful in solving problems of management.

For complete information on the graduate program in Science Management, see the UAF Graduate Catalog.

Social Work

College of Liberal Arts
Department of Behavioral Sciences
and Human Services  
907 474-7240

Degrees: B.A.

Minimum Requirements for Degrees: B.A.: 120 credits

Graduates in social work qualify for beginning practice positions in child welfare, mental health, services to the aged, family agencies, youth programs, health services, Native corporations, and various other social agencies. Students learn to work with people on a personal level and are placed in associational agency as part of their course work during the senior year. Social work applies knowledge in the behavioral sciences to deal with the emotional and social problems of individuals, families, and communities. The program is offered at the Fairbanks, Chukchi and Northwest campuses.

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.

The UAF baccalaureate social work program has attained national accreditation with the Council on Social Work Education.

Requirements

Social Work — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements. (Note: BIOL 103X must be taken to meet natural science requirement and SOC 100X must be taken as part of the baccalaureate core.)

2. Complete the following departmental core requirements:

   - *PSY 101 — Introduction to Psychology ........................................ 3
   - *SOC 100X — Individual, Society, and Culture .................................. 3
   - SOC 250 — Introductory Statistics for Behav. Sci. ................................ 3
   - *PSY 240 — Develop. Psychology in Cross-Cultural Persp. ...................... 3
   - SOC 473 — Social Science Research Methods ...................................... 3
   - *ANTH 242 — Native Cultures of Alaska ......................................... 3

3. Complete the following courses:

   - SWK 103 — Social Work in the Human Services .................................. 3
   - SWK 306 — Social Welfare: Policy and Issues .................................... 3
   - SWK 320 — Rural Social Work ...................................................... 3
   - SWK 342 — Human Behavior and the Social Environment ........................ 3
   - SWK 460 — Social Work Practice I .................................................. 3
   - SWK 461 — Practicum in Social Work 106 ......................................... 3
   - SWK 463 — Social Work Practice II ............................................... 6
   - SWK 464 — Practicum in Social Work II .......................................... 6
   - SOC 242 — The Family: A Cross-Cultural Perspective ............................ 3

4. Complete 9 credits from the following Special Problems areas:

   - SWK 360 — Child Abuse and Neglect ............................................... 3
   - SWK 484 — Seminar in Social Work Practice ....................................... 3
   - SOC 310 — Sociology of Later Life .................................................. 3
   - SOC 335 — Deviant Behavior .......................................................... 3
   - SOC 363 — Social Stratification ...................................................... 3
   - SOC/PSY 370 — Drugs and Drug Dependence ..................................... 3
   - SOC 408 — American Minority Groups .............................................. 3
   - PSY 255 — Foundations of Counseling ............................................. 3
   - PSY 355 — Foundations of Counseling II ......................................... 3
   - PSY 360 — Psychology of Women .................................................... 3
   - PSY 375 — Community Psychology .................................................. 3
   - RD 325 — Community Development Strategies .................................... 3
   - RD 375 — Women and Development ................................................... 3
   - JUST 258 — Juvenile Delinquency ................................................... 3
   - JUST 310 — Principles of Corrections .............................................. 3
   - JUST 340 — Rural Justice in Alaska ................................................ 3
   - HST 120 — Cultural Diversity in Human Services ................................ 3
   - HST 205 — Basic Principles Group Counseling ................................... 3
   - HST 210 — Crisis and Grief Counseling ........................................... 3
   - HST 215 — Individual Interviewing .................................................. 3
   - HST 250 — Current Issues in Human Service ..................................... 3
   - HST 301 — Ethics in Human Service ................................................ 3

   *May be used toward B.A. general degree requirements where applicable.

Sociology

College of Liberal Arts
Department of Behavioral Sciences
and Human Services  
907 474-7240

Degrees: B.A., B.S.

Minimum Requirements for Degrees: 120 credits

Sociology is the study of groups and their influence on personal behavior and culture. It is concerned with social processes that give rise to and shape human language, experience, perception, meaning, and behavior.

Requirements

Sociology — B.A. or B.S. Degree

1. Complete the general university requirements and B.A. or B.S. degree requirements.

   Credits

   - *PSY 101 — Introduction to Psychology ........................................... 3
   - SOC 101 — Introduction to Sociology .............................................. 3
   - *PSY 240 — Develop. Psychology in Cross-Cultural Persp. ...................... 3
   - PSY/SOC 250 — Introductory Statistics for Behav. Sci. ........................ 3
   - PSY/SOC 473 — Social Science Research Methods ................................ 3
   - *ANTH 242 — Native Cultures of Alaska ......................................... 3

2. Complete the following Sociology Core requirements:

   - SOC 301 — Rural Sociology .......................................................... 3
   - PSY/SOC 330 — Social Psychology ................................................ 3
   - SOC 363 — Social Stratification ..................................................... 3
   - SOC 402 — Theories of Sociology .................................................. 3

3. Complete the following Sociology Core requirements:

   - SOC 102 — Social Institutions ...................................................... 3
   - SOC 250 — Rural Social Work ...................................................... 3
   - SOC 242 — The Family: A Cross-Cultural Perspective ............................ 3
   - SOC 307 — Demography ................................................................. 3
   - SOC 309 — Urban Sociology .......................................................... 3
   - SOC 310 — Sociology of Later Life ................................................ 3
   - SOC 335 — Sociology of Deviant Behavior ....................................... 3
   - SOC 370 — Drugs and Drug Dependence ......................................... 3
   - SOC 406 — Social Change ............................................................... 3
   - SOC 405 — Social Organizations .................................................... 3
   - SOC 407 — Social Institutions ...................................................... 3
   - SOC 408 — American Minority Groups ............................................ 3
   - RD 325 — Community Org. & Devt. Strategies .................................... 3

   Minimum Credits required for Degree ............................................... 120

   *May be used toward B.A. general degree requirements where applicable.

   **Courses from this group not used toward the major may be applied toward B.A. general degree requirements where applicable.

MINOR in Sociology:

A minor in Sociology requires 18 credits in sociology including SOC. 101 and 102.

Space Physics

College of Natural Sciences
Department of Physics  
907 474-7339

Degrees: M.S., Ph.D.

Minimum Requirements for Degrees: M.S.: 30 additional credits; Ph.D.: no fixed credits

For complete information on the graduate programs in space physics, see the UAF Graduate Catalog.
Statistics

College of Liberal Arts
Department of Mathematical Sciences (907) 474-7332
Degree: B.S.
Minimum Requirements for Degree: 120 credits

Statistics is a collection of methods for making decisions or estimating unknown quantities from incomplete information. Statistical techniques are useful, for example, in estimating plant, animal and mineral abundances; forecasting social, political and economic trends; planning field plot experiments in agriculture; performing clinical trials in medical research; and maintaining quality control in industry. Employment opportunities are excellent for statisticians in many of these areas of application.

The curriculum for the B.S. in statistics provides a strong mathematics and statistics background and integrates this with an area of application. The program allows considerable flexibility in the choice of the area of application.

The statistics program is administered by the Department of Mathematical Sciences. In addition to the B.S. in statistics, the department offers a bachelor’s degree in mathematics with an emphasis in statistics. A minor in statistics is also available.

Requirements

Statistics — B.S. Degree
No student will be allowed to declare Statistics as a major unless she/he is ready to matriculate into MATH 200, Calculus I. Upon satisfying the above condition the student must satisfy the following requirements in order to graduate with a degree in Statistics.

1. Complete the general university requirements and B.S. degree requirements. The mathematics requirements should be met with MATH 200-201. ENGL 314 is recommended to fulfill one of the writing intensive course requirements.

2. Complete the following major requirements:

   A. Statistics Core (26 Credits)
      MATH 202X — Calculus ........................................... 4
      MATH 371 — Probability ........................................... 3
      MATH 408 — Mathematical Statistics ........................... 3
      CS 103 — Intro. to Computer Programming ................. 3
              or any higher level CS course ......................... 3
      STAT 200 — Elementary Probability and Statistics .... 3
              or STAT 300 — Statistics .............................. 3
      STAT 401 — Regression and Analysis of Variance .......... 4
      STAT 402 — Scientific Sampling ............................. 3
      STAT 498 — Senior Project ........................................ 3
      B. Electives in the Major
         Choose two of the following:
         STAT 461 — Applied Multivariate Statistics .............. 3
         MATH 307 — Discrete Mathematics ................................ 3
         MATH 310 — Numerical Analysis ............................. 3
         MATH 314 — Linear Algebra ................................... 3
         MATH 401 — Advanced Calculus I ................................. 3
         MATH 402 — Advanced Calculus II ............................... 3
         MATH 460 — Mathematical Modeling ............................ 3
         STAT, MATH or statistical discipline oriented course approved by the statistics program chairperson ........................................ 3
         C. Area of Application* (24 Credits)
            Complete a minimum of 24 credits, including at least 6 upper division, in a single discipline in which a UAF Bachelor’s Degree is offered. Joint approval in writing is required from the department head in the area of application and the statistics advisor. ** 120

   * Credits received in the area of application may reduce the number of required credits in the general distribution requirements of humanities/social science and science.
   ** Examples of programs for areas of application for computer science, biology, wildlife, geology, natural resource management, and economics are available. Other areas of application are available.

   A mathematics minor is completed by all statistics majors.

Minor in Statistics:

   Complete the following:
   STAT 200 — Elementary Probability and Statistics ...
   or STAT 300 — Statistics ........................................... 3
   STAT 401 — Regression and Analysis of Variance ........ 3
   MATH 371 — Probability ........................................... 3
   MATH 408 — Mathematical Statistics ........................... 3

   Complete three (3) credits of approved MATH, STAT or STAT related course work (e.g., BA 360, GEOS 430, ANTH 424, MATH 460, etc.) 3

   Fisheries majors selecting the research option need only complete MATH 371 and 40 in addition to their fisheries requirements to obtain a minor in statistics.

   *MATH 371 requires MATH 200-201-202 as prerequisites.

   These courses can be used to simultaneously satisfy other major or general distribution requirements.

Technology

Interdisciplinary Program

Degree: B.T.
Minimum Requirements for Degree: 120 credits
The Bachelor of Technology degree offers qualified applicants the opportunity to expand upon their technical education. The Bachelor of Technology degree allows students to choose one of three areas of study: Business, Interdisciplinary Studies, or Education (currently not available).
Education provides preparation for the certifiable fields. Business enhances managerial/entrepreneurial skills. Interdisciplinary studies allows the exceptional student to tailor a baccalaureate program to his/her own unique needs.

Information and advising for this degree is through the Academic Advising Center.

Requirements

Technology — B.T. Degree

1. Complete the baccalaureate core (38-39 credits).
2. Complete the following B.T. requirements in addition to the core:

   Credits
   ENGL 314 — (to count as one of the upper division writing intensive courses) 3
   MATH — one course at the 100-level or above ........................................... 3
   Computer competency ............................................... 3
   BA 343 — Principles of Marketing ........................................... 3
   3. Area of specialization
   4. Complete one of the following options:
      Option 1: (32 credits)
      Note: For this option, no more than 25% of total course work may be taken in the School of Management.
      Option 2: (38 credits) (currently not available)
      Note: For this option students must apply and be accepted to the Teachers for Alaska Program. The area of specialization must be one that can be certified for teaching.
      Option 3: Interdisciplinary (Minimum of 30 credits)
      For this option see “Interdisciplinary Studies” in the Degrees and Programs section.

5. Electives (1-7 credits)

   Minimum credits required for degree ........................................... 120

   Of the above, at least 39 credits must be taken in upper division (300-
   level or higher) courses.
   The candidate for the B.T. degree must have 1) a minimum of 30 semester credits at UAF in the area of specialization (either completed in residence or accepted by transfer as equivalent to specific UAF courses), and 2) demonstrated competence in an applied or technical field. Competence must be demonstrated as follows:
1. Having earned an Associate of Applied Science degree from an accredited institution of higher education.
2. Substitute one of the following as a demonstration of competency in an applied or technical field with the approval of the Curricular Affairs Committee of the Faculty Senate:
   a. an A.A.S. or similar degree earned at a nonaccredited institution
   b. state or federal certification deemed appropriate by the faculty
   c. journeyman status in trades and industry

Theater

College of Liberal Arts
Department of Theater

Degree: B.A.

Minimum Requirements for Degree: 130 credits

The program in Theater is structured to familiarize students with the theory and practice applicable to all aspects of theatrical production. With a variety of career options open to theater majors, the program's coupling of classroom study with a substantial schedule of productions is designed to prepare the student pursuing the major or minor for employment or further education. In addition, theater classes and productions are open to the participation of all students and provide unique opportunities for creative expression and development when coupled with other programs. Students pursuing a major or minor in theater are encouraged to work closely with a theater faculty member in arranging their individual program of study, including appropriate courses in related disciplines.

Requirements

Theater — B.A. Degree

1. Complete the general university requirements and B.A. degree requirements.
2. Complete the following program (major) requirements:

   A. Required courses (21 credits):
      THR 121 — Fundamentals of Acting ......................... 3
      THR 241 — Basic Stagecraft ................................ 3
      THR 247 — Introduction to Theatrical Design .......... 3
      THR 254 — Basic Costume Construction and Design .... 3
      THR 331 — Fundamentals of Stage Direction .......... 3
      THR 411 — Theater History I ............................. 3
      THR 412 — Theater History II ............................ 3

   B. Complete one of the following emphasis tracts:

      Performance Emphasis (24)
      1) Complete five courses from:
         THR 221 — Intermediate Acting (3)
         THR 225 — Movement for the Actor (3)
         THR 321 — Advanced Acting I (3)
         THR 325 — Theatre Speech (3)
         THR 351 — Makeup for Theatre (3)
         THR 421 — Advanced Acting II (3) ...................... 15
      2) A minimum of one course from:
         THR 341 — Intermediate Stagecraft (3)
         THR 343 — Scene Design (3)
         THR 347 — Lighting Design (3)
         THR 355 — History of Stage Costume (3) ............. 3
      3) Complete two courses from:
         THR 161 — Introduction to Tuna Theatre (3)
         THR 220 — Voice and Diction for Theatre (3)
         THR 361 — Advanced Alaska Native Performance (3)
         THR 413 — Playscript Analysis (3)
         THR 435 — Advanced Stage Direction (3) .............. 6

      Design/Technical Theatre Emphasis (24)
      1) Complete one course from:
         THR 221 — Intermediate Acting (3)
         THR 225 — Movement for the Actor (3)
         THR 325 — Theatre Speech (3)
         THR 351 — Makeup for Theatre (3) ..................... 3
      2) Complete three courses from:
         THR 341 — Intermediate Stagecraft (3)
         THR 343 — Scene Design (3)
         THR 347 — Lighting Design (3)
         THR 355 — History of Stage Costume (3) ............. 9
      3) Complete three courses from:
         THR 220 — Voice and Diction for Theatre (3)
         THR 325 — Theatre Speech (3)
         THR 351 — Makeup for Theatre (3) ..................... 9
         THR 413 — Playscript Analysis (3)
         THR 435 — Advanced Stage Direction (3) ............. 9

   B. Complete one of the following emphasis tracts:

      Design/Technical Theatre Emphasis (24)
      1) Complete one course from:
         THR 221 — Intermediate Acting (3)
         THR 225 — Movement for the Actor (3)
         THR 325 — Theatre Speech (3)
         THR 351 — Makeup for Theatre (3) ..................... 3
      2) Complete four courses from:
         THR 225 — Movement for the Actor (3)
         THR 254 — Basic Costume Construction and Design .... 3
         THR 325 — Theatre Speech (3)
         THR 351 — Makeup for Theatre (3) ..................... 3
      3) Complete one course from:
         THR 341 — Intermediate Stagecraft (3)
         THR 343 — Scene Design (3)
         THR 347 — Lighting Design (3)
         THR 355 — History of Stage Costume (3) ............. 9

MINOR in Theater:

A minor in Theater requires 18 credits in theater courses including the following:

   THR 121 — Fundamentals of Acting ......................... 3
   THR 211 — Theater Appreciation .......................... 3
   THR 241 — Basic Stagecraft ................................. 3
   THR 325 — Theatre Speech (3)
   THR 351 — Makeup for Theatre (3)
   THR 413 — Playscript Analysis (3)

No more than 3 credits in theater practicum may be applied to the minor. The minor program requires the approval of a member of the theater faculty in advance of formally declaring the minor, preferably no later than the first semester of the junior year.

Production Participation Requirement

Majors and minors in theater are expected to participate actively, extensively and continuously in the production activities of the program throughout their enrollment as majors or minors at the university. Typically, this means that a major is expected to work on some aspect of every major production and a minor on approximately half the major productions. Failure to meet the department's expectations with respect to such participation will be considered in approving students for graduation. A student whose failure to fulfill this expectation is, in the view of the theater faculty, jeopardizing his/her future graduation approval and will be notified of this situation, and for this purpose each student's progress in the program will be reviewed annually toward the end of each academic year. Theater majors may take theater practicum for elective credit, but it will not be counted in the credit total for the major.
Veterinary Medicine

Pre-Professional Advising

Veterinary medicine is concerned with two primary health areas. The first is animal health which involves diagnosis, prognosis, therapy and prevention of animal health problems. The second is public health which involves protection of the public from animal borne disease. With methods such as food safety inspection. Veterinarians can also be found in the fields of research and education.

Generally, four-years of graduate level study are required for completion of a professional program in veterinary medicine. Classroom instruction and laboratory work provide the student with a solid foundation during the first three years of study. The final year of professional study is comprised of clinical rotations. Specialization within veterinary medicine is possible after further study at the post-doctoral level.

While a bachelor's degree is not required for admission into veterinary school, most entering students have completed a four-year undergraduate degree. Veterinary schools will consider applications from students from all disciplines provided specific course requirements have been met. Since these course requirements may vary somewhat with each school, it is recommended that students check the requirements of the school they are interested in. In general, pre-veterinary students should include the following courses in their studies at UAF: introductory chemistry (CHEM 105X, 106X), organic chemistry (CHEM 231, 232, 234), biochemistry (CHEM 451, 452), biology (BIO 105X, 106X, 342, 362, 418), mathematics (STAT 200), and physics (PHYS 103X, 104X).

Admission to veterinary school is based on the strength of one's undergraduate academic record, plus test scores on either the Veterinary College Admissions Test (VCAT) or the Graduate Record Exam (GRE). In addition, veterinary medicine exposure and experience is highly recommended. Advisement for students considering veterinary medicine as a career choice is available through the Academic Advising Center.

Welding

College of Rural Alaska
Tanana Valley Campus

(907) 474-5264

Special training programs

Welding is an important industrial skill with applications in agriculture, mining, transportation, aviation, oil and gas, and construction. Training ranges from welding basics to advanced pipe and metal plate fabrication. Classes are kept small in order to offer hands-on training and maximum student-instructor interaction. Advanced students may work toward A.W.S. certification or pursue advanced projects. A student may request credit by examination for any WMT class. See the department for details.

Wildlife Biology

College of Natural Sciences
Department of Biology and Wildlife

(907) 474-7671

Degrees: B.S., M.S., Ph.D.

Minimum Requirements for Degrees: B.S., 130 credits; M.S., 30 additional credits

The undergraduate curricula in the program in wildlife are intended to provide basic education and training. This degree is designed for those students whose objective is to undertake research needed to provide additional information on the workings of wild animal populations, the condition of their habitat, and habitat-animal relationships. It is also designed for those students whose primary interests involve the interpretation, application, or dissemination of research findings, rather than their acquisition. A wildlife degree is appropriate for those 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. Undergraduates have ample opportunity for close association with the Animal Behavior, Wildlife Cooperative Fish and Wildlife Research Unit and several local offices of the federal and state conservation agencies. These agencies and program faculty usually hire a number of students for summer field work. Thus, an unusually good opportunity is available to students to gain experience and to make job connections.

Requirements

Wildlife Biology — B.S. Degree
1. Complete the general university requirements and B.S. degree requirements, completing COMM 141X as part of the core.
2. Complete the following program (major) requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRM 101 - Natural Resources Cons. and Policy</td>
<td>3</td>
</tr>
<tr>
<td>NRM/WLF 431 - Wildlife Policy and Administration or NRM 407 - Environmental Law</td>
<td>3</td>
</tr>
<tr>
<td>STAT 200 - Elementary Probability and Statistics or STAT 300 - Statistics</td>
<td>3</td>
</tr>
<tr>
<td>STAT 401 - Regression and Analysis of Variance or STAT 402 - Scientific Sampling</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 105X-106X - Fundamentals of Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 317 - Comp. Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 239 - Introduction to Plant Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 262 - Principles of Genetics</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 271 - Principles of Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 310 - Animal Physiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 331 - Systematic Botany</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 425 - Mammalogy</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 426 - Ornithology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 471 - Population Ecology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 103X-106X - General Chemistry</td>
<td>8</td>
</tr>
<tr>
<td>ENGL 314 - Technical Writing or ENGL 414 - Research Writing</td>
<td>3</td>
</tr>
<tr>
<td>MATH 272 - Introduction to Calculus for the Life Sciences or MATH 200X - Calculus</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 103X - College Physics</td>
<td>4</td>
</tr>
<tr>
<td>WLF 101 - Survey of Wildlife Sciences</td>
<td>4</td>
</tr>
<tr>
<td>WLF 201 - Wildlife Management Principles</td>
<td>3</td>
</tr>
<tr>
<td>WLF 303 - Wildlife Management Techniques</td>
<td>3</td>
</tr>
<tr>
<td>WLF 410 - Wildlife Populations and Their Management</td>
<td>3</td>
</tr>
<tr>
<td>WLF 460 - Nutrition and Physiol Ecology of Wildlife</td>
<td>3</td>
</tr>
<tr>
<td>Take at least 3 of the following:</td>
<td></td>
</tr>
<tr>
<td>BIOL 303 - Principles of Metabolism and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 406 - Entomology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 407 - Aquatic Entomology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 414 - Environmental Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 427 - Ichthyology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 441 - Waterfowl and Wetlands Ecology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 444 - Reproductive Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 472 - Communities and Ecosystems</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 473 - Limnology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 474 - Plant Ecology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 477 - Ecology of Streams and Rivers</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 480 - Water Pollution Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 482 - Evolution</td>
<td>3</td>
</tr>
<tr>
<td>NRM 338 - Introduction to Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>NRM 312 - Introduction to Range Management</td>
<td>3</td>
</tr>
<tr>
<td>NRM 341 - GIS Analysis</td>
<td>3</td>
</tr>
<tr>
<td>NRM 379 - Introduction to Watershed Management</td>
<td>3</td>
</tr>
<tr>
<td>NRM 380 - Soils and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>NRM 450 - Forest Management</td>
<td>3</td>
</tr>
<tr>
<td>WLF 305 - Wildlife Diseases</td>
<td>3</td>
</tr>
<tr>
<td>WLF 419 - Waterfowl and Wetlands Ecology and Management</td>
<td>4</td>
</tr>
<tr>
<td>Complete sufficient electives to bring total to</td>
<td>130</td>
</tr>
</tbody>
</table>

Bachelor of science 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.

The biology and wildlife program and the Alaska Cooperative Fish and Wildlife Research Unit cooperate in offering graduate work leading to the master of science degree. A doctor of philosophy degree is also offered. Persons desiring detailed information on the graduate program in wildlife biology may obtain this from the head, biology and wildlife program. The procedure to be followed in applying for admission to graduate study is outlined in the section on Graduate Admissions in this catalog.
The Alaska Cooperative Fish and Wildlife Research Unit offers a limited number of research assistantships; information on these and the unit’s program can be obtained from the leader, Alaska Cooperative Fish and Wildlife Research Unit, University of Alaska Fairbanks, Fairbanks, Alaska. Applications for these assistantships should be sent to the unit leader; such applications are supplementary to the application for admission for graduate study.

MINOR in Wildlife Biology:
A minor in Wildlife Biology requires at least 15 credits in Biology and Wildlife, including WLF 303, WLF 410, WLF 460, and six additional credits approved by the department, in Biology or Wildlife and that are not required for a student’s major. Prerequisites for required courses include BIOL 105X-106X, BIOL 271, BIOL 310, STAT 200 or 300, and WLF 201. Depending upon a student’s major, some of these prerequisites may satisfy the six additional credits in Biology and Wildlife required for this minor.

Women’s Studies

Interdisciplinary  (907) 474-6509
Minor Only
The minor in Women’s Studies is an interdisciplinary concentration that focuses on the significance of gender in human lives today, in the past, and in all cultures.

Requirements
MINOR in Women’s Studies

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complete WMS 201 — Introduction to Women’s Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

College of Natural Sciences
Department of Biology and Wildlife  907) 474-7542

Degrees: M.S., Ph.D.

Minimum Requirements for Degrees: M.S. — 30 additional credits

For complete information on the graduate programs in zoology, see the UAF Graduate Catalog.

Students practice rock climbing on the climbing wall in UAF’s new Student Recreation Center, which opened in 1994.
Course Descriptions

In this section of the University of Alaska Fairbanks catalog, full course information for all undergraduate level courses is included. Titles, credits and frequency of offering only are indicated for graduate level courses. (See the UAF Graduate Catalog for complete graduate course information and material and/or laboratory fees information.)

Unless otherwise indicated, course frequency refers to the offering of courses at the Fairbanks campus of the University of Alaska Fairbanks. The courses listed in this catalog are not offered at all UAF sites but could be offered if demand warrants and qualified faculty are available.

Courses are regularly offered at Bristol Bay Campus at Dillingham, Chukchi Campus at Kotzebue, Kuskokwim Campus at Bethel and Northwest Campus at Nome. In the Interior Campus, courses are available at Fort Yukon, McGrath, Nenana, Tok and Unalaska. Information about the frequency of offerings of courses at these sites can be obtained from the local UAF representative.

Course Numbers

The first numeral of a course numbered in the hundreds indicates the year in which the course is normally offered in its own department. For example, ENGL 111 is given for first-year students and ENGL 318 is given for third-year students. Freshman and sophomore students are cautioned to register for upper division (300 and 400) level courses only if they have had adequate preparation and background to undertake advanced study in the field in which those courses are offered.

000-049 - Non-credit courses 050-099 - Developmental courses
Developmental courses are preparatory courses which do not apply to associate, baccalaureate or graduate degrees.
100-299 - Lower-division courses
300-499 - Upper-division courses
Freshman and sophomore students may be required to obtain special permission to take 300 and 400 level courses unless such courses are required in the first two years of their curriculum as printed in this catalog.
500-599 - Post-baccalaureate professional courses
500-level courses are intended as post-baccalaureate experiences for professionals who desire to continue their education at a level distinct from graduate level education. 500-level special topics and independent study courses (593, 595, 597) shall not apply toward any degree, certification or credential program. 500-level courses are not interchangeable with 600-level courses for graduate degree programs.
600-699 - Graduate courses
A few well qualified undergraduates may be admitted to graduate courses with the permission of the head of the department in which the course is offered. Admission to graduate courses cross-listed with undergraduate courses requires graduate standing or permission of the instructor.

Special or Reserved Numbers - Courses identified with numbers ending in -92 are seminars; ending in -93 are special topics courses; -94, approved trial courses; -95, special topics summer session courses, offered only during the summer; -97 indicates individual study; -98 individual research; and -99, thesis. Courses identified with these special or reserved numbers may be available at all levels (i.e., 193, 293, 393, etc.) at the discretion of any department, although offerings above the level of approved programs must be approved in advance by the provost (vice chancellor for academic affairs and research) (e.g., 600-level offerings in areas without approved graduate programs). These courses may be repeated for credit.

Courses with a suffix of "X" (ENGL 111X, MATH 103X, meet specific baccalaureate core requirements. Courses with suffixes of "W" or "O" meet upper-division writing intensive or oral communication intensive course requirements for the baccalaureate core.

Course Credits

One credit represents satisfactory completion of 800 minutes of lecture or 1600 or 2400 minutes of laboratory, whichever is appropriate. Credit hours may not be divided, except one-half credit hours may be granted at the appropriate rate. For short courses and classes of less than one semester in duration, course hours may not be compressed into fewer than three days per credit.

Following the title of each course, the figures in parentheses indicate the number of lecture and laboratory hours the class meets each week for one semester. The first, lecture hours; the second, laboratory. For example (2+3) indicates that a class has two hours of lecture and three of laboratory work each week. The number of credits listed is for each semester. Thus "1 credits" means one credit may be earned.

Credit may not be given more than once for the completion of a course unless the course has been designated as repeatable for credit.

Course Classification Identification

The Baccalaureate Core

Courses that may be used to satisfy general baccalaureate core requirements have course numbers ending with "X." For example, English 111X, Communication 141X and other such courses meet specific core requirements. See the requirements the baccalaureate core for a listing of other specific courses.

Courses meeting the upper division writing intensive and oral communication intensive requirements for the baccalaureate core are identified in the course description section of the catalog with the following designators:
O - Oral Communication Intensive Course
W - Writing Intensive Course
Two courses designated "O/W" are required to complete the oral communication intensive requirement.

Specific Degree Requirements

Courses that may be used to satisfy specific degree requirements (e.g., humanities elective for the B.A. degree, or natural science elective for the B.S. degree) are identified in the course description section of this catalog by the following designators:
h - humanities s - social science
m - mathematics n - natural science

For example, you may use ANTH 309, Arctic Prehistory (3+4) sk to satisfy the "natural science elective" requirement for the Bachelor of Arts degree. Some courses, including all special topics and individual study courses, are not given course classifications.

Notes

Course designated as meeting "W" or "O" requirements for the baccalaureate core may not meet written or oral communication requirements for degree requirements in effect prior to the fall of 1991.

Courses which are offered only every other year are indicated by the specific year in which they are next scheduled. Courses with no year scheduled are offered every year, except as noted.

Not all courses are offered at every location of the University of Alaska Fairbanks. Check the local class schedule for course offerings at other sites.
Accounting

Admittance to 300 and 400 level School of Management courses will be granted only to students with upper division standing. Others will be admitted only with the written permission of the appropriate department head. Students enrolling in School of Management courses are expected to have completed the necessary prerequisites for each course.

A $25 per semester student computing facility user fee will be assessed for any student taking one or more School of Management courses (ACCT, AIS, BA and ECON except ECON 100X). This fee is in addition to any lab/material fees. Note: This fee does not apply to Tanana Valley Campus courses.

ACCT 101 3 Credits Fall, Spring
Elementary Accounting (3+0)
Accounting concepts and procedures for service businesses and for merchandising businesses owned by a single proprietor. Also available via Independent Learning. (Prerequisite: Placement, concurrent enrollment, or completion of Math at the 100 level or above.)

ACCT 102 3 Credits Fall, Spring
Elementary Accounting (3+0)
Accounting concepts and procedures for businesses organized as partnerships or corporations and performing manufacturing operations. Also available via Independent Learning. (Prerequisite: ACCT 101.)

ACCT 303 3 Credits
Governmental and Nonprofit Accounting (3+0)
Accounting for governmental units, public schools, colleges and universities, health care providers, voluntary health and welfare organizations, and other nonprofit organizations. (Prerequisite: ACCT 101, upper division standing.)

ACCT 310 3 Credits Spring
Income Tax (3+0)
Federal and state income taxes primarily for Alaska residents. Introduction to corporate income taxation. Tax reporting, planning, and research. (Prerequisite: ACCT 102 or permission of instructor, upper division standing.)

ACCT 342 3 Credits Fall
Managerial Cost Accounting (3+0)
Cost accounting with managerial emphasis on cost-volume-profit analysis, job order and process costing, service costs, by-products, inventory costing alternatives, systems design, responsibility accounting, profit planning, standard costs, and flexible budgeting. For accounting majors. (Prerequisite: ACCT 102, upper division standing.)

ACCT 352 3 Credits Spring
Management Accounting (3+0)
Business policy, policy planning, resource planning, control concepts, reporting for management control, and impact of public reporting on management decisions. (Prerequisites: ACCT 101, ACCT 102, upper division standing.)

ACCT 361 3 Credits Fall
Intermediate Accounting (3+0)
Financial accounting topics are discussed from the perspective of both accounting practice and theory. Working capital and fixed asset accounts are emphasized in the Fall semester. Long-term liabilities and stockholders equity are emphasized in the Spring semester. Ethical and international accounting issues are emphasized throughout the sequence. (Prerequisite: ACCT 102, upper division standing.)

ACCT 401 3 Credits Spring
Advanced Accounting (3+0)
A study of accounting for business combinations; parent-subsidiary relationships, home office/branch relationships, partnerships, and multinational enterprises. (Prerequisite: ACCT 362, upper division standing.)

ACCT 403 3 Credits Fall
Advanced Taxes (3+0)
Federal income tax for all entities. Gift, estate, and payroll taxes. Tax research, planning, and reporting for domestic and foreign taxpayers. (Prerequisite: ACCT 310, upper division standing.)

ACCT 404 3 Credits Spring
Advanced Cost Accounting and Controllership (3+0)
Study of the controllership function with emphasis on advanced cost and managerial accounting topics related to contemporary organizations. Global practices in managerial accounting considered. (Prerequisites: AIS 316, ACCT 342, 362, BA 325, 360, upper division standing.)

ACCT 452W 3 Credits Fall
Auditing (3+0)
Introduction to the professional standards and procedures applicable to an auditor's examination of financial statements. Compliance and Operational auditing, ethical and legal responsibilities, and international auditing issues emphasized. (Prerequisite: ACCT 362, AIS 316, upper division standing.)

ACCT 471 3 Credits As Demand Warrants
Tax Planning and Research (3+0)
Tax planning and research for business organizations. Tax planning for estates, trusts, and individuals. For tax practitioners and students without work experience in taxation. (Prerequisites: ACCT 310 and 403 or permission of instructor, upper division standing.)

ACCT 472 3 Credits Spring
Computer Control and Advanced Auditing (3+0)
Advanced auditing theory and practice. Audit techniques and internal control of computer systems. For auditor practitioners and students without field experience in auditing. (Prerequisites: AIS 316, ACCT 452. Course assumes prior exposure to auditing and information systems, upper division standing.)

ACCT 602 3 Credits Fall
Accounting for Managers (3+0)

ACCT 620 3 Credits Fall
Accounting Theory and Practice (3+0)

ACCT 650 3 Credits Spring
Management Accounting Seminar (3+0)

ACCT 670 3 Credits Spring
Public Accounting Seminar (3+0)

Accounting and Information Systems

Admittance to 300 and 400 level School of Management courses will be granted only to students with upper division standing. Others will be admitted only with the written permission of the appropriate department head. Students enrolling in School of Management courses are expected to have completed the necessary prerequisites for each course.

A $25 per semester student computing facility user fee will be assessed for any student taking one or more School of Management courses (ACCT, AIS, BA and ECON except ECON 100X). This fee is in addition to any lab/material fees. Note: This fee does not apply to Tanana Valley Campus courses.

AIS 101 3 Credits Fall, Spring
Effective Personal Computer Use (3+0)
Introduction to popular PC computer software used in small businesses. Develops proficiency with popular software including word processing, spreadsheets, graphics/presentation, Internet, communications, database and checkbook/personal financial management. (Prerequisite: Placement, concurrent enrollment, or completion of Math at the 100 level or above.)

AIS 310 3 Credits Fall, Spring
Introduction to Management Information Systems (3+0)
The role of information technology in organizations and its impact on management and strategic issues. (Prerequisite: AIS 101, upper division standing.)

AIS 312W 3 Credits Spring
Information Systems Technology (3+0)
Introduction to the hardware and systems software underlying information systems; provides background to understand computer marketing literature and to select among technology alternatives. (Prerequisite: Upper division standing)

AIS 316 3 Credits Fall
Accounting Information Systems (3+0)
Accounting systems for business entities in various industries. Internal control for the business, data processing and its relationship to accounting systems. (Prerequisites: ACCT 102, upper division standing.)

AIS 410 3 Credits Fall
Systems Analysis and Program Design (3+0)
The system development life cycle for database-oriented information systems in both mainframe and microcomputer environments. Includes programming in one or more fourth generation languages and a term project. (Prerequisites: AIS 310, 312, 316, upper division standing.)

AIS 412W 3 Credits Spring
Planning, Administration and Control Information Systems (0+6)
Overview of what a manager needs to know to administer an information systems department, including extensive discussions of current trends in management of IS and the IS industry. Materials fee: $10.00 (Prerequisite: AIS 410, upper division standing.)
Airframe and Powerplant

**AFPM 111 3 Credits As Demand Warrants**  
General Airframe and Powerplant (3+0)  
Shop practices, basic math, applied physics, F.A.A. regulations, basic electricity, aircraft weight and balance, ground operations and servicing, cleaning and corrosion control, and materials and process. Preparation for the FAA Mechanics Airframe Structures Written, Oral and Practical Exam. Materials fee: $20.00. (Prerequisite: Admissions to A & P Program or permission of instructor.)

**AFPM 145 1 Credit As Demand Warrants**  
Basic Mathematics (1+0)  
Review of applied and technical mathematics related to the construction of aircraft and their engines. Common and decimal fractions and mixed numbers; extracting square roots and raising numbers to a given power; solving ratios, proportions and percentage problems; fundamental algebraic operations. Materials fee: $10.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 146 2 Credits As Demand Warrants**  
Basic Electricity (2+0)  
Electrical theory and concepts for the aviation mechanic. Ohm's law, electrical circuits, diagrams, and batteries, a variety of electrical components. Materials fee: $25.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 147 0.5 Credits As Demand Warrants**  
Physics for Mechanics (.5+0)  
Applications of mechanics; levers, sound, fluid and heat dynamics. Basic aircraft structures and aerodynamics. (Course does not fulfill Natural Science requirements for any degree.) Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 148 1 Credit As Demand Warrants**  
Aircraft Drawing (1+0)  
Basic drafting. Drawings, symbols and schematic diagrams, sketches of repairs and alterations, blueprint information, graphs and charts. Materials fee: $10.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 149 0.5 Credits As Demand Warrants**  
Fluid Lines and Fittings (.5+0)  
Rigid and flexible fluid lines and fittings, fabrication and installation. (Prerequisite: Admission to A & P Program or permission of instructor.) Materials fee: $5.00.

**AFPM 150 2 Credits As Demand Warrants**  
Materials and Processes (2+0)  
Basic shop practices, including selection, identification and installation of aircraft hardware and materials, precision measuring tools and operations, basic heat treating processes, forms of nondestructive inspections. Materials fee: $75.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 151 1 Credit As Demand Warrants**  
Cleaning and Corrosion Control (1+0)  
Basic aircraft cleaning materials, methods, and corrosion control. Materials fee: $15.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 152 1 Credit As Demand Warrants**  
Federal Aviation Regulations (1+0)  
Federal Aviation Regulations for maintenance of aircraft. Maintenance forms and records, publications, privileges and limitations of aircraft mechanics. Materials fee: $10.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 153 1 Credit As Demand Warrants**  
Weight and Balance (1+0)  
Weighing procedures, weight, arms, moments, center of gravity computations, and placarding. Aircraft loading, required forms, weighing. Materials fee: $10.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 154 0.5 Credits As Demand Warrants**  
Ground Operations and Servicing (.5+0)  
Starting, moving, servicing, securing, and fueling aircraft. Materials fee: $55.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 205 3 Credits As Demand Warrants**  
Airframe Structures (FAA Test Preparation) (3+0)  
Aircraft wood, dope, fabric finishes, welding, sheet metal, assembly and rigging and inspection. Preparation for the FAA Mechanics Airframe Structures Written, Oral and Practical Exam. Materials fee: $20.00. (Prerequisite: Experience requirements of FAR 65.77 or permission of the instructor.)

**AFPM 206 2 Credits As Demand Warrants**  
Airframe System & Components (FAA Test Preparation) (2+0)  
Aircraft electrical, hydraulic and pneumatic systems. Landing gear, instruments, fuel, communication and navigation, cabin atmosphere control, and fire protection systems. Inspection, checking, troubleshooting, repair and servicing. Preparation for the FAA Mechanics Airframe Structures Written, Oral and Practical Exam. Materials fee: $20.00. (Prerequisite: Experience requirements of FAR 65.77 or permission of the instructor.)

**AFPM 215 2 Credits As Demand Warrants**  
MOS Powerplant Theory/Maintenance (FAA Test Preparation) (2+0)  
Jet engine fundamentals, analysis, testing. Inspecting turbo jets, turbo shaft, and turbo fan engines. Overhaul, inspection, and fundamentals of reciprocating engines. Preparation for the FAA Mechanics Airframe Structures Written, Oral and Practical Exam. Materials fee: $20.00. (Prerequisite: Experience requirements of FAR 65.77 or permission of the instructor.)

**AFPM 216 3 Credits As Demand Warrants**  
MOS Powerplant System/Components (3+0)  
Fuel metering, induction systems, propellers, control systems, and powerplant electricity. Repair, inspection, service and troubleshooting. Preparation for the FAA Mechanics Airframe Structures Written, Oral and Practical Exam. Materials fee: $20.00. (Prerequisite: Experience requirements of FAR 65.77 or permission of the instructor.)

**AFPM 230 2.5 Credits As Demand Warrants**  
Aircraft Electrical Systems (2.5+0)  
Wiring, control, indication, and protection devices for AC and DC systems. Inspection, troubleshooting service and repair of these systems. Materials fee: $45.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 231 1.5 Credits As Demand Warrants**  
Powerplant Electrical Systems (1.5+0)  
Installation, inspection, testing, servicing engine electrical system wiring, controls, indicator and protective devices. Repair and service of electrical generating systems. Materials fee: $30.00.

**AFPM 235 4.5 Credits As Demand Warrants**  
Aircraft Reciprocating Engines (4.5+0)  
History and development of the aircraft reciprocating engine. Repair, overhaul, and inspection of various types of engines. Operation and troubleshooting of engines. Materials fee: $190.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 240 2 Credits As Demand Warrants**  
Turbine Engines (2+0)  
Development, theory and operation. Engine design, performance, accessories and subsystems. Engine maintenance and overhaul. Materials fee: $20.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 244 1.5 Credits As Demand Warrants**  
Fueling System (1.5+0)  
Identification and selection of lubricants for aircraft powerplants. Inspection, service, troubleshooting and repair of the lubrication systems and components. Materials fee: $20.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

**AFPM 245 2 Credits As Demand Warrant**  
Ignition Systems (2+0)  
Overhaul, inspection and troubleshooting of reciprocating and gas turbine ignition systems. Repair and bench testing of components. Materials fee: $45.00. (Prerequisite: Admission to A & P Program or permission of instructor.)
AFPM 246 2 Credits As Demand Warrants
Fuel Metering Systems (2+0)
Fundamental operation of fuel metering systems in aircraft powerplants. Technical data to repair and overhaul carburetors and components. Inspecting, troubleshooting and adjusting turbine engine fuel metering systems and electronic fuel controls. Materials fee: $30.00. (Prerequisite: Admission to the A & P Program or permission of the instructor.)

AFPM 248 0.5 Credits As Demand Warrants
Induction Systems (5+4)
Operation and service of aircraft induction, preheat, anti-ice and super charger systems. Materials fee: $5.00.

AFPM 249 0.5 Credits As Demand Warrants
Powerplant Cooling Systems (5+4)
Inspection, service and repair of engine cooling systems - both air and liquid cooled installations. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 250 0.5 Credits As Demand Warrants
Powerplant Exhaust Systems (5+4)
Inspection, service and repair of engine exhaust systems. Includes operations of turbo compounded engines, thrust reversers, and noise suppressors. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 251 1.5 Credits As Demand Warrants
Fuel Systems (1.5+4)
Inspection, servicing, troubleshooting and repair of aircraft and engine fuel systems and components. Materials fee: $15.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 252 2 Credits As Demand Warrants
Propellers (2+4)
Identification and nomenclature of aircraft propellers. Operation, control and repair of both reciprocating and turbine engine installations. Materials fee: $30.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 253 1 Credit As Demand Warrants
Transport Category Aircraft (1+0)
Introduction to transport category aircraft systems and components. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 254 0.5 Credits As Demand Warrants
Ice and Rain Control Systems (5+4)
Inspection, operation and troubleshooting of de-ice and anti-ice systems. Materials fee: $5.00.

AFPM 255 0.5 Credits As Demand Warrants
Fire Protection Systems (5+4)
Inspection, servicing, troubleshooting and repair of aircraft and engine fire detection and extinguishing systems. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 256 0.5 Credits As Demand Warrants
Communications & Navigation Systems (5+4)
Operation of aircraft avionics, autopilots and antennas, including inspection and installation. Materials fee: $10.00.

AFPM 257 0.5 Credits As Demand Warrants
Instrument Systems (5+4)
Inspection, troubleshooting, removal and replacement of aircraft and engine instruments and indicating systems. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 258 1 Credit As Demand Warrants
Cabin Atmosphere Control Systems (1+0)
Aircraft pressurization, air conditioning, heating and oxygen systems. Operation, inspection, troubleshooting, service and repair. Materials fee: $10.00.

AFPM 259 1.5 Credits As Demand Warrants
Hydraulic and Pneumatic Systems (1.5+0)

AFPM 260 1.5 Credits As Demand Warrants
Aircraft Landing Gear Systems (1.5+0)
Simple and complex systems. Operation, service and repair of mechanical and hydraulic retraction mechanisms. Wheel, tire and brake service. Aircraft speed and configuration warning systems, electric brake controls, anti-skid systems, landing gear position and warning systems. Materials fee: $25.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 261 1 Credit As Demand Warrants
Non Metallic Structures (1+0)
Inspection, service and repair of wood structures. Preliminary and secondary repair of interior and service of plastic, honeycomb, bonded, and composite and laminated structures. Materials fee: $10.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 262 1 Credit As Demand Warrants
Aircraft Coverings (1+0)
Selection, application, inspection and testing of fabric and fiberglass coverings and methods of repair. Materials fee: $40.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 263 0.5 Credits As Demand Warrants
Aircraft Finishes (5+4)
Identification and selection of aircraft finishing materials. Application of paints, dopes, primers, and trim. Materials fee: $40.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 264 3 Credits As Demand Warrants
Sheet Metal Structures (3+0)
Aircraft sheet metal fabrication, inspection and repair including rivets and fasteners. Materials fee: $130.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 265 1.5 Credits As Demand Warrants
Aircraft Welding

AFPM 266 1.5 Credits As Demand Warrants
Assembly and Rigging
Aerodynamic theory and function of aircraft control surfaces. Fabrication and installation of control devices for fixed and rotary wing aircraft; jacking and control surface balance. Materials fee: $35.00. (Prerequisite: Admission to A & P Program or instructor permission.)

AFPM 267 0.5 Credits As Demand Warrants
Airframe Inspections
Inspection and return of aircraft to service. Procedural and legal aspects of 100 hour, annual and periodic inspections. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 270 0.5 Credits As Demand Warrants
Airframe Testing
Preparation for the Federal Aviation Administration written, oral and practical exams for the Powerplant Mechanics license. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 271 0.5 Credits As Demand Warrants
Powerplant Inspections
Methodology and recordkeeping for inspection of aircraft reciprocating and gas turbine engines. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or permission of instructor.)

AFPM 272 0.5 Credits As Demand Warrants
Powerplant Testing
Preparation for the Federal Aviation Administration written, oral and practical exams for the Powerplant Mechanics license. Materials fee: $5.00. (Prerequisite: Admission to A & P Program or instructor permission.)

AFPM 325 2 Credits As Demand Warrants
Inspection Authorization Preparation (1+2)
Technical background training for the working airframe and powerplant mechanic in selecting, reviewing, and utilizing the appropriate Federal Regulatory and Advisory information as well as the Manufacturer's Maintenance information to inspect and return to service aircraft, engines, propellers, appliances and related parts in accordance with FAR Part 65.95. Final exam is the FAA Inspection Authorization exam administered by an FAA Airworthiness Inspector. (Prerequisite: FAA A & P Certificate, meet additional requirements of FAR 65.91.)

Alaska Native Languages

ANI 108 1-3 Credits As Demand Warrants
Beginning Athabaskan Literacy (3+0) h
Introduction to reading and writing in one of the Athabaskan languages for native speakers. Materials fee: $7.00.
Implications

Language.

Methodological approaches and practice in teaching Native language and Alaska Native Politics

Position of the Native:

Materials fee: $10.00. (Prerequisite: ANL 141 for ANL 142 in the same language or permission of the instructor.)

ANL 150 1 Credit As Demand Warrants

Interpretive Communication (1+0) s

Communication processes in Yup'ik and English speaking cultures. Solutions to identify problem areas in cross-cultural communication. Situations such as conversations, meetings, translating and interpreting. Interpreting in what is communicated between people of different socio-cultural backgrounds. Kuskokwim Campus only.

ANL 151 3 Credits As Demand Warrants

Intertribal Communications (3+0) s

Understanding differences in cross-cultural interaction. Application of cross-cultural interactions to various communication settings. Concentrates on Yup'ik communication. Kuskokwim Campus only.

ANL 208 1-3 Credits As Demand Warrants

Advanced Athabaskan Literacy (3+0) h

Expository and creative writing for native speakers; reading Athabaskan literature; elicitation, transcription, and editing of cultural materials from elders. Materials fee: $7.00.

ANL 215 3 Credits Fall

Alaska Native Languages: Eskimo-Aleut (3+0) h

A survey of the Native languages of Alaska, particularly Eskimo-Aleut: history, present and future, with examples of language structure, present situation and prospects as a cultural force. Open to all students. Materials fee: $9.00.

ANL 216 3 Credits Spring

Alaska Native Languages: Indian Languages (3+0) h

A survey of all Native languages of Alaska; particularly the Indian languages: Athabaskan-Eyak-Tlingit, Haida and Tsimshian. History, present, and future: examples of language structure, present situation and prospects as a cultural force. Open to all students.

ANL 241 3 Credits Fall

Intermediate Athabaskan I Koyukon or Kutchin (3+0) h

Continuation of beginning Athabaskan I Koyukon or Kutchin. One of these two languages will be taught. Development of conversational ability, additional grammar and vocabulary. Materials fee for each course: $10.00. (Prerequisites: ANL 141 and 142 in the same language, or permission of instructor.)

ANL 251 3 Credits As Demand Warrants

Introduction to Athabaskan Linguistics (3+0) h

The study of Athabaskan languages through the presentation and discussion of several Athabaskan languages, focusing on writing systems, distinction between languages and dialects, problems in phonological and morphological analysis, the use of dictionaries, and reading and discussion of texts. Introduction to current research, basic terminology, practical methods for recording and analyzing the languages, and bibliographic sources. Languages emphasized depend on composition of the class. Materials fee: $10.00.

ANL 287 3 Credits As Demand Warrants

Teaching Methods for Alaska Native Languages (3+0) h

Methodological approaches and practice in teaching Native language and literacy to both speakers and non-speakers. Materials fee: $7.00. (Prerequisite: Knowledge of a Native language.)

ANL 288 3 Credits As Demand Warrants

Curriculum and Materials Development for Alaska Native Languages (3+0) h

Preparation and evaluation of curriculum and classroom materials for teaching Native languages. Materials fee: $10.00. (Prerequisite: Knowledge of a Native language.)

AKNP 151 3 Credits As Demand Warrants

Alaska Native Claims Settlement Act (3+0) h


AKNP 212 1 Credit As Demand Warrants

Duties and Powers of Local Government (1+0) h

Development, operation and improvement of local government in Alaska. Future of local government in bush Alaska. For citizen, practitioner and advocate.

AKNP 230 3 Credits As Demand Warrants

Federal Indian Law (3+0) h

Principles of Federal Indian Law and the extent to which these principles apply to Alaska Natives. Foundation of principles that formed the bases of the relationship of the United States to the tribes and development of this relationship. Legal perspective and land issues. (Prerequisite: English placement test.)

AKNP 232 3 Credits As Demand Warrants

1991 and Beyond - Implications of ANCSA (3+0) h

Specific provisions of the Alaska Native Claims Settlement Act as related to 1991. Acquisitions, takeovers of corporations, provisions in Sections 7(i), 7(j), 7(h), and 14(c), changes allowed under ANILCA and other amendments to the Act, the effect of ANCSA on the Indian Reorganization Act and the Indian Self-Determination Act, and land stock status in the future. (Prerequisite: English Placement Test.)

AKNP 233 1 Credit As Demand Warrants

Tribal Government Issues (1+0) h


Alaska Native Studies

ANS 101 3 Credits As Demand Warrants

Introduction to Alaska Native Studies (3+0) h

Introductory information on the Alaska Native Community. Overview of significant Native issues. Review of pertinent literature and resources.

ANS 103 1 Credit As Demand Warrants

Beginning Eskimo Dance (1+2) h

Teaching of traditional and contemporary Yupik Eskimo dance through the means of singing, drumming, and motions of the stage. In-depth analysis of each song and its relation to contemporary and traditional cultural lifestyles. (Not offered on the Fairbanks campus.)

ANS 110 1 Credit As Demand Warrants

Parliamentary Procedures (1+0) h

(Same as PS 110) Rules and principles of parliamentary procedure and application to group decision-making processes.

ANS 160 1 Credit Fall

Alaska Native Dance (2+0) h

Traditional Native American dancing, singing, and drumming of songs from Alaska's major indigenous groups taught by guest Native elders and dancers. If sufficient interest, a dance group will be assembled using class members for spring presentation primarily in the Fairbanks area, including the Festival of Native Arts.

ANS 161 3 Credits Fall

Introduction to Tuma Theatre (2+3) h

(Same as THR 161) For Native and non-Native students with no prior acting or theatre experience. Includes both academic and practical components to examine traditional Alaska Native theatre mythology, ritual, ceremony and performance methods. Application of exercises and developmental scenes drawn from the Alaska Native heritage.

ANS 220 3 Credits Fall

Cultural Differences in Institutional Settings (3+0) s

The phenomena of culturally-organized thought processes. Communication patterns resulting from the interaction of peoples from different linguistic/cultural traditions in modern institutional settings. Special attention to Alaskan Native and non-Native communication patterns.

ANS 250 3 Credits Fall, Spring

Current Alaska Native Leadership Perspectives (3+0) s

Prominent leaders in the Native community are brought into direct classroom contact with students to discuss important issues in rural Alaska and the larger Native community.
ANS 251 1-3 Credits Fall, Spring
Practicum in Native Cultural Expression (0+variable)
Provides individual supervised activities in the formal organization, promotion, and expression of Alaskan Native cultural heritage. May be repeated to a maximum of 3 credits. (Prerequisite: Permission of the department head.)

ANS 268 3 Credits Fall, Spring
Beginning Native Art Studio (1+4 h)
(Same as ART 268)
Understanding and applying the traditional designs and technologies of Native art. Materials fee: $25.00. (Prerequisite: ART 105 or permission of instructor.)

ANS 275 3 Credits As Demand Warrants
Yup’ik Practices in Spirituality and Philosophy (3+0 h)
Exploration of the process in Yup’ik natural religion and the underlying philosophy that is the basis for Yup’ik existence in the spiritual realm. Wholeness of Yup’ik existence as it integrates into the western religion and philosophy. Only offered at Kuskokwim campus.

ANS 300W 3 Credits Alternate Spring
Rhetorical Expression of the Alaska Native Experience (3+0 h)
Rhetorical methods of creative expression of the Alaska Native experience. Emphasis on the student’s development of expressive abilities in a variety of Native and Western forms. Publication of student work a possibility. (Prerequisite: ENGL 111 and permission of instructor. Next offered: 1995-96.)

ANS 310 3 Credits Fall
The Alaska Native Lands Settlement (3+0 h)
Native corporation goals and methods as they implement the Alaska Native Claims Settlement Act and establish themselves within the larger political economy. (Prerequisites: ANTH 242 or PS 263 or HIST 110; ECON 101, 137; or permission of instructor.)

ANS 315 3 Credits Alternate Spring
Tribal People and Development (3+0 h)
(Same as RD 315)
Impact of socio-economic development processes on tribal peoples in third and fourth world societies. Implications of these processes for Alaska Native people. (Prerequisite: Junior standing or permission of the instructor. Next offered 1995-96.)

ANS 320W 3 Credits Spring
Language and Culture: Applications of Alaska (3+0 h)
(Linguistics and ANTH 320)
Language, ethnicity, and their interrelationships. Communicating ethnic identity. Patterns of language use which affect communication between ethnic groups. Applicability of these concepts to Native/non-Native communication patterns. Materials fee: $5.00.

ANS 325 3 Credits Alternate Spring
Native Self Government (3+0 h)
(Same as PS 325)
Indigenous political systems, customary law and justice in Alaska emphasizing the organization of Native governance under federal Indian Law and Alaska state-chartered local government. Comparisons between Alaska Native political development and those of tribes in the contiguous 48 states and northern hemisphere tribal people. (Prerequisites: HIST 110, PS 263. Next offered: 1995-96.)

ANS 330 1-3 Credits As Demand Warrants
Yup’ik Parenting and Child Development (1-3+4 h)
Processes, methods, and evaluation of Yup’ik child rearing including how it is affected by other cultures and how these can be integrated into the process. Only offered at Kuskokwim Campus. (Prerequisite: PSY 240 or permission of instructor.)

ANS 340 3 Credits Fall
Contemporary Native American Literature (3+0 h)
(Same as ENGL 340)
Contemporary Native American writing in English, including novels, short stories, poetry, and plays. Examples of Native American film when related to a writing. Works discussed in relation to cultural contexts and interpretations. (Prerequisite: ENGL 111 or permission of instructor.)

ANS 349 3 Credits Fall
Narrative Art of Alaska Native Peoples (In English Translation) (3+0 h)
(Same as ENGL 349)
Traditional and historical tales by Aleut, Eskimo, Athabaskan, Eyak, Tingit, Haida, and Tsimshian storytellers. Bibliography, Alaska Native genres and viewpoints, and structural and thematic features of tales. (Prerequisite: ENGL 111 or permission of instructor.)

ANS 351 1-3 Credits Fall, Spring
Practicum in Native Cultural Expression (0+variable)
Individual supervised activities in advanced organization, promotion, and expression of Alaskan Native cultural heritage projects (Festival of Native Arts leadership, Tuma Theatre, Theta magazine, etc.) Continuation of ANS 251. (Prerequisite: Permission of instructor.)

ANS 360 1 Credit Spring
Advanced Native Dance (0+2 h)
Advanced techniques with emphasis on the cultural meanings of the dance performance. (Prerequisite: ANS 160 or permission of instructor.)

ANS 361 3 Credits Spring
Advanced Alaska Native Performance (2+3 h)
(Same as THR 361)
In-depth study of Alaska Native theatre techniques and tradition, including traditional dance, song and drumming techniques, mask characterizations and performance application and presentation of a workshop production developed by the students during the semester. (Prerequisite: ANS/THR 161.)

ANS 365 3 Credits Fall
Native Art of Alaska (3+0 h)
(Same as ART 365)
Art forms of the Eskimo, Indian and Aleut from prehistory to the present. Changes in forms through the centuries. (Prerequisite: Advanced standing or permission of the instructor.)

ANS 366 3 Credits Alternate Spring
Northwest Coast Indian Art (3+0 h)
(Same as ANTH 366 and ART 366)
Arts of the Northwest Coast Indians and the place of the art in their culture. (Next offered: 1995-96.)

ANS 367 3 Credits Alternate Spring
Eskimo Art (3+0 h)
(Same as ART 367)
Eskimo art from Alaska, Canada and Siberia beginning with the earliest known pieces to the beginning of the 20th century. (Next offered: 1995-96.)

ANS 368 3 Credits Fall, Spring
Intermediate Native Art Studio (1+4 h)
(Same as ART 368)
Understanding and applying advanced traditional designs and technologies of Native art. Materials fee: $25.00. (Prerequisite: ART 268 or permission of instructor.)

ANS 375 3 Credits Alternate Spring
Native American Religion and Philosophy (3+0 h)
Philosophical aspects of Native American world views. Systems of belief and knowledge, explanations of natural phenomena, relations of humans to natural environment through ritual and ceremonial observances. (Recommended: PHIL 201. Next offered: 1995-96.)

ANS 401 3 Credits Fall, Spring
Cultural Knowledge of Native Elders (3+0 h)
Study with prominent Native tradition-bearers in Native philosophies, values, and oral traditions. Traditional knowledge elicited through the cultural heritage documentation process. (Prerequisites: HIST 110, ANTH 242 and upper division standing.)

ANS 420 3 Credits Fall
Alaska Native Education (3+0 h)
(Same as ED 420)
School systems historically serving Native people, current efforts toward local control, and the cross cultural nature of this education. (Prerequisite: ANTH 242 or HIST 110; or permission of instructor.)

ANS 421 3 Credits Spring
Native Ways of Knowing (3+0 h)
(Same as ED 421)
Focus on how culture and world view shape who we are and influence the way we come to know the world around us. Emphasis on Alaska Native knowledge systems and ways of knowing. (Prerequisite: Upper division standing.)

ANS 425 3 Credits Fall
Federal Indian Law and Alaska Natives (3+0 h)
(Same as PS 425)
The "special relationship" between the federal government and Native Americans based on land transactions and recognition of tribal sovereignty. Federal Indian law and policy evolving from this relationship. Legal rights and status of Alaska Natives. (Prerequisites: PS 101 and HIST 110; or permission of instructor; PS 263 is recommended.)

ANS 450 3 Credits Alternate Spring
Comparative Aboriginal Rights and Policies (3+0 h)
(Same as PS 450)
A case-study approach in assessing Aboriginal Rights and Policies in different Nation-State Systems. Seven Aboriginal situations examined for factors promoting or limiting self-determination. (Prerequisite: Upper division standing or instructor's permission. Next offered: 1995-96.)
COURSE DESCRIPTIONS / 111

ANS 468 3 Credits  
Advanced Native Art Studio (1+4) h  
(Fall, Spring)  
Advanced traditional designs and technologies of Native art. Use of contemporary materials to interpret traditional forms. Materials fee: $25.00. (Prerequisite: ART 368 or permission of instructor.)

ANS 475 3 Credits  
Alaska Native Social Change (3+0) s  
(Fall)  
Tradition and change in Native social institutions in contemporary society. Methods of identifying and analyzing significant Native social change processes for public understanding. (Prerequisite: ANTH 242 or permission of the instructor.)

Alaska Studies

ALST 103A 1 Credit  
Creative Response (1+0)  
(Samples of stories of indigenous people of Alaska. Reviews work of Native Alaskan artists. Examines music of Inupiat, Yup'ik and Koyukon cultures (songs and dances).)

ALST 103B 1 Credit  
The People (1+0)  
Survey of social sciences in Alaska and relationships to Alaskan culture.

ALST 103C 1 Credit  
The Land (1+0)  
Geography and branches of earth science related to the land mass of Alaska. Current issues.

ALST 107 1 Credit  
Land Resource Management (1+0)  
Tools for overseeing land use and the political aspects of natural resource management.

American Sign Language

ASLG 101 3 Credits  
American Sign Language I (3+0) h  
(As Demand Warrants)  

ASLG 110 1 Credit  
American Sign Language Practice (1+0) h  
(Skill development in use of American Sign Language. Conducted entirely in sign language with aspects of deaf culture included. All skill levels.)

ASLG 202 3 Credits  
American Sign Language II (3+0) h  
Expressive and receptive conversational skills. Understanding the culture that is an integral part of the language. Continuation of American Sign Language I. Materials fee: $10.00. (Prerequisite: ASLG 101 or permission of instructor.)

ASLG 203 3 Credits  
American Sign Language III (3+0) h  
Grammar, conceptual structure, and lexical items of American Sign Language. Cultural awareness and expressive and receptive signing skills for communicating and understanding American Sign Language in diverse contexts. Continuation of ASLG 101 and 202. Materials fee: $10.00. (Prerequisite: ASLG 202 or permission of instructor.)

ASLG 204 3 Credits  
American Sign Language IV (3+0) h  
(Spontaneous and interactive use of American Sign Language. Grammar, structure, and lexical components. Cultural aspects supporting communication in American Sign Language at an advanced level. A continuation of ASLG 203. (Prerequisite: ASLG 203 or permission of the instructor.)

Anthropology

ANTH 100X 3 Credits  
Individual, Society and Culture (3+0) s  
(As Demand Warrants)  
An examination of the complex social arrangements guiding individual behavior and common human concerns in contrasting cultural contexts. Materials fee: $5.00.

ANTH 101 3 Credits  
Introduction to Anthropology (3+0) s  
(Fall, Spring)  
Human societies and cultures based on the findings of the four subfields of the discipline: archaeological, biological, cultural and linguistic. Also available via Independent Learning. Materials fee: $10.00.

ANTH 103 3 Credits  
Human Evolution and World Prehistory (3+0) n  
(Fall)  
Human evolution and cultural development on a global basis. Methods, concepts and theories which serve as the scientific foundation for anthropology and physical anthropology. Materials fee: $30.00.

ANTH 104 3 Credits  
Social/Cultural Anthropology (3+0) s  
(Alternate Fall)  
Basic concepts and principles underlying anthropological study of society and culture. Emphasis on non-western ethnographic context. Open to majors and non-majors. Materials fee: $5.00. (Next offered: 1995-96.)

ANTH 111 3 Credits  
Cultural/ anthropological issues of the Old and New World as a comparative study. (3+0) s  
(Alternate Spring)  
Major civilizations of the Old and New World from a comparative, anthropological perspective. Antecedents and influences of these civilizations on their neighbors. Economics, science, religion, and social organization of these civilizations. (Next offered: 1995-96.)

ANTH 123 3 Credits  
Origins of Alaska’s Native Peoples (3+0) s  
(Alternate Fall)  
Origins and affinities of native Alaskan peoples from an archaeological perspective. Prehistoric examination of Yup'ik, Inupiat, Aleut, Tlingit, and Athabaskan groups. (Next offered: 1995-96.)

ANTH 210 3 Credits  
New World Prehistory (3+0) s  
(Culture history of native Americans from earliest times (excluding Alaska and Canada) including those in Mexican and Peruvian states. Materials fee: $5.00. (Prerequisite: ANTH 103 or 211 or permission of instructor. Next offered: 1996-97.)

ANTH 211 3 Credits  
Archaeological Fundamentals of the World (2+3) s  
(Alternate Fall)  
Methods and techniques of archaeological field and laboratory research. Materials fee: $10.00. (Prerequisite: ANTH 103. Next offered: 1995-96.)

ANTH 212 3 Credits  
Old World Prehistory (3+0) s  
(Alternate Spring)  
The archaeological record for the development of human culture from the very beginnings of mankind to the rise of civilization. Materials fee: $5.00. (Prerequisites: ANTH 103 or 211 or permission of instructor. Next offered: 1995-96.)

ANTH 220 3 Credits  
The Oral Tradition: Folklore and Oral History (3+0) h  
(Fall)  
Study and collection of folklore and oral history. Importance of oral tradition in human communication and the advantages and disadvantages of recording and studying it. Sociocultural anthropology and anthropological linguistics in relation to oral traditions. Methods of folklorists, historians and academicians. Field project required. Materials fee: $5.00. (Prerequisite: ANTH 104.)

ANTH 242 3 Credits  
Native Cultures of Alaska (3+0) s  
(Spring)  
The traditional Aleut, Eskimo, and Indian (Athabaskan and Tlingit) cultures of Alaska. Eskimo and Indian cultures in Canada. Linguistic and cultural groupings, population changes, subsistence patterns, social organization and religion in terms of local ecology. Precontact interactions between groups. Also available via Independent Learning. Materials fee: $15.00.

ANTH 250 2 Credits  
Archaeological Laboratory Techniques (1+3)  
(Fall, Spring)  
Archaeological laboratory procedures including lithic analysis and lithic tool typology. Examination of collections from several early man sites in Alaska. Research problems pertaining to those collections. Materials fee: $5.00. (Prerequisite: Permission of instructor.)

ANTH 301 3 Credits  
World Ethnography (3+0) s  
(As Demand Warrants)  
Cultural heritage, social systems, modes of economic adaptation and culture change for human populations in major geographic regions of the world. Culture areas covered different semesters are contingent on available faculty expertise. Course may be repeated for credit when content varies. Materials fee: $5.00. (Prerequisites: ANTH 104 and junior standing or permission of instructor.)
ANTH 302  3 Credits  Fall  Anthropology of Siberia (3+0) n  Native cultures of Siberia including the Russian Far East. Information from all subfields of anthropology offered with emphasis on contemporary perspectives. (Prerequisite: ANTH 103 or 104 or permission of instructor.)

ANTH 303  3 Credits  Alternate Spring  Gender in a Cross-Cultural Perspective (3+0) s  (Same as WMS 303)  Gender as both cultural construction and social relationship is examined through readings and experiences portraying gender roles in a broad variety of societies, from hunter-gatherer to industrial. New theoretical and methodological approaches in anthropology for exploring and understanding women's experiences in their cultural variety are presented. Materials fee: $5.00. (Next offered: 1995-96.)

ANTH 306  3 Credits  As Demand Warrants  Economic Anthropology (3+0) s  Relationships between economic and other social relations. Preindustrial societies. Relevance of formal economics to small-scale societies and developing nations. Exchange, formal and substantive economics, market economics, rationality, political economy and the economics of development. Materials fee: $5.00. (Prerequisite: ANTH 104 or permission of instructor.)

ANTH 308  3 Credits  Alternate Spring  Language and Gender (3+0) s  (Same as ANTH 306)  Examination of relationships between language and gender, as both nongraphic and linguistic sources. Topics include power, socialization and sexism. Materials fee: $5.00.

ANTH 309  3 Credits  Alternate Spring  Arctic Prehistory (3+0) s  Archaeological cultures of the northern regions from the first occupation to the present. Adaptations to changing environments in time and space as seen through past technological and economic systems, as well as settlement patterns. Materials fee: $25.00. (Prerequisite: ANTH 103 or permission of instructor. Next offered: 1995-96.)

ANTH 315  3 Credits  Alternate Fall  Human Biology (2+3) n  Biology of recent and modern human populations, including systematics, behavior, ecology and inter- and intrapopulation genetic and morphological variations. Human adaptations to heat, cold, high altitudes, and changing nutritional and disease patterns. Human skeletal biology, including morphometric and nonmetrical variation, aging and sexing skeletal remains, and pathopaleontology. Materials fee: $10.00. (Prerequisite: ANTH 103 or BIOL 103X. Next offered: 1995-96.)

ANTH 320W  3 Credits  Spring  Language and Culture: Applications to Alaska (3+0) s  (Same as ANS 320)  Language, ethnicity, and their interrelationships. Communicating ethnic identity. Patterns of language use which affect communication between ethnic groups. Application of these concepts to Native/non-Native communication patterns. Materials fee: $5.00. (Prerequisites: ANS 120 and ANL 215 or 216 or permission of instructor.)

ANTH 321  3 Credits  As Demand Warrants  Physical Anthropology of the Americas (3+0) n  Anthropology of the peoples of North and South America, including Eskimo, Aleut and Indian populations. Analysis of patterns of biological variation within and between prehistoric and modern human populations. Origins and relationships, microevolutionary processes and trends, and adaptations to climatic, nutritional, disease and demographic stress. Materials fee: $5.00. (Prerequisite: ANTH 315 or permission of instructor.)

ANTH 366  3 Credits  Alternate Spring  Northwest Coast Indian Art (3+0) h  (Same as ANS 366 and ART 366)  Arts of the Northwest Coast Indians and the place of the art in their culture. (Next offered: 1995-96.)

ANTH 380  3 Credits  Alternate Fall  The People of Alaskan Southwest: Aleuts, Kodiak Islanders and the Chugach (3+0) s  Cultural heritage and present conditions of Aleuts, including people of the Aleutian archipelago, Kodiak Islanders, people of the Alaska Peninsula and the Chugach of Prince William Sound. Materials fee: $25.00. (Prerequisite: ANTH 242 or permission of instructor. Next offered: 1995-96.)

ANTH 381  3 Credits  Alternate Spring  The Inupiaq and Yup'ik Peoples (3+0) s  Contemporary conditions and traditional heritage of the Inupiaq and Yup'ik peoples including the impact of Euroamericans on these populations and cultures. Materials fee: $10.00. (Prerequisite: ANTH 242 or permission of instructor. Next offered: 1995-96.)

ANTH 382  3 Credits  Alternate Spring  The People of Alaskan Southeast (3+0) s  Tlingit, Haida and Tsimshian societies in the framework of Northwest Coast culture-area. Impact of Russian penetration and of the historical factors. Materials fee: $15.00. (Prerequisite: ANTH 242 or permission of instructor. Next offered: 1995-96.)

ANTH 383  3 Credits  Alternate Fall  Athabaskan Peoples of Alaska and Adjacent Canada (3+0) s  Contemporary conditions and traditional heritage of the Athabaskan populations of Alaska and Canada. Impact of Euroamericans on these populations and cultures. Materials fee: $20.00. (Prerequisite: ANTH 242 or permission of instructor. Next offered: 1995-96.)

ANTH 402  3 Credits  As Demand Warrants  Anthropology of Art (3+0) s  (Same as ART 402 and ANTH 602)  Anthropological study of art in cross-cultural perspective. Social context of art production and use, cross-cultural variations in definition of an artist's role. (Prerequisites: Senior standing or permission of instructor.)

ANTH 403  3 Credits  As Demand Warrants  Political Anthropology (3+0) s  (Same as ANTH 603)  Political systems and the law. Case studies from non-industrial societies, developing nations, and anthropological systems or encapsulated societies, such as native peoples in the U.S. Political structures and institutions; social conflict, dispute settlement, social control and the law; political competition over critical resources; and ethnicity. Materials fee: $5.00. (Prerequisite: ANTH 104 or permission of instructor.)

ANTH 405  3 Credits  Alternate Spring  Archaeological Method and Theory (2+3) s  (Same as ANTH 407)  Archaeological methods and analysis as the framework for different perspectives in archaeology. Application to specific research problems. Materials fee: $5.00. (Prerequisite: A course in archaeology or permission of the instructor. Next offered: 1996-97.)

ANTH 407  3 Credits  Alternate Spring  Kinship and Social Organization (3+0) s  (Same as ANTH 407)  Forms and function of family and household organization, kinship and marriage in diverse human socio-cultural systems. Case studies from tribal and complex societies including contemporary United States. Materials fee: $10.00. (Prerequisite: ANTH 104 or permission of instructor. Next offered: 1995-96.)

ANTH 409  3 Credits  Alternate Fall  Anthropology of Religion (3+0) s  (Same as ANTH 609)  Religion or supernatural belief from the perspective of anthropology. Religion in the context of 'primitive' society as well as its role in complex society. Religious practitioners, ritual, belief systems, and the relationship of religious behavior to other aspects of social behavior. Materials fee: $5.00. (Prerequisite: Junior standing or permission of instructor.)

ANTH 410  3 Credits  Alternate Fall  History of Social/Cultural Anthropology (3+0) s  Major theoretical approaches in cultural/social anthropology chronologically from formulation of the discipline of anthropology to current theory. Nature of the discipline, its goals and methods, and the relevance of theoretical perspectives to interpretations in anthropology. (Prerequisite: Junior standing or permission of instructor. Next offered: 1995-96.)

ANTH 414  3 Credits  Alternate Spring  Environmental Archaeology (3+0) n  Quaternary environmental reconstruction through the integration of geological, archaeological, botanical, and zoological data. Materials fee: $5.00. (Prerequisite: A course in archaeology or permission of the instructor.)

ANTH 415  3 Credits  Alternate Fall  Zooarchaeology and Taphonomy (2+3)  Identification of bones, how vertebrate bone remains may be used to study archaeological site formation processes, site organization, subsistence practices and animal procurement strategies. Preservation in modern depositional environments, paleoecology, vertebrate mortality profiles and demographic structure, site seasonality, bone breakage, taphonomy and faunal remains and human land use practices. Materials fee: $100.00. (Next offered: 1995-96.)

ANTH 422  3 Credits  As Demand Warrants  Human skeletal analysis: bone biology, skeletal anatomy, aging and sexing, metric and nonmetric traits of skeleton and dentition, paleopathology, and paleodermography. Inferences on genetic relationships between and patterns behavior within prehistoric groups derived from skeletal material. Materials fee: $10.00. (Prerequisite: ANTH 315 or permission of instructor.)
ANTH 423 3 Credits
Paleoanthropology (3+3)
Analysis of the Plio-Pleistocene hominid fossil record, including comparative primate and hominid skeletal and dental anatomy, systematics, taphonomy and long-term biocultural adaptations. Materials fee: $5.00. (Prerequisites: ANTH 103 and 212 or permission of instructor. Next offered: 1995-96.)

ANTH 424 3 Credits
Analytical Techniques (3+3)
Classification, sampling, collection and analysis of anthropological data: parametric and nonparametric significance tests and measures of association, analysis of frequency data, estimating resemblance using multiple variables, computer simulations and analysis. Materials fee: $5.00. (Prerequisite: Any 200 level Anthropology course. Next offered: 1995-96.)

ANTH 428 3 Credits
Ecological Anthropology (3+0) n
Biological, environmental and cultural factors and their interplay in defining the human condition, with examples from Arctic and other populations. Materials fee: $5.00. (Prerequisite: Junior standing or permission of instructor. Next offered: 1996-97.)

ANTH 465 3 Credits
Geoarchaeology (3+0)
(Same as GEOS 465)
Geological context of archaeological sites and the geologic factors that affect their preservation, with emphasis on Alaska. Includes a one or two-day weekend field trip in late April or early May. Materials fee: $5.00. (Prerequisite: GEOS 101, an introductory course in archaeology, or permission of instructor. Next offered: 1995-96.)

ANTH 601 3 Credits
Proseminar in Social/Cultural Anthropology (3+0)

ANTH 602 3 Credits
Anthropology of Art (3+0)
(Same as ANTH 624)

ANTH 603 3 Credits
Political Anthropology (3+0)
(Same as ANTH 603)

ANTH 605 3 Credits
Archaeological Method and Theory (3+0)
(Same as ANTH 405)

ANTH 606 3 Credits
Folklore and Mythology: Anthropological Perspective (3+0)

ANTH 607 3 Credits
Kinship and Social Organization (3+0)
(Same as ANTH 407)

ANTH 608 3 Credits
Classics in Anthropology (3+0)

ANTH 609 3 Credits
Anthropology of Religion (3+0)
(Same as ANTH 409)

ANTH 610 3 Credits
Northern Indigenous Peoples and Contemporary Issues (3+0)
(Same as NORS 610)

ANTH 611 3 Credits
Proseminar in Archaeology (3+0)

ANTH 612 3 Credits
Paleoecology (3+0)

ANTH 613 3 Credits
Seminar: Problems in Arctic Archaeology (3+0)

ANTH 614 3 Credits
Archaeology of Siberia (3+0)

ANTH 616 3 Credits
Classics in Archaeology (3+0)

ANTH 621 3 Credits
Proseminar in Physical Anthropology (3+0)

ANTH 624 3 Credits
Analytical Techniques (3+0)
(Same as ANTH 424)

ANTH 630 3 Credits
Anthropological Field Methods (3+0)

ANTH 631 3 Credits
Proseminar in Language and Culture (3+0)

ANTH 637 3 Credits
Methods in Ethnohistorical Research (3+0)

ANTH 640 3 Credits
Problems in Anthropology (3+0)

ANTH 650 3 Credits
Anthropolical Perspectives on Russian America (3+0)

ANTH 651 3 Credits
Quaternary Seminar (3+0)
(Same as GEOS 651)

Applied Art

APAR 100 1 Credit
Basic Video Workshop (1+1)
Basic video equipment operation and elementary equipment maintenance. Camera techniques, portable video recorders, lighting, audio, and simple video production.

APAR 103 1 Credit
Editing Videotape (1+1)
Principles and operations in electronic editing of videotape. Persons completing this course may use Media Center videotape editing facilities.

APAR 105 1 Credit
Community TV Production (1+1)
Video production for the Nome Public Access Cable Television (NPACT) channel in a ten-week "hands-on" training lab using a variety of video equipment. Each student will produce at least one 30-minute production. Offered at Northwest Campus.

APAR 107 1 Credit
Beading (1+1)
Application of beads to various materials, three kinds of stitches, and use of a bead loom.

APAR 140 1 Credit
Clothing Construction (1+0)
Techniques of clothing construction for the home sewer. Development of sewing skills necessary to create garments for the beginner as well as the more experienced seamstress.

APAR 150 1-3 Credits
Introduction to Traditional Crafts
Introduction to traditional crafts such as basket weaving, birch bark basket making, beading, carving, canoe or kayak making, etc. Topics vary based on community need and interest and will be identified each semester. Course may be repeated for credit with each new topic. (Next offered: Fall 1994.)

APAR 250 1-3 Credits
Intermediate Traditional Crafts
Continued development of traditional crafts such as basket weaving, birch bark basket making, beading, carving, canoe or kayak making, etc. Topics vary based on community need and interest and will be identified each semester. Course may be repeated for credit with each new topic. (Prerequisite: Completion of APAR 150 or permission of instructor. Next offered: Fall 1994.)

APAR 157 1-2 Credits
Skin Sewing (1+2)
Fundamentals of skin sewing. Projects (e.g. slippers, mukluks, mittens, fur hats, vests and ruffs) depend upon student ability and experience. Materials fee: $35.00.

Applied Business

A $25 per semester student computing facility user fee will be assessed for any ABUS, CAPS or OMIT course of 2 credits or more at the 100-level or higher. This fee is in addition to any lab/material fees.

ABUS 051 3 Credits
Bookkeeping For Business (3+0)
Basic concepts and procedures of practical bookkeeping. Recording and reporting financial data for service and merchandising businesses. Covers businesses owned by one individual only (sole proprietorships).
ABUS 070 1 Credit  
Job Readiness Skills (1+0)  
Pre-employment and human relation skills necessary for job success, including how to identify career choices and employment opportunities; how to prepare a resume, job applications, cover and follow-up letters; and how to develop human relation skills. The student will select, prepare and be interviewed for jobs which match his/her skills identified through a self-assessment inventory. Offered at Northwest Campus.

ABUS 120 1-3 Credits  
As Demand Warrants  
Basics of Investing (1-3+0)  
Personal financial planning, goal setting, and investing. Stocks, bonds, trusts, securities, options, real estate and other investment vehicles. Inflation, taxes, interest rates, retirement, and selecting financial planners. Also available via Independent Learning.

ABUS 130 3 Credits  
As Demand Warrants  
Real Estate (3+0)  

ABUS 135 3 Credits  
As Demand Warrants  
Recordkeeping for Business (3+0)  
Skills in keeping business records and banking procedures as a cashier, sales clerk, purchasing agent or payroll clerk.

ABUS 141 2 Credits  
As Demand Warrants  
Payroll Accounting (2+0)  
Payroll records and laws. Methods to compile and calculate payroll information, earnings, deductions, net wages. City, state and federal tax report forms. For payroll personnel.

ABUS 142 2 Credits  
As Demand Warrants  
Office Accounting I (2+0)  
Basic accounting procedures in retail, service, and trade businesses. The complete accounting cycle including recordkeeping, posting and preparation of financial statements, bank reconciliation, payroll computations and closing books. Accounts receivable, accounts payable, purchasing, credit and other accounting requirements.

ABUS 143 2 Credits  
As Demand Warrants  
Office Accounting II (2+0)  
Financial activities of partnerships and corporations with emphasis on accrual basis of accounting. Notes payable, notes receivable, interest transactions, bad debts, partnership equity accounting, corporate stock transactions, corporate earnings, capital transactions, bonds, long term liabilities and investments.

ABUS 150 1 Credit  
Fall, Spring  
Time Management (1+0)  
Proven techniques and tools for gaining control over events that shape our lives. Topics include: desk control, handling interruptions, meetings and other time robbers including procrastination. Franklin Day Planner System must be purchased from UAF bookstore prior to first class meeting.

ABUS 151 1-3 Credits  
As Demand Warrants  
Village Based Entrepreneurship (1-3+0)  
Technical and personal requirements for establishing and maintaining a small business in a rural village; advantages and disadvantages of operating a small business in a rural village. May be offered in three, one credit modules (a, b and c).

ABUS 154 3 Credits  
As Demand Warrants  
Human Relations (3+0)  
Attitudes, self-concepts, personal communication styles, motivation, interactions, positive reinforcements, team building and leadership development.

ABUS 155 2 Credits  
As Demand Warrants  
Business Math (2+0)  
Review of basic math computation skills applied to various business areas. Emphasis on applications.

ABUS 158 1-3 Credits  
Spring  
Introduction to Tourism (1-3+0)  
Forces which influence international and domestic hospitality, leisure, travel and recreation industries. Socio-economic models and measure of regional impact, demand and supply.

ABUS 160 3 Credits  
As Demand Warrants  
Principles of Banking (3+0)  
Banking in today's economy. Language and documents of banking, check processing, teller functions, deposits, credit and payment functions, loans, investments, trust, the Federal Reserve System and other regulatory agencies.

ABUS 179 3 Credits  
As Demand Warrants  
Fundamentals of Supervision (3+0)  
Effective supervisory concepts including planning, organizing, and staffing functions. Communicating and delegating effectively, morale, productivity, decision making, position discipline and performance goals development.

ABUS 188 1 Credit  
As Demand Warrants  
Personal Income Tax (1+0)  
Taxable income, deductions, credit, exemptions, and computation. Computer use, recordkeeping methods, tax forms and new tax laws.

ABUS 211 2 Credits  
As Demand Warrants  
Tax for Business Entities (2+0)  
Business tax reports. Tax planning and strategies to reduce the tax bill, payroll tax reports and depositary requirements, methods of compensation, acquiring and disposing of business assets, and planning for corporate reorganization or liquidation. New tax laws.

ABUS 223 3 Credits  
As Demand Warrants  
Real Estate Law (3+0)  
Deeds and conveyances, mortgages, liens, rentals, appraisals, and other transactions in real estate and law. Also available via Independent Learning.

ABUS 230 3 Credits  
As Demand Warrants  
Applied Intermediate Accounting (3+0)  
Review of accounting principles with emphasis on working capital, plant assets, intangible assets and financial statement presentation. Current accounting pronouncements.

ABUS 231 1-3 Credits  
As Demand Warrants  
Introduction to Personnel (1-3+0)  
Company organizational structure, job analysis, staffing and organization, employee growth and development, employee supervision and developing leadership skills. May be offered in three one credit modules.

ABUS 232 3 Credits  
As Demand Warrants  
Contemporary Management Issues (3+0)  
Management functions including planning, organizing, staffing, directing and controlling, human aspects of management, and decision making. (Prerequisite: BA 151 or instructor permission.)

ABUS 233 3 Credits  
As Demand Warrants  
Financial Management (3+0)  
Corporate financial planning and control, asset management, capital budgeting, financial markets and instruments. (Prerequisite: BA 151, ACCT 101.)

ABUS 241 3 Credits  
As Demand Warrants  
Applied Business Law I (3+0)  
Legal aspects of business problems. Principles, institutions and administration of law in contracts, agency, employment, personal sales and property ownership. Also available via Independent Learning. (Prerequisite: BA 151.)

ABUS 243 3 Credits  
As Demand Warrants  
Applied Cost Accounting (3+0)  
Principles and applications for manufacturing and non-manufacturing firms. Job order and process costing with analysis of material and labor costs, overhead, inventory controls, production flow, and work in progress. Budgeting and decision making using cost accounting methods. (Prerequisites: ACCT 101 and ACCT 102 or ABUS 142 and ABUS 143.)

ABUS 250 3 Credits  
As Demand Warrants  
Introduction to Managerial Accounting (3+0)  
Use of accounting information for managerial decisions, planning and control. Accounting process, responsibility in accounting, performance measurement, capital budgeting and analysis of financial reports. (Prerequisites: ACCT 101, 102.)

ABUS 253 3 Credits  
As Demand Warrants  
Principles of Retailing (3+0)  
Current retail practices and technologies. Merchandising, store operation, computerized inventory control and electronic cash registers, finance and credit, personnel, sales promotions and selling. Preparation for a career in a retailing or service business.

ABUS 254 3 Credits  
As Demand Warrants  
Salesmanship (3+0)  
Explores salesmanship as a skill individuals use in selling themselves and their ideas as well as products and services. Personal selling, buyer behavior and communication, creative selling process, sales management, and time-use management. For persons with and without sales experience.

ABUS 255 3 Credits  
As Demand Warrants  
Marketing in Tourism (3+0)  
Basic principles of marketing for the tourism industry. Emphasis on Alaska as the tourist destination. (Prerequisite: BA 160.)
MINERAL EXPLORATION TECHNIQUES
EIT 266 3 Credits As Demand Warrants
Transportation and Logistics Management (1+0) Understanding of issues and challenges concerning structure and management of air, sea, rail and highway transportation systems. Emphasis on effective management of the transporting of people and goods intra-Alaska and to destinations that are served from Alaska. (Prerequisite: ABUS 158 or permission of instructor.)

AMIT 206 1-3 Credits As Demand Warrants
Intro. to Hospitality Industry Focusing on the development and operation of small and large hotels, Bed and Breakfast, and Lodge operations. Supervised training and work experience. Analysis of work experience and relationship of the job to career and academic goals. Managerial concepts, problems of working with groups and individuals, organizational structures, communications and planning. (Prerequisite: Permission of the instructor.)

APPLIED MINING TECHNOLOGY

AMIT 101 3 Credits As Demand Warrants
Introduction to Mining (3+0) Fundamentals of surface and underground mining, economic planning, proper exploration designs, environmental concerns, safety factors.

AMIT 109 1 Credit As Demand Warrants
Underground Mine Safety (1+0) Rights of miners, self rescue devices, introduction to the work environment, escapeways, roof and ground control, ventilation, health, cleanup, hard recognition, first aid, mine gasses, electrical hazards. Course fulfills the Mine Safety Health Administration requirements for new underground miner training. Students are awarded MSHA certificate upon course completion. Materials fee: $5.00.

AMIT 110 3 Credits As Demand Warrants
New Underground Miner Training (3+0) Orientation to the mine environment, general mine inspection, scaling, staging, drilling, rock bolting, blasting, mucking, and mine rescue. Provides the inexperienced underground miner with the mandatory MSHA federal training to become employable. Materials fee: $50.00.

AMIT 120 2 Credits As Demand Warrants
Explosives I (2+0) Theory and safe use of explosives with a focus on blasting agents used for rock excavation.

AMIT 125 3 Credits As Demand Warrants
Mineral Exploration Techniques (3+0) Modern, scientific exploration and prospecting techniques utilized in Alaska since the 1970's. Exploration design, ore deposit models, exploration geochemistry and geophysics, drilling sampling and geostatistics. Also available via Independent Learning.

AMIT 129 1 Credit As Demand Warrants
Surface Mine Safety (1+0) Rights of miners, introduction to the work environment, ground control, hazard recognition, first aid, and explosive safety. Course fulfills the Mine Safety Health Administration requirements for surface miner training. Students are awarded MSHA certificate upon completion of the class. Materials fee: $3.00.

AMIT 130 3 Credits As Demand Warrants
Surface Mining Operations (3+0) Safe operations of a surface mine. Place gold, sand and gravel, coal, and open pit metal mines.

AMIT 140 3 Credits As Demand Warrants
Environmental Permitting (3+0) Mineral development permits required in Alaska. Students are encouraged to provide their own case histories.

AMIT 151 1 Credit As Demand Warrants
Settling Pond and Recycle Techniques (1+0) Design of settling ponds and recycle systems. Students will work with individual case histories.

AMIT 152 1 Credit As Demand Warrants
Fire Assay Techniques (1+0) Sampling, theory and practice of fire assaying. Fluxes, oxidation and reduction reactions, fusion of assay charges, cupellation, annealing, micro-weighing and assay charge calculation.

AMIT 153 1 Credit As Demand Warrants
Laboratory Analysis (1+0) Production laboratory procedures for sample analysis, heat leaching and titrations. Individual projects required.

AMIT 154 1 Credit As Demand Warrants
Water Quality and Flocculents (1+0) Water quality processes using flocculents; removal of total suspended solids from placer mining waste water.

AMIT 155 1 Credit As Demand Warrants
Drilling Technology (1+0) Terminology and techniques used in exploration and production drilling.

AMIT 156 1 Credit As Demand Warrants
Applied Cartography (1+0) Map and chart preparation. Drafting skills for prospecting maps, mine maps, permits and data presentation.

AMIT 161 1 Credit As Demand Warrants
Alaska Ore Deposits (1+0) Geology, ore reserves and preliminary mining plans of significant Alaskan mineral deposits.

AMIT 162 1 Credit As Demand Warrants
Geochemical Sampling (1+0) Hands-on scientific sampling methods for rock, soil, pan concentrates, stream sediments, air and water.

AMIT 170 3 Credits As Demand Warrants
Fundamentals of Coal Mining (3+0) Origin and types of Alaskan and other coal deposits, exploration and planning methods, extraction processes for underground and surface mines, mining safety, coal preparation, and reclamation. Job requirements, safety, and environmental consideration. Optional field trip to an active coal mine. Materials fee: $5.00.

AMIT 180 3 Credits As Demand Warrants
Colored Stone Grading and Evaluation (3+0) Grading, appraisals, and identification of colored stones. Formation and structure, properties, deposits and production, and descriptions of major gemstones.

AMIT 185 1 Credit As Demand Warrants
Diamond Evaluation and Grading (1+0) Colors and clarity grading of diamonds, mining of raw material, and detection of stimulants.

AMIT 205 1 Credit As Demand Warrants
Geomagnetic Surveying (1+0) Placer gold deposit prospecting using magnetic surveying. Student survey work and data interpretation.

AMIT 206 1 Credit As Demand Warrants
Electromagnetic Surveying (1+0) Electromagnetic geophysical exploration methods and operations using the VLF-EM-16, an exploration tool for gold and massive sulfide deposits.

AMIT 210 3 Credits As Demand Warrants
Advanced Underground Mining (3+0) Skill training conducted in safety, drilling, blasting, ground support, mucking, maintenance and utilities at the Silver Fox Mine.
Still leading and so leading into a
Making Fundamental skills in constructing stained glass

ART 122 1 Credit
Introduction to Stained Glass (2+4) h
Fundamental skills to construct stained glass pieces. Basics of glass cutting, leading and soldering. Each student completes a square foot window, a large group project and a sun catcher.

ART 125 1 Credit
Alaeut Basketry Practiceum (0+3) h
Introduction to techniques of Alaeut basketry, including design elements and Attu, Atka, and Unalaska style lids and knobs. Historical and artistic overview of the art form. Offered at Aleutian/Regional Center only.

ART 161 3 Credits
Two-Dimensional Design (1+4) h
Fundamentals of pictorial form; principles of composition, organization, and structure. Materials fee: $25.00.

ART 162 3 Credits
Color and Design (1+4) h

ART 163 3 Credits
Three-Dimensional Design (1+4) h
Fundamental concepts in organization of 3-dimensional forms. Introduction to various materials and construction techniques. Materials fee: $50.00.

ART 200X 3 Credits
Aesthetic Appreciation: Interrelation of Art, Drama, and Music (3+0) h
Understanding and appreciation of art, drama, and music through an exploration of their relationship. Topics include the creative process, structure, cultural application and diversity, the role of the artist in society, and popular movements and trends. Materials fee: $25.00. (Prerequisite: Sophomore standing or permission of instructor.)

ART 201 3 Credits
Beginning Ceramics (1+4) h
Foundation experiences with clays, glazes, plaster, enamels, glass, kiln stacking and firing. Materials fee: $75.00. (Prerequisites: ART 105 and ART 161 or 162 or 163, or permission of the instructor.)

ART 205 3 Credits
Intermediate Drawing (1+4) h
Exploration of pictorial composition and creative interpretation of subjects. Materials fee: $25.00. (Prerequisite: ART 105.)

ART 207 3 Credits
Beginning Printmaking (1+4) h
Concepts and techniques of printmaking. Subject areas taken from relief, intaglio, serigraphy, lithography. Materials fee: $75.00. (Prerequisites: ART 105 and ART 161 or 162 or 163, or permission of the instructor.)

ART 208 2 Credits
Art for the Classroom Teacher (1+2) h
(Same as ED 208)
Concepts in art education for persons with limited art background working with young children. Combines a philosophy of art education, art history, and "hands-on" experiences to enable the teacher to effectively integrate visual arts into the curriculum as enjoyment and enrichment.

ART 209 3 Credits
Beginning Metalsmithing and Jewelry (1+4) h
Basic techniques of fine metalsmithing and jewelry. Materials fee: $75.00. (Prerequisites: ART 105 and ART 161 or 162 or 163, or permission of the instructor.)

ART 211 3 Credits
Beginning Sculpture (1+4) h
Basic sculpture techniques and principles. Materials fee: $75.00. (Prerequisites: ART 105 and ART 161 or 162 or 163, or permission of the instructor.)

ART 213 3 Credits
Beginning Painting (Acrylic or Oil) (1+4) h
Basic materials and techniques in either medium. Pictorial principles and organization of paintings. Materials fee: $25.00. (Prerequisites: ART 105 and ART 161 or 162 or 163, or permission of the instructor.)

ART 223 3 Credits
Every Third Spring
Watercolor Painting (1+4) h
Painting in various transparent and opaque media (watercolor, tempera, polymer, crafts) - Emphasis on techniques and subjects. (Prerequisites: ART 105 and ART 161 or 162 or 163, or permission of the instructor. Next offered: 1996-97.)

ART 261 3 Credits
Fall
History of World Art (3+0) h
Origins of art and its development from the beginning through contemporary painting, sculpture and architecture. ART 261-262 may be taken in reverse order; however, course content is presented in a chronological sequence beginning with fall semester. (Prerequisite: Sophomore standing.)
ART 268 3 Credits  Fall, Spring
Beginning Native Art Studio (1+4 h)
(Prerequisite: ART 268)
Understanding and applying the traditional designs and technologies of Native art. Materials fee: $25.00. (Prerequisite: AR 105 or permission of instructor.)

ART 301 3 Credits  Fall, Spring
Intermediate Ceramics (1+4 h)
Continuation of beginning ceramics. Emphasis on glaze calculations and advanced plaster techniques. Materials fee: $75.00. (Prerequisite: ART 201 or permission of instructor.)

ART 305 3 Credits  Spring
Advanced Drawing (1+4 h)
Development and refinement of individual problems in drawing, can be repeated for credit with permission of instructor. Materials fee: $25.00. (Prerequisite: ART 205 or permission of instructor.)

ART 307 3 Credits  Fall, Spring
Intermediate Printmaking (1+4 h)
Continuation of ART 207 with emphasis on technique and color printing. Materials fee: $75.00. (Prerequisite: ART 207 or permission of instructor.)

ART 309 3 Credits  Fall, Spring
Intermediate Metalsmithing and Jewelry (1+4 h)
Further investigation of material processes and techniques; some emphasis on design. Materials fee: $75.00. (Prerequisite: ART 209 or permission of instructor.)

ART 311 3 Credits  Fall, Spring
Intermediate Sculpture (1+4 h)
Exploration in materials and concepts of sculpture. Emphasis on personal creativity and skill development. Materials fee: $75.00. (Prerequisite: ART 211 or permission of instructor.)

ART 3130 3 Credits  Fall, Spring
Intermediate Painting (1+4 h)
Continued development of expressive skills in painting in any media. Emphasis on pictorial and conceptual problems. Materials fee: $25.00. (Prerequisite: ART 213.)

ART 324 3 Credits  Every Third Spring
Watercolor Painting and Composition (1+4 h)
Development of individual approach to watercolor media. Can be repeated for credit with permission of the instructor. (Prerequisite: ART 223. Next offered: 1997-98.)

ART 363 3 Credits  Alternate Spring
History of Modern Art (3+0 h)
Development of modern art forms and theories in the visual arts from the late 19th century to the present. Concentration on the artistic pluralism of 20th century art forms: Cubism, Futurism, Surrealism, Expressionism, Constructivism, Non-objective Art, Abstract Expressionism, Pop Art, Realism, and many other "isms." (Prerequisite: ART 262 or permission of instructor. Next offered: 1996-97.)

ART 364 3 Credits  Alternate Spring
Italian Renaissance Art (3+0 h)
Development of the Renaissance from early Florentine to the High Renaissance of Venice. Study of art by Masaccio, Michelangelo, Da Vinci, Titian, etc. (Prerequisite: ART 261 or permission of instructor. Next offered: 1995-96.)

ART 365 3 Credits  Fall
Native Art of Alaska (3+0 h)
(Prerequisite: ART 365)
Art forms of the Eskimo, Indian and Aleut from prehistory to the present. Changes in forms through the centuries.

ART 366 3 Credits  Alternate Spring
Northwest Coast Indian Art (3+0 h)
(Prerequisite: ART 366 and ANTH 366)
Arts of the Northwest Coast Indians and the place of art in their culture. (Next offered: 1995-96.)

ART 367 3 Credits  Alternate Spring
Eskimo Art (3+0 h)
(Prerequisite: ART 367)
Eskimo art from Alaska, Canada and Siberia beginning with the earliest known pieces to the beginning of the 20th century. (Next offered: 1995-96.)

ART 368 3 Credits  Fall, Spring
Intermediate Native Art Studio (1+4 h)
(Prerequisite: ART 268 or permission of instructor.)

ART 3710 3 Credits  Fall
Introduction to Computer Art (1+4)
Digital editing with an overview of the field of computer art. Materials fee: $75.00. (Prerequisite: Introductory computer course and ART 105, 161, 162, or 163.)

ART 401 3 Credits  Fall, Spring
Advanced Ceramics (1+4 h)
Emphasis on individual projects, plus a class project on architectural mural(s). May be repeated for credit with permission of instructor. Materials fee: $75.00. (Prerequisite: ART 301 or permission of instructor.)

ART 402 3 Credits  As Demand Warrants
Anthropology of Art (3+0 s)
(Same as ANTH 402 and ANTH 602)
Anthropological study of art in cross-cultural perspective. Social context of art production and use, cross-cultural variations in definition of an artist's role. (Prerequisites: Senior standing or permission of instructor.)

ART 4070 3 Credits  Fall, Spring
Advanced Printmaking (1+4 h)
Individual development of technical and creative processes. May be repeated for credit with permission of instructor. Materials fee: $75.00. (Prerequisite: ART 307 or permission of instructor.)

ART 409 3 Credits  Fall, Spring
Advanced Metalsmithing and Jewelry (1+4 h)
Materials and processes; introduction to holloware skills and forging. May be repeated for credit with permission of instructor. Materials fee: $75.00. (Prerequisite: ART 309 or permission of instructor.)

ART 411 3 Credits  Fall, Spring
Advanced Sculpture (1+4 h)
Principles, practices and concepts of sculpture. May be repeated for credit with permission of instructor. Materials fee: $75.00. (Prerequisite: ART 311 or permission of instructor.)

ART 4130 3 Credits  Fall, Spring
Advanced Painting (1+4 h)
Individual experimentation and technical/conceptual development in painting. Can be repeated for credit with permission of instructor. Materials fee: $25.00. (Prerequisite: ART 313.)

ART 4170 3 Credits  Every Third Spring
Lithography (1+4 h)
An exploration of stone and metal plate lithography. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 105, 207, or permission of instructor. Next offered: 1996-97.)

ART 419 3 Credits  Fall, Spring
Life Drawing (1+4 h)
Drawing from life; study of artistic anatomy. Materials fee: $30.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 305 or permission of instructor.)

ART 4270 3 Credits  Every Third Fall
Relief (1+4 h)
Woodcut and monotype with emphasis on color. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisites: ART 105, 207, and 213, or permission of instructor. Next offered: 1997-98.)

ART 4370 3 Credits  Every Third Fall
Intaglio (1+4 h)
Intaglio printing with emphasis on experimentation and color photo intaglio printing. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisites: ART 105, 162, 207, or permission of the instructor. Next offered: 1996-97.)

ART 441 3 Credits  Every Third Spring
Lost Wax Casting (1+4 h)
Design and execution of jewelry and other small metal objects by lost wax casting. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 409 or permission of instructor. Next offered: 1996-97.)

ART 442 3 Credits  Every Third Spring
Nonferrous Forging (1+4 h)
Design and execution of hammer forged nonferrous metal objects. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 409 or permission of instructor. Next offered: 1996-97.)

ART 443 3 Credits  Every Third Spring
Holloware (1+4 h)
Design and construction of holloware by raising, sinking, and fabrication. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 409 or permission of instructor. Next offered: 1996-97.)
ART 4470  3 Credits  Every Third Spring  
Silkscreen (1+4) h  
Silkscreen printing with photo process. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisites: ART 105, 162, 207, or permission of the instructor. Next offered: 1997-98.)

ART 450  3 Credits  Every Third Fall  
Raku Pottery (1+4) h  
Raku bodies, glazes and decorations. Kiln building. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 201 or permission of instructor. Next offered: 1996-97.)

ART 451  3 Credits  Every Third Spring  
Earthware (1+4) h  
Earthenware pottery bodies, glazes, decorations and firing techniques. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 201 or permission of instructor. Next offered: 1996-97.)

ART 452  3 Credits  Every Third Fall  
Porcelain (1+4) h  
Porcelain bodies, glazes, decorations and firing techniques. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 201 or permission of instructor. Next offered: 1996-97.)

ART 453  3 Credits  Every Third Spring  
Kiln Design and Construction (1+4) h  
Kiln design and construction including building a full-sized kiln. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 201 or permission of instructor. Next offered: 1996-97.)

ART 454  3 Credits  Every Third Fall  
Vapor Glazing (1+4) h  
Clays, glazes, decorative techniques and kilns used in "salt glazing" (i.e. vapor glazing). Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: ART 201 or permission of instructor. Next offered: 1996-97.)

ART 455  3 Credits  Spring  
Studio Glass (1+4) h  
Studio participation in cold glass and limited hot glass techniques. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisite: Advanced standing or permission of instructor.)

ART 4570  3 Credits  Every Third Fall  
Papermaking (1+4) h  
Production of paper from rags and linters for use as an end in itself as well as a support for art. Two- and three-dimensional projects are required. Experimentation is encouraged. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisites: ART 105, 207, 163 or 211, or permission of instructor. Next offered: Fall 1995.)

ART 4670  3 Credits  Every Third Spring  
Photo Process Printing (1+4) h  
Production of etchings, lithographs and silkscreen prints using photo mechanical processes. Elements of electro-photography and desktop publishing explored. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisites: ART 105, 206, 207 or permission of instructor. Next offered: 1995-96.)

ART 468  3 Credits  Fall, Spring  
Advanced Native Art Studio (1+4) h  
(Same as ANS 468)  
Advanced traditional designs and technologies of Native art. Use of contemporary materials to interpret traditional forms. May be repeated for credit with permission of instructor. Materials fee: $25.00. (Prerequisite: ART 368 or permission of instructor.)

ART 4710  3 Credits  Spring  
Computer Art (1+4) h  
Production and reproduction techniques for digital painting, images manipulation and typography. Materials fee: $75.00. May be repeated for credit with permission of instructor. (Prerequisites: ART 105 and ART 161, 162 or 163, ART 371 or CS 201 or equivalent.)

ART 499  1-3 Credits  Fall, Spring  
Thesis Project  
Directed work toward individual exhibition; completed outside regularly scheduled classes. Required for B.F.A. candidates. (Prerequisites: Senior standing.)

Atmospheric Science

ATM 636  3 Credits  Alternate Fall  
Physics of Atmospheres (3+0)  

ATM 644  3 Credits  Alternate Spring  
Weather and Circulation (3+0)  

ATM 646  3 Credits  Alternate Spring  
Dynamics of the Atmosphere and Ocean (3+0)  

ATM 656  3 Credits  Alternate Fall  
Climate and Climate Change (3+0)  

Automotive

AUTO 080  2 Credits  As Demand Warrants  
Driver and Safety Education (2+0)  
Drivers Education for the beginning driver. Alaska Driver's Manual, material necessary to gain an Alaska Driver's Permit. Defensive driving methods for accident-free driving and basic mechanical information.

AUTO 081  1 Credit  As Demand Warrants  
Behind-the-Wheel Training (0+3)  
Practical driver training in actual situations. Expected student outcome is obtaining a State of Alaska driver's license. (Prerequisite: Must have a valid Alaska Driver's Permit.)

AUTO 100  1 Credit  As Demand Warrants  
Introduction to Small Engine Repair (1+0)  
Parts and functions of a small engine and its electrical system. Dismantling procedures, cleaning and reassembly techniques, gasket-making, lubrication, troubleshooting, and minor repairs.

AUTO 103  1 Credit  As Demand Warrants  
Auto Tune-Up (1+0)  
A dual purpose course serving as an introduction to an advanced course and as a consumer interest course. Uses a "hands-on" approach to basic troubleshooting and maintenance, with tools commonly available.

AUTO 170  1 Credit  As Demand Warrants  
Snowmachine Maintenance and Repair (1+0)  
Fundamental skills for operation and repair. Engine tune-up, lubrication, belt and track repair, alignment, and basic problems encountered during operation.

Aviation

AVTY 100  4 Credits  As Demand Warrants  
Private Pilot Ground School (4+0)  
Study of aircraft and engine operation and limitations, aircraft flight instruments, navigation, navigation computers, national weather information and dissemination service. Federal aviation regulations, flight information publications, radio communications and navigation. Preparation for FAA private pilot-airplane written exam. Also available via Independent Learning.

AVTY 101  2 Credits  As Demand Warrants  
Private Pilot Flight Training (2+0)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training will meet federal aviation regulations. Course completion requires awarding of private pilot certificate. (Prerequisite: Department approval required.)

AVTY 102  3 Credits  As Demand Warrants  
Commercial Ground Instruction (3+0)  
Advanced study of aircraft performance, airplane systems (including complex single engine, multi-engine and turboprop aircraft), navigation, regulations and meteorology. Employment considerations for commercial pilots surveyed. Preparation for the FAA commercial pilot-airplane written exam.

AVTY 103  2 Credits  As Demand Warrants  
Commercial Flight Training (2+0)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training will meet federal aviation regulations. Course completion requires awarding of commercial pilot certificate. (Prerequisite: Private Pilot certificate, AVTY 102 or concurrent enrollment, or passing score on FAA Commercial Pilot written exam, department approval required.)
AVTY 105 1 Credit  As Demand Warrants  
Seaplane Flight Training (1+0)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training will meet federal aviation regulations. Course completion requires a rating. (Prerequisite: Private pilot certificate or higher, department approval required.)

AVTY 107 1 Credit  As Demand Warrants  
Multi-Engine Flight Training (1+0)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training will meet federal aviation regulations. Course completion requires a multi-engine rating. (Prerequisite: Private pilot certificate or higher, department approval required.)

AVTY 108 1 Credit  As Demand Warrants  
Introduction to Skis (1+0)  
Pilot instruction with a certified flight instructor or flight school in techniques of ski-plane operation and cold weather maintenance. The student is responsible for making arrangements for an appropriate aircraft, instructor, and financing. (Prerequisite: Private pilot certificate.)

AVTY 109 1 Credit  As Demand Warrants  
Glider Flight Training (1+0)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training will meet federal aviation regulations. Course completion requires a glider and private or commercial pilot certificate with a glider category rating. (Prerequisite: Department approval.)

AVTY 110 1 Credit  As Demand Warrants  
Biennial Flight Review (1+0)  
Review of federal aviation regulations, air traffic control procedures, communications, normal and emergency aircraft procedures, and aircraft performance. (Prerequisite: Student must have private pilot certificate.)

AVTY 111 3 Credits  Fall  
Fundamentals of Aviation (3+0)  
Basic concepts associated with the aircraft and its environment. Aircraft and its components, including basic systems, Federal Aviation Administration regulations, airports, and airway utilization, aeronautical charts, navigation, weather, theory, medical and emergency factors.

AVTY 116 3 Credits  As Demand Warrants  
Aviation History (3+0)  
Aviation from its early days to the present. People, places, and machines contributing to the development of Alaskan aviation.

AVTY 117 3 Credits  As Demand Warrants  
Aviation Weather (3+0)  
Weather and its effects on air transportation and air traffic control. Aviation weather reports and forecasts. Methods of weather distribution including teletype, voice lines, broadcasts, and other systems used by the U.S. Government and airway users. Materials fee: $25.00.

AVTY 119 1 Credit  As Demand Warrants  
Flight Simulator Instruction Basic Procedures (0+3)  
Individualized operation and use of the LINK GAT-1 or other FAA-approved flight simulator and selected practice in basic flight maneuvers, procedures and techniques. A supplement to both private pilot ground school and actual flight training. A minimum of four hours of simulator instruction is required. Simulator time is $25.00 per hour. A total of $100.00 must be paid at fee payment. (Prerequisite: AVTY 100 or concurrent enrollment in AVTY 117.)

AVTY 155 1-3 Credits  As Demand Warrants  
Mechanics of the Airplane, its power plant and systems to enable the student to evaluate limitations or make maintenance decisions. Designed for the pilot-owner. Materials fee: $35.00. (Prerequisite: AVTY 100 or permission of instructor.)

AVTY 200 4 Credits  As Demand Warrants  
Instrument Ground School (3+3)  
Instrument flight operations in detail, attitude instrument flying, air traffic control and navigation facilities, pilot responsibilities. IFR enroute charts, instrument approach procedures, airspace and airway route system, ATC operations and procedures, Federal Aviation Regulations, flight planning, human factors, meteorology. Includes optional visits to FAA RAPCO and ARTCC facilities. Laboratory consists of at least four hours of instrument instruction by an authorized instructor in an FAA-approved instrument ground trainer (individually scheduled by the student through the Aviation Department). Simulator time is $25.00 per hour. A total of $100.00 must be paid at fee payment. (Prerequisites: AVTY 102 or permission of the instructor.)

AVTY 201 2 Credits  As Demand Warrants  
Instrument Pilot Training  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Cost of flight instruction varies with location of instruction. Theory will be in accordance with current Federal Aviation Regulations. Course completion requires a rating. (Prerequisite: Private Pilot Certificate or AVTY 200 or concurrent enrollment, or passing score on FAA Private or Commercial Pilot written exam, or permission of instructor. Department approval required.)

AVTY 202 3 Credits  As Demand Warrants  
Flight Instructor Flight Training (2+2)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training meets federal aviation regulations. Course completion requires a rating. (Prerequisites: Private pilot certificate with instrument rating, AVTY 202 or concurrent enrollment, or passing score on FAA flight instructor written exams; department approval.)

AVTY 203 2 Credits  As Demand Warrants  
Flight Instructor Flight Training (2+2)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training meets federal aviation regulations. Course completion requires a rating. (Prerequisites: Commercial pilot certificate with instrument rating, AVTY 202 or concurrent enrollment, or passing score on FAA flight instructor written exams; department approval.)

AVTY 204 2 Credits  As Demand Warrants  
Airplane Flight (2+2)  
Flight instruction is arranged by student through approved pilot school or independent flight instructor. Training meets federal aviation regulations. Course completion requires a rating. (Prerequisites: Private pilot certificate with instrument rating, AVTY 202 or concurrent enrollment, or passing score on FAA flight instructor written exams; department approval.)

AVTY 205 3 Credits  As Demand Warrants  
Flight Instructor Ground School (3+0)  
Preparation for the FAA certified flight instructor or advanced ground instructor written exam. (Prerequisite: Commercial pilot certificate or permission of instructor.)

AVTY 206 4 Credits  As Demand Warrants  
AVT Ground Instruction (4+0)  
Preparation for the FAA airline transport pilot written exam. (Prerequisite: Compliance with FAR 61.151 and 61.155 or department permission.)

AVTY 207 2 Credits  As Demand Warrants  
ATP Flying (2+0)  
Qualification for single engine or multi-engine FAA airline transport pilot certificate. (Prerequisites: Commercial pilot certificate, 1,500 hours of flight time as pilot or equivalent as described in FAR 61.155; AVTY 206 or passing score on FAA airline transport pilot written exam; current FAA first class medical certificate.)

AVTY 208 3 Credits  As Demand Warrants  
Flight Simulator Operation (2+3)  
Advanced training in a flight simulator (individually scheduled through the Aviation Department). A minimum of four hours of simulator instruction is required. Simulator time is $25.00 per hour. A total of $100.00 must be paid at fee payment. (Prerequisites: Private pilot certificate or higher, instrument rating, certified flight instructor- instrument or instrument ground instructor certificate, or department permission.)

AVTY 220 4 Credits  As Demand Warrants  
Flight Engineer Ground School (4+4)  
A comprehensive examination of the major systems of one of the following aircraft: turbojet (B-727, DC-8, B-707); turboprop (L-382, L-188); or reciprocating (DC-6). Preparation for the FAA flight engineer written exam. (Prerequisites: FAA commercial pilot license and instrument rating, or equivalent, and department approval.)

AVTY 231 3 Credits  As Demand Warrants  
Arctic Survival (3+Arranged)  
Use of principles, procedures, techniques and equipment to survive extreme arctic conditions and to assist in safe recovery. Lab required. Materials fee: $50.00.

AVTY 232 3 Credits  As Demand Warrants  
Aviation Astronomy and Navigation (3+0)  
Air navigation and astronomy, including charts, equipment, star and constellation identification, and calculations.

AVTY 233 1 Credit  As Demand Warrants  
Loran C and GPS Navigation (1+0)  
The theory of Loran "C" and GPS and considerations regarding their use. System features are compared and the advantages and disadvantages of each are explored.

AVTY 235 3 Credits  As Demand Warrants  
Elements of Weather (3+4)  
Weather as it affects aircraft operators with an emphasis on Interior Alaska.
AVTY 239 4 Credits As Demand Warrants
Aircraft Dispatcher (4+0)
Coordinating functions involving the aircraft and other departments of an airline business. Those wanting to be eligible for an aircraft dispatcher certificate must be 23 years of age.

AVTY 301W,03 Credits As Demand Warrants
Aircraft Workers Strategies (3+0)
Knowledge and skills to use general aviation aircraft as a tool for field transportation, field logistics or as a platform for instrumentation and data collection. For pilots or air workers who use aviation in natural resources management. (Prerequisite: AVTY 100 or 111.)

AVTY 302 2 Credits As Demand Warrants
Aerial Data Collection (2+0)
Use of aircraft to collect ground data ocular observations through operation of remote sensing data equipment. Mission design and sampling strategies. (Prerequisite: AVTY 301.)

AVTY 302L 1 Credit As Demand Warrants
Aerial Data Collection Laboratory (0+2)
Optional Lab portion of AVTY 302. (Prerequisites: AVTY 301, 302.)

AVTY 305 3 Credits As Demand Warrants
Aviation Law (3+0)
Impact of law and insurance on the aviation industry for pilots, air workers, and other aviation professionals; emphasis on commercial operations and the air transport service; history of the FAA; aircraft ownership; aviation insurance; FAA enforcement procedures; negligence; product liability. (Prerequisites: AVTY 102 and 200 or permission of instructor.)

AVY 402 3 Credits As Demand Warrants
Aircraft Management (3+0)
Securing, dispatching, and monitoring aircraft operations. Safety, security, community relations, cost-effective scheduling and personnel management for mission scheduling.

AVY 405 3 Credits As Demand Warrants
Advanced Aircraft Operations (3+0)
Techniques and requirements associated with the operation of turbine powered aircraft, remotely piloted aircraft, helicopters, and STOL for pilots and air workers. Safety, security, community relations, cost-effective scheduling and personnel management for mission scheduling. (Prerequisites: AVTY 100, 111, 301, or 302 or permission of instructor.)

AVY 410 2 Credits As Demand Warrants
Techniques of Bush Flying (1+2)
Flight training emphasizing emergency procedures in remote locations. Safety, security, community relations, cost-effective scheduling and personnel management for mission scheduling.

BIOL 102 3 Credits Summer, As Demand Warrants
High Latitude Biology (3+0) n
Major themes in modern biological sciences, using experiences and examples in Alaska and circumpolar regions. Exploration of one or six themes in sufficient detail to become aware of the knowledge frontier dividing the known from the undiscovered. Research term paper required.

BIOL 103X 4 Credits Fall, Spring
Biology and Society (3-3) n
Fundamental principles of biology; emphasis on their application to humans in the modern world. Lectures, laboratory demonstrations, experiments, and discussions of contemporary biological topics. For non-science majors; cannot be used as a biology elective by biological science majors. Laboratory fee: $30.00. (Offered every Fall at the NorthWest Campus.)

BIOL 104 3 Credits Fall, Spring
BIOL 104X 4 Credits Fall, Spring
Natural History of Alaska (3+0 or 3+3) n
The physical environment peculiar to the North and important in determining the biological setting; major ecosystem concepts to develop an appreciation for land use and wildlife management problems in both terrestrial and aquatic situations. May not be used as biology elective credit for a major in biological science. BIOL 104X (4 credits) fulfills the Natural Science Core requirement. BIOL 104 (3 credits) is also available via Independent Learning. BIOL 104X laboratory fee: $30.00.

BIOL 105X 4 Credits Fall, Spring
Fundamentals of Biology I and II (3+3) n
Principles of biology for the science major. First semester: ecology, genetics, evolution, plant structure and function. Second semester: chemistry of life, introduction to cell structure and function, molecular biology, animal structure and function. Laboratory fee: $30.00. Students for whom this course is required for their major will be given preference when space is limited. (Prerequisites: High school algebra equivalent and placement in ENGL 111X. Recommended: high school biology and chemistry, or permission of instructor; BIOL 105X for BIOL 106X.)

BIOL 126 2 Credits As Demand Warrants
Biology of Northern Birds (1+3) n
Introduction to modern biology (taxonomy, ecology, evolutionary theory, behavior, etc.) for non-majors, using familiar vertebrates in the context of their adaptations to northern environments. Laboratories stress comparative studies, measurements, and how observations are recorded and shared among scientists. (Prerequisites: High school algebra and one year of high school science or permission of instructor.) Offered at Arctic Sivumivng Illugvik College only.

BIOL 150 3 Credits Independent Learning Only
Introduction to Marine Biology
Survey of marine organisms, evolution of marine life, habitats and communities of ocean zones, productivity, and marine resources. For non-science majors; may not be used as biology elective credit for a major in biological science.

BIOL 179 2 Credits As Demand Warrants
Ornithology Field Research (0+6) n
Field practicum (apprenticeship) in research techniques on the biology of birds, and natural history interpretations, for non-majors. (Prerequisites: BIOL 126 [may be taken concurrently] or permission instructor; see also BIOL 479, the parallel course primarily for declared biology majors.) Offered at Arctic Sivumivng Illugvik College only.

BIOL 181 2 Credits Fall
Principles and Fundamentals of Evolutionary Theory (2+0)
An introduction, by tracing its historical development, to the theory of organic evolution. Readings on Cuvier, Lamarck, Darwin, and others. Research paper required. (Prerequisite: Permission of instructor.) Offered at Arctic Sivumivng Illugvik College only.

BIOL 211X 4 Credits Fall
Human Anatomy and Physiology I and II (3+3) n
Integrated view of human structure and function for students in pre-professional allied health programs. BIOL 211X covers cells, tissues and organs, skeletal and muscle systems, the nervous system, and integument. BIOL 212X examines circulatory, respiratory, digestive, excretory, endocrine, and reproductive systems. Laboratory fee: $30.00. (Prerequisites: BIOL 211X for BIOL 212X. Recommended: high school biology, high school algebra, CHEM 105X-106X or CHEM 103X-104X, ENGL 111X.)

BIOL 239 4 Credits Fall
Introduction to Plant Biology (3+3) n
Structure, function, ecology, and evolutionary patterns of the major groups of plants. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X.)

BIOL 262 4 Credits Spring
Principles of Genetics (4+0) n
Principles of inheritance; physico-chemical properties of genetic systems. Special fee: $20.00. (Prerequisites: BIOL 105X, 106X.)

BIOL 271 4 Credits Fall
Principles of Ecology (4+0) n

BIOL 273X 3 Credits As Demand Warrants
Humans in the Earth System (3+3) n
Understanding the issues involved in global change, how humans cause the changes and how we will be affected. Discussion on the fundamental components of the earth system (atmosphere, oceans, land and biota) and how these components interact. Specific issues include climate change, ozone depletion, deforestation and land degradation. (Prerequisite: Sophomore standing .)

BIOL 277 3 Credits Alternate Spring
Introduction to Conservation Biology (3+0)
Introduction to the basic ecological, genetic, management, legal, and historical developments in conservation biology and focused efforts to manage biological diversity. Resources, with a systemic view of important habitats and endangered species. (Prerequisites: BIOL 105X, 106X. Next offered: 1995-96.)
BIOL 303 4 Credits  Fall  Principles of Metabolism and Biochemistry (3+3)  
Introduction to metabolism at the molecular level. Topics include structure and function of proteins, allosteric and feedback, biological regulation and the major pathways of carbon and nitrogen metabolism. Presented in an evolutionary and ecological context. (Prerequisites: BIOL 105X-106X, BIOL 262, 271; CHEM 105X-106X.)

BIOL 305 5 Credits  Fall  Invertebrate Zoology (3-6) n  
Classification, structure, function, evolution, and life histories of invertebrate animals. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X, and 271.)

BIOL 310 4 Credits  Spring  Animal Physiology (3+3)  
Animal function, including respiration, digestion, circulation, nerve and muscle function, hormones, and reproduction. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X, 262, 271, CHEM 103X and 104X or 105X may be taken concurrently.)

BIOL 317 4 Credits  Spring  Comparative Anatomy of Vertebrates (2-6) n  
Anatomy, phylogeny and evolution of the vertebrates. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X.)

BIOL 328 3 Credits  Spring  Biology of Marine Organisms (3-0) n  
Marine organisms: ocean as a habitat, distribution, classification, functional morphology, and general biology of the major biological groups; man ad the oceans. (Prerequisite: Upper division standing in a biologically-oriented major.)

BIOL 331 4 Credits  Spring  Systematic Botany (2-6) n  
Classification of flowering plants with emphasis on Alaskan flora; taxonomic principles, classical and experimental methods of research. Preregistration is required to insure that each student will prepare a plant collection. Laboratory fee: $30.00. (Prerequisite: BIOL 239 or permission of the instructor. BIOL 262 recommended.)

BIOL 333 3 Credits  Alternate Fall  Biology of the Non-Vascular Plants (2-3) n  
Structure, function, comparative development, taxonomy, phylogeny and life histories of non-vascular cryptogams (algae, excluding blue greens, fungi, lichens, mosses and hepatics), Laboratory fee: $30.00. (Prerequisite: BIOL 239. Next offered: 1996-97.)

BIOL 334 4 Credits  Alternate Fall  Structure and Function in Vascular Plants (3-3) n  
Morphology, anatomy and physiology of vascular plants, stressing the interrelationships between development, anatomy, growth, water relations, photosynthesis, transport and metabolism. Laboratory fee: $30.00. (Prerequisite: BIOL 239. Next offered: 1995-96.)

BIOL 342 4 Credits  Spring  Microbiology (3-3) n  
Morphology and physiology of microorganisms. The role of these organisms in the environment and their relationship to humans. Concepts of immunology, Laboratory stresses aseptic techniques for handling microorganisms, Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X, BIOL 262, CHEM 105X.)

BIOL 380 3 Credits  Alternate Spring  Marine Fishes of Alaska (2+3)  
(Same as FISH 380)  
Taxonomy, recognition, distribution, life history and ecological relationships of marine fishes of Alaska will be studied. Life history traits that make species susceptible to commercial exploitation, changes in climate, ocean circulation or pollution will be emphasized. Laboratory fee: $30.00. (Prerequisites: BIOL 105X and 106X. Next offered: 1996-97.)

BIOL 384 3 Credits  Alternate Spring  Freshwater Fishes of Alaska (2+3)  
(Same as FISH 384)  
Life histories of Alaskan freshwater fish emphasizing species sought by fishermen. Reproduction, age, growth, migration, food, inter-relationships and habitat requirements. (Prerequisites: BIOL 105X and 106X or permission of instructor. Next offered: 1995-96.)

BIOL 406 4 Credits  Alternate Spring  Entomology (3-3) n  
Biological insects and related arthropods, with emphasis on anatomy, physiology, behavior, ecology, and evolution. Lab emphasizes identification. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X, 271. Next offered: 1995-96.)

BIOL 407 3 Credits  Alternate Fall  Aquatic Entomology (2-3)  
Evolution, taxonomy, anatomy, physiology and evolution of aquatic insects. Laboratories emphasize identification and field/labatory techniques. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X and 271, or permission of instructor; BIOL 473 recommended. Next offered: 1996-97.)

BIOL 4140 4 Credits  Fall  Environmental Physiology (3-3) n  
Functional variations and relationships among animals in various environments; respiration, cardiovascular systems, metabolism, temperature regulation, osmoregulation, excretion, nerve and muscle function. Three hour oral presentation/discussion each week. Service fee: $30.00. (Prerequisites: BIOL 310, CHEM 106X and 321 or permission of instructor.)

BIOL 418W 4 Credits  Alternate Spring  Developmental Biology (3-3) n  
Morphological and molecular aspects of development of multicellular organisms, with emphasis on the regulation of morphogenesis. Laboratory stresses experimental study of vertebrate embryos. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X, 310 or permission of instructor. Next offered: 1995-96.)

BIOL 425 3 Credits  Fall  Mammalogy (2-3) n  
Variety of mammals, their behavior, life histories, identification, phylogeny and systematics, morphology, distribution, and zoogeography. Laboratory fee: $30.00. (Prerequisites: BIOL 317 or permission of instructor and junior standing or above.)

BIOL 426W,0/2 3 Credits  Spring  Ornithology (2-3) n  
Evolution, anatomy, physiology, distribution, migration, breeding biology of birds, their classification and identification. Laboratory fee: $30.00. (Prerequisites: BIOL 105X-106X or permission of instructor.)

BIOL 427 4 Credits  Alternate Spring  Ichthyology (3-3) n  
(Same as FISH 427)  
Major groups of fishes, emphasizing fishes of northwestern North America. Classification structure, evolution, general biology, and importance to man. Laboratory fee: $30.00. (Prerequisites: BIOL 317 or permission of instructor. Next offered: 1995-96.)

BIOL 441W,0/2 3 Credits  Fall  Animal Behavior (2-3) n  
(Same as BIOL 642)  
Genetic and physiological bases of behavior, evolutionary and ecological principles of individual and social behavior, sociobiology, and techniques of behavioral observation and analysis. Laboratory fee: $30.00. (Prerequisites: BIOL 310, 271; or permission of instructor.)

BIOL 442W,0/2 4 Credits  Alternate Fall  Advanced Microbiology (2-6) n  
(Same as BIOL 645)  
Diversity of microorganisms. Morphology, physiology and systematics of microorganisms, particularly bacteria. Emphasis on organisms of environmental or medical interest. Laboratory fee: $30.00. (Prerequisites: BIOL 342, CHEM 321 or permission of instructor. Next offered: 1996-97.)

BIOL 443 3 Credits  Alternate Fall  Microbial Ecology (3-0) n  
Interactions of microorganisms with their environment, emphasizing microbial responses to the environment, microbial processes such as nutrient cycling and pollutant biodegradation, and microbial interactions with each other, with plants, and with animals. (Prerequisite: BIOL 342 or BIOL 271 or permission of instructor. Next offered: 1995-96.)

BIOL 444 3 Credits  Alternate Fall  Reproductive Biology (3-0)  
Comparative physiology, endocrinology, behavior and ecology of reproduction in mammals and birds. Hormonal control of reproductive function and behavior; seasonal rhythms, energetics, and life histories of reproduction. Although primarily comparative, aspects of human reproductive function and health covered. (Prerequisite: BIOL 211X, 212X, or 210. Next offered: 1995-96.)

BIOL 445 4 Credits  Spring  Molecular Evolution (3-3)  
(Same as BIOL 645 and CHEM 445 and 645)  
Structure, function and evolution of hereditary molecules (nucleic acids). Laboratory fee: $30.00. (Prerequisite: BIOL 262.)

BIOL 459W,O 3 Credits  Alternate Spring  Women and Science (3-0)  
The historical contributions and participation of women in science with an emphasis on the biological sciences. Discussion of the factors affecting female participation in the sciences and how participation of women in science affects the manner in which science is done. (Prerequisite: Junior standing in the natural sciences or permission of the instructor. Next offered: 1995-96.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 453</td>
<td>3</td>
<td>Molecular Biology in the Real World (3+0) (Same as BIOL 453 and CHEM 453 and 653) Provides in-depth coverage of eukaryotic and prokaryotic gene function, including the applications of recombinant DNA technology to the biological sciences. (Prerequisite: BIOL 262, CHEM 521 or BIOL 303. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>BIOL 461</td>
<td>4</td>
<td>Ecology (3+3) n (Same as BIOL 661) The structure and function of cells. Analysis of cellular events at the cyttoplasmic level including: cell replication, functioning of the cytoskeleton, mitochondria, chloroplasts, Golgi-RER-lysosome system, hormone action, and the regulation of the internal environment of the cell. Laboratory focuses on techniques and problem solving. Laboratory fee: $30.00. (Prerequisites: BIOL 262 or concurrent enrollment, CHEM 321 or concurrent enrollment, or permission of instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>BIOL 471W</td>
<td>3</td>
<td>Population Ecology (3+0) n Biological cycles of populations of plants and animals, including population structure, natality, mortality, population growth, regulation of population size, population interactions (intraspecific, interspecific, and parasitism). BIOL 271 for biology majors; WLF 201 for wildlife majors; other course for others.)</td>
</tr>
<tr>
<td>BIOL 472</td>
<td>3</td>
<td>Communities and Ecosystems (3+0) n Structures and features of plant and animal communities. Structuring forces of competition, predation, herbivory, mutualism, and the flow of energy and nutrients. Latitude and altitudinal gradients in species richness and biogeography. (Prerequisite: BIOL 271.)</td>
</tr>
<tr>
<td>BIOL 473</td>
<td>3</td>
<td>Limnology (2+3) Physical, chemical and biological characteristics of fresh water, emphasizing ecological aspects important to fish and other organisms. Laboratory fee: $30.00. (Prerequisites: BIOL 271, CHEM 106X or permission of instructor.)</td>
</tr>
<tr>
<td>BIOL 474</td>
<td>4</td>
<td>Plant Ecology (3+3) n Principles and contemporary topics in plant ecology. Autecology, community ecology, ecosystem ecology and evolutionary ecology. Laboratory fee: $30.00. (Prerequisites: BIOL 239, BIOL 271, STAT 301. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>BIOL 475</td>
<td>2</td>
<td>Plant Communities of Alaska-Field Course (1+3) Identification of vascular and non-vascular plants and the processes affecting the structure and evolution of Alaskan plant communities. Field trips to the plant communities in habitat Alaska. Laboratory fee: $30.00. (Prerequisites: BIOL 239, permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>BIOL 477W</td>
<td>3</td>
<td>Ecology of Streams and Rivers (3+0) Physical, chemical and (especially) biological aspects of stream and river ecosystems. Considerations of methods used in running water research and management of streams and rivers. (Prerequisites: BIOL 271 and 473 recommended or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>BIOL 479</td>
<td>2</td>
<td>Ornithology Field Trip (0+6) n Techniques of field ornithology, emphasizing identification of birds and bird-habitat relationships. Preparation during the spring semester followed by a field trip of 10-12 days in early May. Students must share expenses. Field trip fee to be announced. Laboratory fee: $30.00. (Prerequisites: BIOL 426 may be taken concurrently and permission of instructor.)</td>
</tr>
<tr>
<td>BIOL 480</td>
<td>3</td>
<td>Water Pollution Biology (3+0) (Same as BIOL 685) Water quality standards: criteria and use classifications. Effects of man-caused environmental stresses on the composition and dynamics of aquatic communities. Changes in transfers of matter and energy. Biological indices including diversity. (Prerequisites: BIOL 271 and BIOL 473 or 477 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>BIOL 481</td>
<td>4</td>
<td>Processes of Evolution (3+3) (Same as BIOL 681) Processes of evolutionary change are used to explore the unifying principles of the biological sciences. Develops fundamental models of population genetics relevant to basic and applied studies in ecology, plant and animal breeding, systematics, conservation biology and wildlife biology. (Prerequisites: BIOL 271, 262, STAT 200, junior standing or above or permission of instructor. STAT 200 may be taken concurrently.)</td>
</tr>
<tr>
<td>BIOL 482</td>
<td>4</td>
<td>Patterns of Evolution (3+3) Patterns of evolution as revealed by the fossil record, molecular and developmental biology, and the methods of comparative biology are used to build a conceptual framework for study of living systems. (Prerequisites: BIOL 271, 262, 303, junior standing or above or permission of instructor.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 601</td>
<td>3</td>
<td>Alternate Spring Compartmental Analysis and Radios isotopic Techniques (2+3)</td>
</tr>
<tr>
<td>BIOL 602</td>
<td>3</td>
<td>Research Design (3+0) (Same as WLF 602)</td>
</tr>
<tr>
<td>BIOL 611J</td>
<td>3</td>
<td>Fish Physiology (3+0)</td>
</tr>
<tr>
<td>BIOL 614</td>
<td>2</td>
<td>Grazing Ecology (2+0) (Same as WLF 614)</td>
</tr>
<tr>
<td>BIOL 615</td>
<td>3</td>
<td>Systematic and Comparative Biology (3+0)</td>
</tr>
<tr>
<td>BIOL 618</td>
<td>3</td>
<td>Biological Geography (3+0)</td>
</tr>
<tr>
<td>BIOL 619</td>
<td>2</td>
<td>Marine Mammals (1+3)</td>
</tr>
<tr>
<td>BIOL 623</td>
<td>3</td>
<td>Physiological Ecology of Overwintering (2+3)</td>
</tr>
<tr>
<td>BIOL 627</td>
<td>3</td>
<td>Chemical Ecology (3+0)</td>
</tr>
<tr>
<td>BIOL 629</td>
<td>3</td>
<td>Advanced Animal Behavior (3+0)</td>
</tr>
<tr>
<td>BIOL 637</td>
<td>2</td>
<td>Modern Evolutionary Theory (2+0)</td>
</tr>
<tr>
<td>BIOL 638</td>
<td>1</td>
<td>Seminar in Ecology and Evolutionary Biology (2+0)</td>
</tr>
<tr>
<td>BIOL 642W</td>
<td>4</td>
<td>Advanced Microbiology (2+6) (Same as BIOL 442)</td>
</tr>
<tr>
<td>BIOL 645</td>
<td>4</td>
<td>Molecular Evolution (3+3) (Same as BIOL 445 and CHEM 445 and 645)</td>
</tr>
<tr>
<td>BIOL 649J</td>
<td>3</td>
<td>Molecular Genetics (3+0) As Demand Warrants</td>
</tr>
<tr>
<td>BIOL 650</td>
<td>3</td>
<td>Fish Ecology (2+3) Fairbanks, Alternate Fall</td>
</tr>
<tr>
<td>BIOL 653</td>
<td>3</td>
<td>Molecular Biology in the Real World (3+0) (Same as BIOL 453 and CHEM 453 and 653)</td>
</tr>
<tr>
<td>BIOL 661</td>
<td>4</td>
<td>Cell Biology (3+3) (Same as BIOL 461)</td>
</tr>
<tr>
<td>BIOL 663</td>
<td>3</td>
<td>Biochemistry and Molecular Biology of Photosynthesis (3+0) (Same as CHEM 663 and MSL 663)</td>
</tr>
<tr>
<td>BIOL 664</td>
<td>3</td>
<td>Algal Biology: Physiological Ecology (3+0) (Same as MSL 664)</td>
</tr>
<tr>
<td>BIOL 672</td>
<td>3</td>
<td>Ecosystem Processes (2+0+2) Alternative Fall</td>
</tr>
<tr>
<td>BIOL 673</td>
<td>3</td>
<td>Soil Microbiology and Biochemistry (3+0) (Same as NRM 673)</td>
</tr>
<tr>
<td>BIOL 675</td>
<td>3</td>
<td>Plant Physiological Ecology (2+3) Alternative Fall</td>
</tr>
<tr>
<td>BIOL 677</td>
<td>3</td>
<td>Advanced Topics in Plant Ecology and Systematics (3+0) Spring</td>
</tr>
<tr>
<td>BIOL 678</td>
<td>3</td>
<td>Tropical Ecology Field Course (0+3+Arr) Alternative Spring</td>
</tr>
</tbody>
</table>
Business Administration

Admittance to 300 and 400 level School of Management courses will be granted only to students with upper division standing. Others will be admitted only with the written permission of the appropriate department head. Students enrolling in School of Management courses are expected to have completed the necessary prerequisites for each course.

A $25 per semester student facility user fee will be assessed for any student taking an S/U option of School of Management courses (AIS, ACCT, BA and ECON except ECON 100X). This fee is in addition to any lab/material fees. Note: This fee does not apply to Tanana Valley Campus courses.

BA 151 3 Credits Introduction to Business (3+0) Fall, Spring
Business organization, nature of major business functions such as management, finance, accounting, marketing, personnel administration. Opportunities and requirements for professional business careers.

BA 180 3 Credits Tourism Principles and Practices (3+0) Fall or Spring
Forces which influence international and domestic hospitality, leisure, travel, and recreation industries. Socio-economic models and measure of regional impact, demand, and supply. Also available via Independent Learning.

BA 253 1-3 Credits Internship in Business (0-1-3) Fall, Spring, Summer
Supervised work experience in an approved position related to the student's career interests or objectives. Number of credits depends on type of position time worked. No student can count more than eight internship credits toward a degree. (Prerequisite: Approval of program or department head.)

BA 303 3 Credits Advanced Leadership (3+1) Fall
Same as MILS 303
Concepts, analysis of leadership styles and functions applicable to formal organizations. Lab includes: Advanced leadership development and enrichment seminars. (Prerequisite: Upper division standing.)

BA 307 3 Credits Personnel Management (3+0) Fall or Spring
Introduction to management principles and personnel practice in industry, analysis of labor-management problems, methods and administration of recruiting, selecting, training, and compensating employees, and labor laws and their applications. Materials fee: $10.00. (Prerequisite: Upper division standing.)

BA 317W 3 Credits Employment Law (3+0) Fall or Spring
Basic personnel and human resource management law, including the major federal laws affecting personnel management and state employment laws including Alaska. (Prerequisites: BA 307 or concurrent enrollment in BA 307, upper division standing.)

BA 325 3 Credits Financial Management (3+0) Fall, Spring
Methods of corporate financial planning and control, asset management, capital budgeting, and financial markets and instruments. (Prerequisites: ACCT 101, ECON 200, STAT 200, ACCT 102, MATH 262, or equivalent, and ECON 227 are also useful, upper division standing.)

BA 326 3 Credits Principles of Advertising (3+0) Spring
Same as JB 326
Advertising including strategy, media use, creation and production of advertisements, and measurement of advertising effectiveness. (Prerequisite: Upper division standing.)

BA 327 3 Credits Collective Bargaining and Labor Relations (3+0) Fall or Spring
Labor law and current management practices in administering collective bargaining agreements, emphasizing recent problems, developments and trends in union management relations, negotiating, arbitration and unfair labor practices. (Prerequisites: BA 307, upper division standing.)

BA 330 4 Credits The Legal Environment of Business (4+0) Fall, Spring
The judicial system, legal processes, administrative procedures, law of torts, contract and agency government regulation of business, business ethics, corporate social responsibility and the uniform commercial code. Materials fee: $10.00. (Prerequisite: Upper division standing or permission of the Business Administration Department Head.)

BA 343 3 Credits Principles of Marketing (3+0) Fall, Spring
Management of a firm's marketing effort focusing on products, distribution, pricing, and promotion to targeted consumers. Practices appropriate to domestic or international, small or large, goods or services, and for-profit or nonprofit organizations included. (Prerequisite: Upper division standing.)

BA 350 3 Credits Introduction to Real Estate and Land Economics (3+0) As Demand Warrants
Examination of personal financial topics such as stock, debt, and real estate investments, insurance, pensions, and credit. Emphasis on optimal combinations of financial products over an individual's life cycle. (Prerequisite: Upper division standing.)

BA 360 3 Credits Production/Operations Management (3+0) Fall, Spring
Production management field with an emphasis on the design and management of efficient manufacturing and operating systems including the process of converting, or manufacturing resources into goods, and activities associated with the production of goods and services. Topics include productivity and quality, product design and development, resource-requirements planning, facility and distribution issues, process technology, automation and job design, materials and inventory management, scheduling and production-activity control, project planning. (Prerequisites: AIS 101, ACCT 102, ECON 200, 227, MATH 262 or equivalents, upper division standing.)

BA 372 3 Credits Management of Hospitality and Tourism Industry (3+0) Fall or Spring
Practices and concepts for successful hotel operation in Alaska including but not limited to management systems, financing of hotels, budgeting and food costing, housekeeping, and front-office management. (Prerequisite: BA 160, upper division standing.)

BA 373 3 Credits Community Tourism Development (3+0) Fall or Spring
A community-based perspective of the organizational, planning, development, funding, and operational need for a successful tourism economy at the local level. (Prerequisite: BA 160, upper division standing. Next offered: Spring 1996.)

BA 390 3 Credits Organizational Theory and Behavior (3+0) Fall, Spring
Behavior of individuals and small groups within organizations, including motivation, leadership, communications, group dynamics, organizational development, and conflict management. (Prerequisite: Upper division standing.)

BA 418 3 Credits Simulation Modeling for Decision Making (3+0) As Demand Warrants
Concepts of computer simulation, probability distributions, modeling principles and the language STELLA from basics to modeling a reasonably complex operating system and making conclusions about the system. (Prerequisites: AIS 101 or equivalent, ECON 227, MATH 262. ACCT 102: BA 360 is recommended, upper division standing.)

BA 423 3 Credits Investment Management (3+0) Fall or Spring
Investing in marketable securities for the individual. Determination of value, analysis of growth, technical analysis, and portfolio management. Materials fee: $10.00. (Prerequisite: BA 325 or equivalent, upper division standing.)

BA 425W 3 Credits Advanced Corporate Financial Problems (3+0) Fall or Spring
Corporate financial problems, planning and controls, and major functions performed by corporate financial managers. (Prerequisite: BA 725, upper division standing.)
BA 430 3 Credits Fall or Spring Current Topics in Finance (3+0) An in-depth consideration of sophisticated and specialized applications of financial management principles. Topics are those most timely to the Alaskan economy. Materials fee: $20.00. (Prerequisites: BA 325, upper division standing.)

BA 436 3 Credits Fall or Spring Consumer Behavior (3+0) Effects of nationality, culture, social class, family, personality, symbolism, and persuasion on consumptive behavior from the marketing point of view. Organizations and practices of corporate buyer behavior included. Qualitative methodologies such as focus groups covered. (Prerequisites: BA 343, upper division standing.)

BA 441 3 Credits Fall or Spring Promotion Management (3+0) Advertising, publicity, sales management, sales promotion, direct marketing, and the interrelationships necessary for effective promotions in domestic or international, small or large, goods or services, and for-profit or nonprofit organizations included. (Prerequisites: BA 343, upper division standing.)

BA 445W 3 Credits Fall or Spring Marketing Research (3+0) Basic processes and tools of marketing research with emphasis on utilization of research findings as an integral part of the managerial decision-making process. Techniques of quantitative data-gathering and analysis to solve a marketing problem. Practices appropriate to domestic or international, small or large, goods or services, and for-profit or nonprofit organizations included. (Prerequisites: BA 343, STAT 200 or equivalent, upper division standing.)

BA 447 3 Credits Fall or Spring Compensation Management (3+0) Theory and practice of wage and salary, benefits and risk management. Planning, administration, auditing, adjusting and budgeting for compensation and risk. (Prerequisites: BA 307, upper division standing.)

BA 453 3 Credits Fall, Spring, Summer Internship in Business Administration (0+var.) A supervised practical work experience to enable students to apply their coursework in a business environment. Admission dependent upon approved sponsorship arrangements. (Prerequisites: Upper division standing and permission of instructor.)

BA 454 3 Credits Fall, Spring Student Investment Fund (3+0) "Hands-on" experience in portfolio management. Students will be making investment and diversification decisions affecting the $100,000 Student Investment Fund. Materials fee: $20.00. (Prerequisite: BA 325, upper division standing.)

BA 455 3 Credits Fall, Spring Portfolio Management (3+0) The second course involved with the "hands-on" management of the $100,000 Student Investment Fund. Students will carry out the duties of the officers of the fund and will be responsible for portfolio diversification and management decisions affecting the fund. Materials fee: $20.00. (Prerequisite: BA 454, upper division standing.)

BA 456W 3 Credits Fall or Spring Small Business Management (3+0) Operations and special problems of the small business with emphasis on both existing firms and new ventures. Starting new businesses, buying going concerns, acquiring and operating franchises, establishing lines of credit, management, legal matters, profit planning, pricing, inventory levels, record systems, tax regulations, and employee supervision. Materials fee: $20.00. (Prerequisites: Completion of all 300 level business administration, accounting and economics common body of knowledge requirements and upper division standing in the School of Management.)

BA 457 3 Credits Fall or Spring Training and Management Development (3+0) Theory and practice of employee training programs, needs assessments, learning theories, instructional design, training techniques and evaluation, management development and career development techniques and practices. (Prerequisites: BA 307, 317, upper division standing.)

BA 460 3 Credits Fall or Spring International Business (3+0) Relationships among nations with particular emphasis on the business, economic, and sociocultural institutions that influence the performance of managers. Formulation of objectives, strategies, and organizational structures within the context of international diversity. (Prerequisites: Upper division standing and all 300 level requirements completed.)

BA 461 3 Credits Fall or Spring International Finance (3+0) Foreign investment projects including foreign capital markets, financing exports, hedging foreign exchange risks, and capital budgeting in an international setting. (Prerequisites: BA 325, upper division standing.)

BA 462O 3 Credits Fall, Spring Corporate Strategy (3+0) An integrative approach to strategy formation and implementation to achieve organization goals. Students will be introduced to theoretical perspectives and associated methodologies directed toward resolving the unstructured problems and opportunities which confront general managers at the highest levels of an organization. (Prerequisites: Completion of all 300 level business administration, accounting and economics common body of knowledge requirements and upper division standing.)

BA 471 3 Credits Fall or Spring Tourism Seminar (3+0) A senior seminar examining all areas of the travel-tourism industry. Lecturer, guest industry speakers, and the case study method are utilized. (Prerequisites: BA 160, upper division standing.)

BA 475 3 Credits As Demand Warrants Transportation and Logistics (3+0) Transportation system components, systems planning, multimode systems, interactions among components and between the transportation system and its environment. Special consideration is given to Alaskan transportation problems by experienced specialists. (Prerequisites: STAT 200, BA 343, upper division standing.)

BA 490 3 Credits Fall or Spring Services Marketing (3+0) Marketing principles in the services sector with special emphasis on such service industries as financial, retailing and tourism. Practices appropriate to domestic or international, small or large, and for-profit or nonprofit organizations included. (Prerequisite: BA 343, upper division standing.)

BA 604 3 Credits Fall or Spring The Legal Environment of Business (3+0)

BA 607 3 Credits Fall or Spring Human Resources Management (3+0)

BA 610 3 Credits Fall or Spring Production/Operations Management (3+0)

BA 617 3 Credits Fall or Spring Organizational Theory and Behavior (3+0)

BA 625 3 Credits Fall or Spring Financial Management (3+0)

BA 643 3 Credits Fall or Spring Marketing Management (3+0)

BA 660 3 Credits Fall or Spring Seminar in Production Management (3+0)

BA 670 3 Credits As Demand Warrants Seminar in Multinational Business Management (3+0)

BA 675 3 Credits Fall or Spring Practical Quantitative Methods for Business Decision Making (3+0) (Same as ECON 675)

BA 680 3 Credits Fall or Spring Seminar in Finance (3+0)

BA 683 3 Credits Fall or Spring Seminar in Marketing (3+0)

BA 685 3 Credits As Demand Warrants International Finance (3+0)

BA 690 3 Credits Fall or Spring Corporate Strategy (3+0)

BA 691 3 Credits Fall or Spring Advanced Topics in Business (3+0)

Chemistry

CHEM 075 3 Credits As Demand Warrants Introduction to Chemical Sciences (3+0) Units of measurement, atomic and molecular structure, chemical bonding, metabolism, radioactivity, oxidation-reduction reactions, solutions, acids and bases. For the non-science major.
CHEM 100X 4 Credits Fall, Spring
Chemistry and the Modern World (3+3) n
Fundamentals of chemistry with an emphasis on the impact of chemistry and the chemical industry on society and the environment. May be used to fulfill part of the natural science requirement. For non-science majors. Laboratory fee: $30.00.

CHEM 103X 4 Credits Fall
Basic General Chemistry (3+3) n
Fundamentals of chemistry including historical and descriptive aspects as well as basic mathematical concepts. Fulfills the laboratory part of the natural science requirement and prepares the student for CHEM 105X. Laboratory fee: $30.00. (Prerequisite: High school algebra.)

CHEM 104X 4 Credits Spring
Beginnings in Biochemistry:
A Survey of Organic Chemistry and Biochemistry (3+3) n
Fundamentals of chemistry as applied to biological systems. Bridges the gap between a general chemistry course and biochemical concepts of other health-related sciences. Recommended for health-science degree candidates and non-science majors interested in the central role of chemistry in life. May be used to meet the general laboratory science requirement or for preparation for CHEM 105X. Laboratory fee: $30.00. (Prerequisite: CHEM 103X or consent of instructor.)

CHEM 105X 4 Credits Fall, Spring
CHEM 106X 4 Credits Fall, Spring
CHEM 107X-106X, together, constitute the standard one-year engineering and science-major general chemistry course with laboratory. CHEM 105X Measurement, calculations, atomic and molecular structure, chemical reactions and related energy changes. CHEM 106X: Reaction kinetics, equilibrium (including acids and bases), nuclear chemistry, electrochemistry, chemistry of the elements and an introduction to organic and biochemistry. Laboratory fee: $30.00. (Prerequisites: For CHEM 105X: high school algebra, high school chemistry or CHEM 103X, or consent of instructor. For CHEM 106X: A grade of "C" or better in CHEM 105X.)

CHEM 202 3 Credits Spring
Basic Inorganic Chemistry (2+3) n
Inorganic chemical properties and reactions with special emphasis on the environment. Laboratory includes synthesis, characterization and analysis. Laboratory fee: $30.00. (Prerequisite: CHEM 106X or permission of instructor.)

CHEM 212 3 Credits Fall
Chemical Equilibrium and Analysis (3+0) n
Aqueous chemical equilibrium as applied to chemical analysis, separations, spectrophotometry, potentiometry, and factors considered in the analytical approach. (Prerequisites: CHEM 106X; MATH 107 or equivalent.)

CHEM 213 1 Credit Fall
Quantitative Analysis Laboratory (0+3) n
Laboratory training in quantitative chemical manipulation, including calibration, standardization, analysis using titrimetric and instrumental methods. Laboratory fee: $10.00. (Prerequisites: CHEM 106X and MATH 107.)

CHEM 321 3 Credits Fall, Spring
CHEM 322 3 Credits Fall, Spring
Organic Chemistry (3+0) n
A systematic study of the more important functional groups of organic compounds, including their mechanisms of reaction, methods of synthesis, and physical and spectroscopic properties. (Prerequisite: CHEM 106X for CHEM 321; CHEM 321 with a "C" of better for CHEM 322; or permission of instructor.)

CHEM 324 3 Credits Fall, Spring
Organic Laboratory (1+8) n
A laboratory designed to illustrate modern techniques of isolation, purification, analysis, and structure determination of covalent, principally organic, compounds. Laboratory fee: $30.00. (Corequisite: CHEM 322.)

CHEM 331 3 Credits Fall
CHEM 332 3 Credits Spring
CHEM 331: Principles of thermodynamics with applications to phase equilibria, solutions, chemical equilibrium and electrochemistry. CHEM 332: Kinetic theory of gases, chemical kinetics, atomic and molecular structure, and spectroscopy. (Prerequisites: CHEM 106X; MATH 202, PHYS 104 or 212 or permission of the instructor; CHEM 331 for CHEM 332.)

CHEM 402 3 Credits Spring
Inorganic Chemistry (3+0) n
Application of physical chemistry to the study of the elements and their compounds, Bonding, periodic properties and coordination chemistry. (Prerequisite or corequisite: CHEM 332.)

CHEM 412 3 Credits Fall
Instrumental Analytical Methods (3+0) n
Theory, capabilities and limitations of instruments used in chemical analysis. Subjects include: chromatography, mass spectrometry, potentiometry, optical spectroscopy, and nuclear magnetic resonance. (Prerequisites: CHEM 212 and 213; Corequisite: CHEM 331.)

CHEM 413W 3 Credits Spring
Analytical Instrumental Laboratory (1+6) n
Quantitative instrumental measurements with atomic and molecular absorption spectrometry, and liquid chromatography and potentiometry. Laboratory fee: $30.00. (Prerequisites: CHEM 212, 331, 412.)

CHEM 434W 3 Credits Fall, Spring
Instrumental Methods in Physical Chemistry (1+6) n
A modern laboratory course with three major components: 1) experiments related to concepts learned in CHEM 331 and 332 including, but not limited to, spectroscopy, conductance, and diffusion; 2) computer use in problem solving, data analysis, and word process; and 3) technical writing with emphasis on preparation of papers for publication. Laboratory fee: $30.00. (Corequisite: CHEM 332.)

CHEM 445 4 Credits Fall
Molecular Evolution (3+3)
(Same as CHEM 645 and BIOL 445 and 645)
The study of structure, function and evolution of hereditary molecules (nucleic acids). Laboratory fee: $30.00. (Prerequisite: BIOL 262.)

CHEM 451 3 Credits Fall
General Biochemistry (3+0)
Chemistry of biomolecules with emphasis on the bioenergetics and control of metabolic pathways via regulation of specific enzymes. (Prerequisites: CHEM 322; CHEM 331 recommended or permission of the instructor.)

CHEM 452 3 Credits Spring
Biochemistry Laboratory (1+6)
Experimental manipulation and observation of enzymes, proteins, and nucleic acids, using chromatographic, spectroscopic, electrophoretic, and other techniques. Laboratory fee: $30.00. (Prerequisites: CHEM 242 and 451.)

CHEM 453 3 Credits Alternate Fall
Molecular Biology in the Real World (3+0)
(Same as CHEM 653 and BIOL 653 and 653)
Provides in-depth coverage of eukaryotic and prokaryotic gene function, including the applications of recombinant DNA technology to the biological sciences. (Prerequisite: BIOL 262, CHEM 321 or BIOL 303. Next offered: 1995-96.)

CHEM 4820 1 Credit Fall, Spring
Seminar (2+0)
Introduction to the techniques and style of technical oral presentation generally accepted by professional chemists. Class will meet two hours per week, the first hour in closed session, the second, open to the public. Instruction in presentation techniques; observe and critique presentations by graduate students, chemistry faculty, and their peers; preparation of a 40 minute presentation to be delivered twice, first, to others in the course in the closed session for critiquing and suggestions for improvement and later, in the open seminar for evaluation by all.

CHEM 488 0-6 Credits Alternate Fall
Undergraduate Chemistry and Biochemistry Research (0-6+0)
Advanced research topics from outside the usual undergraduate laboratory offerings. The student will be required to make presentations and turn in a final report. Research areas range from atmospheric chemistry to molecular biology. A substantial level of chemistry or biochemistry background is assumed.

CHEM 602 3 Credits Alternate Fall
Advanced Inorganic Chemistry (3+0)

CHEM 606 3 Credits Alternate Fall
Atmospheric Chemistry (3+0)

CHEM 608 3 Credits Alternate Spring
Global Chemical Cycles (3+0)

CHEM 612 3 Credits Alternate Fall
Environmental Analytical Chemistry (3+0)

CHEM 621 3 Credits Alternate Fall
Enzymology and Bio-Organic Chemistry (3+0)

CHEM 622 3 Credits Alternate Fall
Environmental Organic Chemistry (3+0)

CHEM 631 3 Credits Alternate Spring
Environmental Physical Chemistry (3+0)

CHEM 632 3 Credits Alternate Spring
Molecular Spectroscopy (3+0)
Civil Engineering

A $25.00 per semester student computing facility user fee is assessed for School of Engineering courses. This fee is in addition to any lab/material fees.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 112</td>
<td>3</td>
<td>Elementary Surveying (2+3) Spring</td>
</tr>
<tr>
<td>CE 326W</td>
<td>4</td>
<td>Introduction to Geotechnical Engineering (3+3) Fall, Spring</td>
</tr>
<tr>
<td>CE 334</td>
<td>3</td>
<td>Properties of Materials (2+3) Fall</td>
</tr>
<tr>
<td>CE 344</td>
<td>3</td>
<td>Water Resources Engineering (3+0) Fall</td>
</tr>
<tr>
<td>CE 400</td>
<td>0</td>
<td>EIT Exam Fall, Spring</td>
</tr>
<tr>
<td>CE 402</td>
<td>3</td>
<td>Introduction to Transportation Engineering (3+0) Fall</td>
</tr>
<tr>
<td>CE 403</td>
<td>3</td>
<td>Traffic Engineering (2+3) Fall</td>
</tr>
<tr>
<td>CE 404</td>
<td>3</td>
<td>Highway Engineering (2+3) Spring</td>
</tr>
<tr>
<td>CE 412</td>
<td>3</td>
<td>Elements of Photogrammetry (2+3) Spring</td>
</tr>
<tr>
<td>CE 415</td>
<td>3</td>
<td>Advanced Surveying (2+3) Fall</td>
</tr>
<tr>
<td>CE 422</td>
<td>3</td>
<td>Foundation Engineering (3+6) Spring</td>
</tr>
<tr>
<td>CE 423</td>
<td>3</td>
<td>Introduction to Earthquake Engineering (3+4) Spring</td>
</tr>
<tr>
<td>CE 425</td>
<td>3</td>
<td>Advanced Soil Mechanics (2+3) Fall</td>
</tr>
<tr>
<td>CE 431</td>
<td>3</td>
<td>Structural Engineering I (2+3) Spring</td>
</tr>
<tr>
<td>CE 432</td>
<td>3</td>
<td>Structural Engineering II (2+3) Fall</td>
</tr>
<tr>
<td>CE 433</td>
<td>3</td>
<td>Reinforced Concrete Design (2+3) Fall</td>
</tr>
<tr>
<td>CE 434</td>
<td>3</td>
<td>Timber Design (2+3) Spring</td>
</tr>
<tr>
<td>CE 436</td>
<td>3</td>
<td>Structural Steel Design (2+3) Spring</td>
</tr>
</tbody>
</table>
CE 438W.O  3 Credits  Spring
Design of Engineered Systems (3+0)
System design principles for large-scale constructed facilities. Application of ethics, liability and legal principles to professional practice. Emphasis on teamwork and leadership. (Prerequisite: Last year of civil engineering B.S. program.)

CE 441  4 Credits  Spring
Environmental Engineering (3+3)
Fundamentals of environmental engineering including theory and application of water and wastewater engineering practice. Conservation, quality, treatment, and distribution of water supply. Wastewater characteristics, collection, treatment, and disposal. Solid waste management and air pollution control. Laboratory fee: $10.00. (Prerequisite: ES 341 or permission of instructor.)

CE 442  3 Credits  Fall
Environmental Engineering II (3+0)
Advanced topics involving environmental law and health, air pollution, solid waste management, toxic and hazardous wastes, animal waste management, noise pollution, water quality modeling, wastewater collection systems, chemical/physical processes, theory of sedimentation, disinfection, biological processes, on site treatment, sludge management, advanced waste treatment and other. (Prerequisites: CE 441 and junior standing in civil engineering.)

CE 445  3 Credits  Alternate Spring
Engineering Hydrology (2+3)
Design and analysis; extended coverage of hydrologic concepts from CE 344. Precipitation, evaporation analysis; groundwater hydraulics; runoff analysis and prediction; statistical hydrology; application of simulation models. (Prerequisite: CE 344. Next offered: 1995-96.)

CE 446  3 Credits  Alternate Spring
Hydraulic Engineering (2+3)
Hydraulic design and analysis. Review of principles of fluid mechanics, pipe network modeling, hydraulic systems (pumps and turbines), steady and unsteady flow in open channels, hydraulic structures, simultude. (Prerequisite: CE 344. Next offered: 1995-96.)

CE 470  1 Credit  Fall, Spring
Civil Engineering Internship (0+3)
Supervised work experience in engineering organizations. Assignments individually arranged with cooperating organizations and agencies. (Prerequisites: Senior standing, permission of department coordinator.)

CE 603  3 Credits  Fall, Spring
Arctic Engineering (3+0)

CE 605  3 Credits  Alternate Spring
Pavement Design (3+0)

CE 617  3 Credits  Alternate Fall
Control Surveys (3+0)

CE 620  3 Credits  Alternate Spring
Civil Engineering Construction (3+0)

CE 622  3 Credits  Alternate Fall
Foundations and Retaining Structures (3+0)

CE 625  3 Credits  Alternate Fall
Soil Stabilization (3+0)

CE 626  3 Credits  Alternate Fall
Applications in Geotechnical Engineering (3+0)

CE 627  3 Credits  Spring
Earthquake Engineering I (3+0)

CE 628  3 Credits  Alternate Fall
Soil Behavior Under Load (3+0)

CE 631  3 Credits  Fall
Advanced Structural Analysis (3+0)

CE 632  3 Credits  Alternate Fall
Advanced Structural Design (3+0)

CE 637  3 Credits  Fall
Earthquake Engineering II (3+0)

CE 661  3 Credits  Alternate Fall
Advanced Water Resources Engineering (3+0)

CE 662  3 Credits  Alternate Spring
Open Channel and River Engineering (3+0)

CE 663  3 Credits  Alternate Spring
Groundwater Dynamics (3+0)

CE 676  3 Credits  Alternate Fall
Coastal Engineering (3+0)

CE 681  3 Credits  Alternate Spring
Frozen Ground Engineering (3+0)

CE 682  3 Credits  Alternate Years
Ice Engineering (3+0)

CE 683  3 Credits  Alternate Fall
Arctic Hydrology and Hydraulic Engineering (3+0)

CE 684  3 Credits  Alternate Years
Arctic Utility Distribution (3+0)

CE 685  3 Credits  Alternate Spring
Topics in Frozen Ground Engineering (3+0)

College Student Personnel Administration

CSP 651  3 Credits  As Demand Warrants
Current Issues in Student Personnel Administration (3+0)

CSP 655  3 Credits  As Demand Warrants
Practicum in Student Personnel Administration (1+6)

CSP 665  3 Credits  As Demand Warrants
Practicum in Counseling: Higher Education/Agency (0+9)
(Same as COUN 665)

Communication

Due to enrollment pressures, it is Department of Communication policy to drop from the class roll students who fail to attend the first two meetings of a basic course (COMM 131X and 141X) even if they have preregistered.

COMM 131X  3 Credits  Fall, Spring
Fundamentals of Oral Communication: Group Context (3+0)
The communication process, focusing on listening, perception, verbal and nonverbal communication, and organizing material. Emphasizes increased understanding of and effective performance in small group communication situations.

COMM 141X  3 Credits  Fall, Spring
Fundamentals of Oral Communication: Public Context (3+0)
The communication process, focusing on listening, perception, verbal and nonverbal communication, and organizing material. Emphasizes increased understanding of and effective performance in public speaking situations.

COMM 180  3 Credits  Fall
Introduction to Human Communication (3+0)
Critical thinking about fundamental concepts in human communication in interpersonal, group, public, organizational, and intercultural settings. Introduction to inquiry into human communication as a social science.

COMM 222  3 Credits  Alternate Years
Fundamentals of Interpersonal Communication (3+0)
The cultural and social processes that are necessary for successful understanding and participation in face-to-face interaction. Introduction to the basic concepts and terminology used in discussion of dyadic interaction. Presented at an appropriate level for any student interested in improving interpersonal communication. Prepares students for further courses in communication that address other contexts. (Next offered: 1995-96.)

COMM 231  3 Credits  Alternate Years
Business and Professional Communication (3+0)
Designed to provide the student with practical applications in communication in organizations. Includes superior-subordinate communication, conference and meeting management, oral presentation of written proposals, and the examination of information flow through organizational networks. (Prerequisite: Any 100 level oral communication course or permission of instructor. Next offered: 1995-96.)

COMM 251  3 Credits  Alternate Years
Argumentation and Conflict Communication (3+0)
The study of argumentativeness as an alternative to aggressive communication. Conflict and cooperation as expressed through human communication behavior will be examined through the current approaches to argumentation and debate. (Prerequisite: Any 100 level communication course or permission of instructor. Next offered: 1996-97.)

COMM 280  3 Credits  Spring
Communication and Diversity (3+0)
Provides students with a cognitive and experiential foundation for understanding how the communication process works in the context of diversity. Includes an in-depth examination of those processes and products of processes that lead communicators to devalue differences in one another.
COMM 320 3 Credits  
Alternate Years  
Communication and Language (3+0)  
Examination of the nature of language and its place in human communication, with special attention to the creation of meaning in conversation. (Prerequisite: Any lower division communication course or permission of instructor. Next offered: 1995-96.)

COMM 321 3 Credits  
Alternate Years  
Nonverbal Communication (3+0)  
Non-linguistic behavior in human communication, including consideration of space, physical environment, physical appearance and dress, kinesics, facial expression, and non-linguistic vocal behavior. (Prerequisite: Any lower division communication course or permission of instructor. Next offered: 1996-97.)

COMM 330 3 Credits  
Alternate Years  
Intercultural Communication (3+0)  
The nature and the sources of problems in communication that may arise when persons with different cultural backgrounds interact. Emphasis on problems in intercultural communication in Alaska. (Prerequisite: Any lower division communication course or permission of instructor. Next offered: 1996-97.)

COMM 331O 3 Credits  
Alternate Years  
Advanced Group Communication (3+0)  
Current research and theory in intergroup and intragroup relations. Topics include the study of leadership, group power, group structure, participation, and conflict. (Prerequisite: Any 100 level communication course or permission of instructor. Next offered: 1995-96.)

COMM 335O 3 Credits  
Alternate Years  
Organizational Communication (3+0)  
Examines current theoretical and methodological approaches underlying the construction of organizations via the communication process. Includes functional (message flows, role and network analysis) as well as interpretive (metaphor/narrative and organizational culture) approaches to the study of organizational communication. (Prerequisite: Completion of one lower division communication course or permission of instructor. Next offered: 1996-97.)

COMM 351 3 Credits  
Alternate Years  
Gender and Communication (3+0)  
Basic socialization differences exist in the communication practices of women and men in every culture, resulting in differing cultural constructions of male and female gender. Those differences are addressed in the interpersonal, organizational, and cultural contexts. Exploration of cultural female/male dichotomy as well as individual similarities. (Prerequisite: Any lower division communication course or permission of the instructor. Next offered: 1995-96.)

COMM 352 3 Credits  
Alternate Years  
Family Communication (3+0)  
Exploration of the functions of communication in marriage and the family, sequences and patterns of family communication, family communication as a continual process of coping with dialectical tensions, and the complexity of changing family life in Western societies. (Prerequisite: Any lower division communication course or permission of instructor. Next offered: 1995-96.)

COMM 401 3 Credits  
Alternate Years  
Communication Research Methods (3+0)  
Quantitative and qualitative research methodologies employed in the conduct of research on communication phenomena. (Prerequisite: Any 300 level communication courses or permission of instructor. Next offered: 1995-96.)

COMM 422W 3 Credits  
Alternate Years  
Advanced Interpersonal Communication (3+0)  
Approaches to interpersonal communication. Emphasis on dialogue/transactive communication within two-person situations. In-depth exploration of theoretical materials related to relational interchanges. (Prerequisite: COMM 222 or permission of instructor. Next offered: 1996-97.)

COMM 425W 3 Credits  
Alternate Years  
Communication Theory (3+0)  
Theories of human communication, as well as of the nature of inquiry into human communication phenomena. Issues include the nature of communication as a discipline, critical and scientific inquiry, and major paradigms or perspectives within which communication theories are created. (Prerequisite: Any 300 level communication course or permission of the instructor. Next offered: 1996-97.)

COMM 441 3 Credits  
Alternate Years  
Persuasion (3+0)  
Examination of communication situations which involve attempts to modify the beliefs, attitudes, values, intentions, or behaviors of another individual or group of individuals. Explores the process, methods, and ethics of attempts to affect change via persuasive communication. (Prerequisite: Any 300 level communication course or permission of the instructor. Next offered: 1996-97.)

COMM 462W 3 Credits  
Alternate Years  
Communication in Health Contexts (3+0)  
Health communication as an established context for communication study will be explored. Problems in health communication will be examined as well as how those problems are exacerbated by the various matters of diversity, language, and setting. Communication between health care professionals, between health care providers and health care consumers, between health care facilities and communities, and the legal perspectives of health communication will be topical. (Prerequisite: Any 300 level communication course or permission of the instructor. Next offered: 1995-96.)

COMM 475 3 Credits  
Alternate Years  
Applied Communication in Training and Development (3+0)  
Applies communication theory and research to organizational settings. Includes the identification and assessment of problems and opportunities that would benefit from the application of communication interventions including training, development and transformation technologies. (Prerequisite: Any 300 level communication course or permission of instructor. Next offered: 1997-98.)

COMM 482 3 Credits  
Alternate Years  
Seminar in Communication (3+0)  
Current trends and theory in key areas of communication are examined. Students concentrate research in their specialty area while examining selected topics in all the areas. (Prerequisite: Any 300 level communication course or permission of instructor. Next offered: 1995-96.)

Prerequisite for all 600-level communication courses is admission to the M.A. in Professional Communication program or permission of the instructor.

COMM 601 3 Credits  
Alternate Years  
Communication Methodologies (3+0)  
(Same as JB 601)

COMM 622 3 Credits  
Alternate Years  
Interpersonal Interaction (3+0)

COMM 625 3 Credits  
Communication Theory (3+0)

COMM 631 3 Credits  
Teambuilding (3+0)

COMM 635 3 Credits  
Organizational Culture and Communication (3+0)

COMM 675 3 Credits  
Training and Development Communication (3+0)

COMM 680 3 Credits  
Communication and Diversity in the Professional World (3+0)

COMM 682 3 Credits  
Seminar in Communication (3+0)

COMM 685 3 Credits  
Teaching College Communication (3+0)

**Community Health**

**CHP 082** 2 Credits  
As Demand Warrants  
Community Health Aide Pre-session I  
Assist the newly employed Community Health Aide to function in the village clinic until he/she enters Session I. Patient evaluation, use of the manual, reporting patients, medicines and lab tests. Emergency care is included if students have not had emergency trauma training. (Prerequisite: Employment by the health corporation as a community health aide or permission of instructor.)

**CHP 131** 8 Credits  
As Demand Warrants  
Community Health Aide, Session I  
Introduction to providing village primary health care services with remote supervision of a physician. Topics include CHP standard of care, use of the CHA/P Manual, history-taking and physical exam, lab tests, reporting to the physician, medical charting and medication administration. Supervised clinical experiences prepare the student to conduct patient evaluation of common village health problems of children and adults. Introduction to human anatomy and function, wellness and disease concepts, crisis intervention and emergency care. A 200-hour field component at the students' village clinic follows the didactic program. (Prerequisite: Employed as CHA by a health corporation or permission of the instruction.)
CHP 132 8 Credits As Demand Warrants
Community Health Aide, Session II
Reinforces the problem-oriented patient encounter process. Includes patient education, introduction to prenatal and well child care, sexually transmitted diseases, HIV, substance abuse, mental illness and death and dying issues. Session I material and emergency care are reinforced and expanded upon. A 200 hour field component at the students' village clinic follows the didactic program. (Prerequisite: CHP 131.)

CHP 133 8 Credits As Demand Warrants
Community Health Aide, Session III
Session II content reinforced and expanded upon. Additional topics include prenatal care, family planning, fetal alcohol syndrome, emergency delivery techniques, newborn and well child care including immunizations, nutrition, dental health, adult health surveillance, family violence and sexual abuse/rape and clinic management. A 200 hour field component at the students' village clinic follows the didactic program. (Prerequisite: CHP 132.)

CHP 134 8 Credits As Demand Warrants
Community Health Aide, Session IV
Common patient problems within the body systems are reviewed with a focus on assessment skills and management plans. Previous session content is reviewed. Follow-up care for patients with chronic illness, injury prevention, tuberculosis, cancer, environmental health, post partum care, adolescent care and elder adult elder care. A 200 hour field component at the students' village clinic follows the didactic program. (Prerequisite: CHP 133.)

CHP 203 1-3 Credits As Demand Warrants
Clinical Update for Community Health Practitioners
Review, update and reinforcement of knowledge and skills taught in CHP 131, 132, 133 and 134. Emphasis is on patient evaluation skills, use of the manual, patient treatment plan, medicines, prenatal care, well-child care, chronic patient care and emergency care. Clinical training is provided. (Prerequisite: CHP 134.)

CHP 206 1-3 Credits As Demand Warrants
Mental Health and Substance Abuse
Instruction in listening skills, drug therapy and family dynamics for crisis intervention, long term care in the area of mental health, and substance abuse. Other topics include the mentally ill patient, the substance abuser, the co-dependent, and prevention activities for the village. (Prerequisite: CHP 134 or permission of the instructor.)

CHP 207 1-3 Credits As Demand Warrants
Maternal and Infant Health
Review of the anatomy of the reproductive system, family planning, pregnancy, fetal development, prenatal care, prenatal education, emergency delivery, postpartum care for mother and baby, and well-child evaluations and immunizations. (Prerequisite: CHP 134 or permission of the instructor.)

CHP 208 1-3 Credits As Demand Warrants
Communicable Diseases
Expands concepts in relation to diagnosis, management and prevention of sexually transmitted diseases. Skills taught include male and female genitalia exam, pelvic exam, pug smear, gonorrhea culture and chlamydia culture. Prevention and patient education are emphasized. (Prerequisite: CHP 134 or permission of the instructor.)

CHP 211 1-3 Credit As Demand Warrants
Health Education
Methods and philosophy of health education, use and sources of audiovisual materials, presentation planning and participation in school and community health programs are included. A variety of teaching methods including role playing for individual and group presentations permit CHPs to practice their health education knowledge and skills. (Prerequisite: CHP 134 or permission of the instructor.)

CHP 212 1-3 Credits As Demand Warrants
Diabetes: Primary Prevention and Village Medical Care
Pathophysiology, primary prevention and follow-up treatment of the disease diabetes. Topics include the problem of Type II diabetes in rural Alaska, CHP role in the village health care system, Type I and Type II diabetes, primary prevention of Type II diabetes, village medical care and referral, patient education, emergency care and diabetes medications. The clinical training portion of the course is available for Community Health Aides/Practitioners only. (Prerequisites: CHP 134 or permission of the instructor.)

CHP 215 2 Credits As Demand Warrants
Death and Dying (2+0)
Focusing on contemporary primary care issues relating to death and dying. Improving individual coping skills in loss and grief situations. Topics include theories of grief and loss, care of the terminally ill patient, suicide, euthanasia, traumatic death and neonatal death. Cultural perspectives on dying, body preparation, burial rites, advanced directives, death certificates and legal issues reviewed. (Prerequisite: CHP 135 or permission of instructor. Next offered: Fall 1994.)

Computer Applications
A $25 per semester student computing facility user fee will be assessed for any ABUS, CAPS or OMT course of 2 credits or more at the 100-level of higher. This fee is in addition to any lab/materials fee.

CAPS 100 1 Credit As Demand Warrants
Introduction to Personal Computers (1+0)
Overview of the three most popular uses of the personal computer: word processing, data base management and electronic spreadsheets. Provides a basic understanding of how the computer works and how it can aid the student at school and work. Materials fee: $10.00.

CAPS 103 1-3 Credits As Demand Warrants
Computer Survey (1+0 to 3+0)
An introduction to the world of computers emphasizing microcomputers. Provides computer terminology and how to use computers as a tool to make work easier and to extend the reach of the mind. Materials fee: $10.00.

CAPS 111 2 Credits As Demand Warrants
Computer Software for Beginners (2+0)
Overview of computer hardware and software. Demonstrations and hands-on experience with telecommunications, word-processing, spreadsheets, data base management and tutorial software. Materials fee: $10.00.

CAPS 122 1-2 Credits As Demand Warrants
Computer Software Application (1+0 to 2+0)
Extensive coverage of a specific microcomputer application. Materials fee: $10.00.

CAPS 126 1-3 Credits As Demand Warrants
Microcomputer Operating Systems (2+0)
Use, setup, and configuration of a microcomputer operating system including basic and technical topics. Materials fee: $10.00.

CAPS 135 1-3 Credits As Demand Warrants
Microcomputer Spreadsheets (1+3+0)
Create, format and revise spreadsheets as well as use a spreadsheet to create graphs and as a database. Includes brief introduction to the Microcomputer Operating System for students who have no previous computer experience. Materials fee: $10.00.

CAPS 150 3 Credits As Demand Warrants
Computer Business Applications (3+0)
Using microcomputers in a business. Includes word processing, spreadsheets, data bases, graphics, project management and telecommunications. Use of each application in a business environment will be shown. No previous experience necessary. Materials fee: $10.00.

CAPS 160 1-3 Credit
Fall, Spring
Microcomputer Word Processing (1+3-0)
For students new to word processing. Learn to create, format, and revise documents as well as to create new letters, forms, and to desktop publishing; brief introduction to the Microcomputer Operating System for students who have not used a computer before. Materials fee: $10.00.

CAPS 182 2 Credits As Demand Warrants
Introduction to Microcomputers in Small Businesses (2+0)
Microcomputers used in small business or professional practice by owners or employees. Overview of computers, uses and means of evaluation when purchasing equipment. Does not satisfy certificate or degree requirements. Materials fee: $10.00.

CAPS 190 3 Credits As Demand Warrants
Integrated Software (3+0)
Study of microcomputer applications that integrate multiple tasks into one computer application (Microsoft Works, Apple Works, Framework, Symphony, etc.), including individual modules of an integrated application, combining data in an integrated program, and application of integrated software for specific projects. Materials fee: $10.00.

CAPS 201 1-3 Credits As Demand Warrants
Microcomputer Applications: Special Topics (1+3-0)
Use and application of specific software applications. Materials fee: $10.00. (Prerequisite: Basic computer operating system skills.)
Computer Science

CS 101  3 Credits Fall, Spring
Computers and Society (3+0)
Overview of computing machines and automatic data processing. Interaction between social institutions and automated decision making. Introduction to business applications software and electronic mail. Some programming for understanding, not for skill development. Materials fee: $10.00. (Prerequisite: Two years of high school mathematics, including at least one year of algebra.)

CS 102  3 Credits Fall, Spring
Advanced Computer Graphics (3+0)
Design and implementation of visual interfaces using object oriented programming. Graphics input and output hardware, display programming, 2D transformations, hidden line and surface elimination, approximation techniques for curve and surface representation. Materials fee: $10.00. (Prerequisites: CS 281, CS 311, Math 200 and MATH 314.)

CS 103  3 Credits Fall, Spring
Introduction to Computer Programming (2+3)
Programming for non-majors and for those computer science students without the background for CS 201. Concepts of structured programming and algorithm design within the syntax of the PASCAL programming language. Materials fee: $10.00. (Prerequisite: One year of high school algebra.)

CS 201  3 Credits Fall, Spring
Computer Science I and II (3+0)
The discipline of computer science including problem solving, algorithm development, structured programming, top-down design, good programming style, object oriented programming, and elementary data structures. Concepts implemented with extensive programming experience in a structured language and with a group programming project. Materials fee: $10.00. (Prerequisites: For CS 201: one year high school level programming, ES 201 or CS 103 and mathematics placement at the 200 level. For CS 202: CS 201.)

CS 205  3 Credits Alternate Spring
Programming in C (3+0)
The C programming language for students with some experience in other programming languages such as PASCAL or FORTRAN. (Prerequisite: One year high school programming, CS 103, 201, or ES 201. Next offered: 1996-97.)

CS 261  3 Credits Fall
Programming in FORTRAN (3+0)
Syntax and principles of FORTRAN. Applications to problems in science and engineering including the solution of linear and non-linear equations, interpolation, numerical integration, Monte Carlo techniques and the use of mathematical subroutine libraries. (Prerequisites: MATH 200 or concurrent enrollment in MATH 201, previous programming experience or consent of instructor.)

CS 301  3 Credits Fall
Assembly Language Programming (3+0)
Organization of computer memories, I/O, and control. Digital representation of data. Symbolic coding, instructions, addressing modes, program segmentation, linkage, macros, and subroutines. (Prerequisite: CS 201.)

CS 302  3 Credits As Demand Warrants
Systems Programming (3+0)
Advanced assembly language programming including privileged instructions and system services. Applications to asynchronous I/O, process control and communication, device drivers and file management. (Prerequisite: CS 301. Next offered: 1995-96.)

CS 311  3 Credits Fall
Data Structures and Algorithms (3+0)
Data structures and algorithms for their manipulation. Object oriented programming, arrays, tables, stacks, queues, trees, linked lists, sorting, searching, and hashing. (Prerequisite: CS 202.)

CS 321  3 Credits Spring
Operating Systems (3+0)
Functions of files and operating systems. Review of required architectural features. The PROCESS concept. Storage management, access methods and control, interrupt processing, scheduling algorithms, file organization and management, and resource accounting. (Prerequisite: CS 301.)

CS 331  3 Credits Spring
Programming Languages (3+0)
Syntax and semantics of widely differing programming languages. Syntax specification, block structure, binding, data structures, operators, and control structures. Comparison of several languages such as ALGOL, LISP, SNOBOL, and APL. (Prerequisite: CS 311.)

CS 381  3 Credits Fall
Advanced Computer Graphics (3+0)
Design and implementation of visual interfaces using object oriented programming. Graphics input and output hardware, display programming, 2D transformations, hidden line and surface elimination, approximation techniques for curve and surface representation. Materials fee: $10.00. (Prerequisites: CS 281, CS 311, Math 200 and MATH 314.)
CS 402W.O 3 Credits

Senior Project and Professional Practice (3+0)

Students work on group projects in a simulated computer industry environment and produce appropriate documentation and reports. Nature, ethics, and legal considerations of the computer science profession discussed. Additional topics include project management, design methodologies, technical presentation, human-machine interface, and programming team interactions. Materials fee: $15.00. (Prerequisites: CS 311, 321 and senior standing.)

Spring

CS 405 3 Credits

Introduction to Artificial Intelligence (3+0)

Examine diverse branches of AI placing AI in larger context of computer science and software engineering. Knowledge representation formalism and search technology. Programming methodologies; procedural systems such as expert systems and blackboard systems and non-procedural systems such as neural networks. Software engineering aspects of problem selection, knowledge acquisition, validation and verification. Individual projects. Materials fee: $10.00. (Prerequisite: CS 311 or permission of the instructor. Next offered 1995-96.)

Alternate Spring

CS 411 3 Credits

Introduction to Artificial Intelligence (3+0)

Examine diverse branches of AI placing AI in larger context of computer science and software engineering. Knowledge representation formalism and search technology. Programming methodologies; procedural systems such as expert systems and blackboard systems and non-procedural systems such as neural networks. Software engineering aspects of problem selection, knowledge acquisition, validation and verification. Individual projects. Materials fee: $10.00. (Prerequisite: CS 311 or permission of the instructor. Next offered 1995-96.)

Alternate Fall

CS 412 3 Credits

Operating Systems Implementation (3+0)

Design and implementation of major phases of high level language translators including scanning, parsing, translation, code generation and optimization. Students develop a compiler for a language in a group project which emphasizes good software engineering practices in structured design, testing and documentation. (Prerequisite: CS 331. Next offered: 1996-97.)

Alternate Fall

CS 413W 3 Credits

Programming Language Implementation (3+0)

Design and implementation of major phases of high level language translators including scanning, parsing, translation, code generation and optimization. Students develop a compiler for a language in a group project which emphasizes good software engineering practices in structured design, testing and documentation. (Prerequisite: CS 331. Next offered: 1996-97.)

Alternate Fall

CS 441 3 Credits

Computer Communication and Networks (3+0)


Alternate Fall

CS 442 3 Credits

Software Engineering (3+0)

Software development as an engineering discipline. Project planning, proposal writing, and management. Software requirements, design, implementation, test and documentation. Additional topics from object-oriented design, real time design, and validation. (Prerequisites: CS 311 and CS 321 or permission of instructor.)

Summer

CS 480 3 Credits

Advanced Computer Graphics (3+0)

Creation of 3D computer-generated images. Graphics data structures, geometric transformations, hidden surface techniques, color theory, lighting and shading algorithms, curve and surface representations, visual modeling of physical phenomena. Materials fee: $10.00. (Prerequisites: CS 381 and MATH 314.)

Spring
Cross Cultural Communication

CCC 052 2 Credits Spring
Alternative Approaches to Math: Basic College Math (2+0)
(3 credits as DEVM 052)
Basic college mathematics: operations with percents, decimals, fractions and signed numbers, translating word problems, introduction to algebra and geometry, using alternative teaching styles tailored to the specific cultural backgrounds of the students. (Prerequisites: Appropriate placement test scores. Students must meet federal eligibility requirements.)

CCC 062 3 Credits Fall, Spring
Alternative Approaches to Math: Elementary Algebra (3+0)
(3 credits as DEVM 062)
Elementary algebra. Algebraic equations, first-degree equations, polynomials, factoring, integral exponents and rational expressions using alternative teaching styles tailored to the specific cultural backgrounds of the students. (Prerequisites: DEVM 050 or appropriate placement test scores. Students must meet federal eligibility requirements.)

CCC 072 3 Credits Fall, Spring
Alternative Approaches to Math: Intermediate Algebra (3+0)
(3 credits as DEVM 072)
Intermediate algebra. Exponents, radicals, graphing, systems of equations, quadratic equations, inequalities and complex numbers using alternative teaching styles tailored to the specific cultural backgrounds of the students. (Prerequisites: DEVM 060 or appropriate placement test scores. Students must meet federal eligibility requirements.)

CCC 085 3 Credits Fall
Science Survey (3+0)
Background and improvement of vocabulary in the sciences in topic areas of physics, chemistry and biology. Video series, reading materials, guest speakers and special demonstrations will be used. (Prerequisites: Freshman standing and permission of the instructor.)

CCC 104 3 Credits Fall, Spring
University Communications (3+0)
(3 credits as DEV 104)
Introduces communication skills characteristic of university context. Develops reading and writing strategies within the context of a specific course. Emphasis on comprehension, note-taking, and other study skills. Links with selected lecture course. (Prerequisite: Referral from Rural Student Services.)

CCC 105 3 Credits Fall, Spring
Intensive Reading Development (3+0)
(3 credits as DEV 105)
Develops vocabulary, strategies, speed, and comprehension to enhance success with textbook reading. Composition of essays in relation to readings. (Prerequisite: Students must meet federal eligibility regulations.)

Culinary Arts

Note: Students enrolled in the CAH 140 or 240 series pay a one time per semester material fee of $105.00.

CAH 060 3 Credits Fall, Spring
Basic Techniques of Cooking I (1.5+6)
Basics in the Culinary Arts field designed for students with special needs. Materials fee $50.00. (Prerequisite: Instructor permission required.)

CAH 070 6 Credits Fall, Spring
Basic Techniques of Cooking II (3+12)
An open ended course providing an appropriate learning sequence for students with special needs. Materials fee: $105.00. (Prerequisite: Instructor permission required.)

CAH 105 3 Credits Fall, Spring
Principles of Food Service I (3+0)
Food service and the principle variations which students may encounter in the industry; professional standards, kitchen safety, first aid, storeroom operation, kitchen equipment and basic culinary terminology.

CAH 116 1 Credit As Demand Warrants
Beginning Cake Decorating I (1+0)
The proper preparation of cakes for icing and decorating. Topics include basic borders, buttercream flowers, leaves, and clowns. Students decorate a minimum of three cakes. Materials fee: $20.00.

CAH 117 1 Credit As Demand Warrants
Intermediate Cake Decorating (1+0)
Advanced methods such as pattern transfer, flowers and borders, wafer paper, chocolate, and sugar molding. Use of an airbrush, flow in techniques and tiered cake assembly covered. For the advanced cake decorator. Materials fee: $20.00.

CAH 140 5 Credits Fall, Spring
Food Production I (5+0)
Teaches basic food service skills in a commercial kitchen environment. Standardized recipes and procedures stressed. End product critiqued daily. Student assignments rotate between a stock and soup station, vegetable station, pantry, and service line and grill. Emphasis on sanitary food handling practices and professional work habits. Materials fee: See note at beginning of section.

CAH 141 5 Credits Fall, Spring
Food Production II (5+0)
Continuation of CAH 140 with emphasis on preparation and use of small sauces, sauteing, roasting, braising, stewing and braising. Salad bar preparation and grill service covered. Materials fee: See note at beginning of section.

CAH 145 5 Credits Fall, Spring
Bakery Production I (5+0)
Basic commercial baking skills and procedures. Standardized recipes and procedures stressed. End product critiqued daily. Emphasis on sanitary food handling practices and professional work habits. Materials fee: See note at beginning of section.

CAH 146 5 Credits Fall, Spring
Bakery Production II (5+0)
Continuation of CAH 145 with emphasis on Danish and French pastries, combination breads, tortes and fancy dessert items. Materials fee: See note at beginning of section.

CAH 150 1 Credit Fall, Spring
Sanitation (1+0)
Sanitation principles essential to commercial kitchen personnel. Successful course completion allows the student to receive certification by the National Institute for the Food Service Industry.

CAH 152 2 Credits Fall, Spring
Supervisory Development (2+0)
Problems and challenges that food service supervisors deal with every day. Development of personnel management methods.

CAH 154 2 Credits Fall, Spring
Dining Room Service (2+0)
American style table service. Dining room service, management, controls and methods.

CAH 160 2 Credits Fall, Spring
Principles of Nutrition (2+0)
Basic principles of nutrition with emphasis on nutrients and their function in relation to human health.

CAH 161 1 Credit Fall
Pastry Tubing Art (1.5+1)
Basic cake and food product techniques including borders, flowers, cake design, and proper use of pastry tube bags.

CAH 170 2 Credits Fall, Spring
Gourmet Cooking (2+0)
Preparation and service of gourmet beef, poultry and seafood entrees for the home cook. Recipes represent new ideas in home entertainment, and menus change every semester. Materials fee: $75.00.

CAH 171 2 Credits Fall, Spring
Gourmet Baking (2+0)
Preparation of a wide range of breads, pastries, fancy desserts, French pastry, and simple tarts. Recipes represent traditional methods of baking along with current trends in home entertainment. Materials fee: $45.00.
CAH 172  2 Credits  As Demand Warrants  
Gourmet Asian/Oriental Cooking (2+0)  
Preparation and service of Asian/Oriental dishes. Study and use of proper cooking methods emphasized. Students prepare and enjoy a full meal at each class session.  
Materials fee: $75.00.  

CAH 175  2 Credits  As Demand Warrants  
Introduction to Meat Cutting I (1.5+2.5)  
Professional meat cutting for lamb, beef, pork, poultry, and seafood; health regulations using current industry standards; sausage making and meat curing.  
Materials fee: $35.00.  

CAH 199  1-12 Credits  
Culinary Arts WorkStudy Externship  
Practice in a variety of food service operations, learning current cooking methods and techniques. Student evaluations by the externship coordinator and the employer. Enrollment by special permission only.  

CAH 242  5 Credits  Fall, Spring  
Food Production III (5+0)  
Continuation of CAH 141 with emphasis on ala carte and production cooking. Students prepare foods for the advanced table service class. Foods will represent current trends in the industry with kitchen organization and professional methods stressed. Materials fee: See note at beginning of section. (Prerequisite: CAH 141.)  

CAH 243  5 Credits  Fall, Spring  
Food Production IV (5+0)  
Continuation of CAH 242 with emphasis on international and new trend American Cooking. The role of the Gardener in modern kitchen explored. Materials fee: See note at beginning of section. (Prerequisite: CAH 242 or permission of instructor.)  

CAH 247  5 Credits  Fall, Spring  
Bakery Production I (5+0)  
Continuation of CAH 146 with emphasis on specialty breads, desserts, cakes, tortes and French pastries. Ability to plan and organize production, schedule and supervise other students emphasized. Materials fee: See note at beginning of section. (Prerequisite: CAH 146 or permission of instructor.)  

CAH 250  2 Credits  As Demand Warrants  
Garde Manger (2+0)  
A hands-on experience in buffet. Presentation of hot and cold foods. Students produce plates, mouses, foreclements, aspicks, and other items essential to culinary expertise. Materials fee: $10.00.  

CAH 253  2 Credits  As Demand Warrants  
Storeroom Purchasing and Receiving (2+0)  
Formal and informal methods of purchasing, receiving and storing of food and nonfood items in food service operation. Specifications, par inventory systems and controls.  

CAH 255  2 Credits  As Demand Warrants  
Food Service Management (2+0)  
The management team’s responsibility in food service operations. Students assume the role of kitchen manager, dining room manager and general manager.  

CAH 256  2 Credits  As Demand Warrants  
Food Service Accounting (2+0)  
Principles and practices concerned with determination of food cost, labor cost, beverage cost and the basic accounting practices necessary to operate a successful food service operation.  

CAH 257  1 Credit  As Demand Warrants  
Oenology-Hospitality Industry I (1+0)  
Study and evaluation of the wines of France, Germany, Italy and the California wine producing areas. Focus on “point of sale” approach for first level serving staff. Special attention to selections for building cellar and developing breadth in the restaurant. Materials fee: $45.00. (Prerequisite: CAT 257 or permission of instructor.)  

CAH 258  1 Credit  As Demand Warrants  
Oenology-Hospitality Industry II (1+0)  
A continuation of CAH 257 with in-depth evaluation and study of the major wine producing areas of the Pacific Northwest, California, France, Germany and Italy. Focusing on preparing the new sommelier. Special attention to selections for building cellar and developing breadth in the restaurant. Materials fee: $45.00. (Prerequisite: CAH 257 or permission of instructor.)  

DANCE 108  1 Credit  As Demand Warrants  
Beginning Freestyle Jazz (1+0)  
Jazz dance for the beginning student.  

DEVS 052  3 Credits  As Demand Warrants  
Reading Enhancement (3+0)  
Intensive instruction in reading designed to increase vocabulary and comprehension skills necessary for successful reading in the content areas of college courses.  

DEVS 058  1-3 Credits  As Demand Warrants  
Reading Comprehension Lab (0+3-9)  
Emphasis on improving reading comprehension using texts from other classes or lab materials. Focus on unique paragraph structure to recognize main idea, supporting details and author’s purpose. Study techniques for recognizing new vocabulary. Small groups allow individually designed course of instruction to meet the needs of the students. Open entry/open exit. May be repeated.  

DEVS 065  1 Credit  As Demand Warrants  
Spelling Improvement (1+0)  
A diagnostic/prescriptive approach for improving spelling skills.  

DEVS 066  1 Credit  As Demand Warrants  
Vocabulary Development (1+0)  
Designed to increase vocabulary substantially and to provide tools for further vocabulary growth.  

DEVS 101  3 Credits  Fall, Spring  
Skills for College and Career Success (3+0)  
A diverse menu of study skills for the student entering the college environment. Skills include active listening, effective reading, taking usable notes, test taking, communication, time and money management. Students learn personal development skills that assist in addressing intrusive issues that impact the learning process, increasing self-esteem, and relating these skills to the classroom and later to a career. Class sessions offer diverse learning experiences.  

DEVS 104  1-3 Credits  Fall, Spring  
University Communications (1-3+0)  
(Same as CCC 104)  
Introduction to the unique methods of communication required at the college level. Links with selected lecture courses. May be repeated.  

DEVS 105  3 Credits  Fall, Spring  
Intensive Reading Development (3+0)  
(Same as CCC 105)  
Develops vocabulary, strategies, speed, and comprehension to enhance success with textbook reading. Composition of essays in relation to readings. (Prerequisite: Students must meet federal eligibility regulations.)  

DEVS 106  1 Credit  Fall, Spring  
Speed Reading (1+0)  
Introduction to newest speed reading techniques. Development of flexible reading rates and increased comprehension and vocabulary skills. Application of techniques to study, professional and leisure reading.  

DEVS 108  1 Credit  As Demand Warrants  
Study Skills Lab (1+0)  
Improvement of study skills in areas of greatest need on an individual or small group basis in the lab or other workshop or individualized format. Topics include time and stress management, note-taking, library research, and memory. Course may be repeated for credit when content varies.  

DEVS 110  1 Credit  Fall, Spring  
College Success Skills (1+0)  
An introduction and overview of the diverse skills, strategies and resources available to ensure success in the college experience. Topics include study skills, time management, career planning, stress management, communication skills, test taking and personal development skills.  

DEVS 150  1 Credit  Fall, Spring  
Career Exploration and Planning (1+0)  
Planning for a satisfying career choice based on realistic assessment of self, accurate knowledge of the world of work and experience with ways to activate career plans. Enables students to evaluate potential careers and to make educational and job search plans. Graded pass/fail.
### DEVELOPMENTAL ENGLISH

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Semester</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEV 160</td>
<td>1</td>
<td>Fall, Spring</td>
<td>Job Search Skills: Finding, Getting, and Keeping Your Job (1-9)</td>
</tr>
<tr>
<td>DEV 185</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Straight Thinking (3-0)</td>
</tr>
</tbody>
</table>

### DEVELOPMENTAL MATHEMATICS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Semester</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEV 050</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Basic College Mathematics (3-0)</td>
</tr>
<tr>
<td>DEV 052</td>
<td>2</td>
<td>Fall</td>
<td>Alternative Approaches to Math: Basic College Math (2-4) (Same as CCC 052)</td>
</tr>
<tr>
<td>DEV 060</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Elementary Algebra (3-0)</td>
</tr>
<tr>
<td>DEV 061</td>
<td>1</td>
<td>Independent Learning Only</td>
<td>Review of Elementary Algebra</td>
</tr>
<tr>
<td>DEV 062</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Alternative Approaches to Math: Elementary Algebra (3-0) (Same as CCC 062)</td>
</tr>
<tr>
<td>DEV 065</td>
<td>1-3</td>
<td>Fall, Spring</td>
<td>Mathematics Lab (0-3-9)</td>
</tr>
</tbody>
</table>

### Diesel Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Semester</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSLT 150</td>
<td>7</td>
<td>Fall</td>
<td>Diesel Mechanics I (7-4)</td>
</tr>
<tr>
<td>DSLT 152</td>
<td>7</td>
<td>Fall</td>
<td>Diesel Mechanics II (7-4)</td>
</tr>
</tbody>
</table>

### Drafting Technology

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Semester</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRT 101</td>
<td>4</td>
<td>As Demand Warrants</td>
<td>Beginning Drafting I (4-0)</td>
</tr>
<tr>
<td>DRT 102</td>
<td>2</td>
<td>As Demand Warrants</td>
<td>Beginning Drafting II (2-4)</td>
</tr>
<tr>
<td>DRT 115</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Graphics I (3-4)</td>
</tr>
<tr>
<td>DRT 121</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Reading Construction Blueprints (2-4)</td>
</tr>
<tr>
<td>DRT 123</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Uniform Building Code (3-4)</td>
</tr>
</tbody>
</table>


Early Childhood Development

(Tanana Valley Campus)

The Early Childhood Development (ECHD) courses listed below are taught only in Fairbanks under auspices of the Tanana Valley Campus. See the next section of this catalog for Early Childhood Education (ECED) courses taught outside of Fairbanks.

ECHD 100 3 Credits  
Introduction to Early Childhood (2.75+5)  
Fall, Spring  

ECHD 101 1 Credit  
Alternate Fall  
Family Day Care Home Provider Training (1+0)  
Operation of Safe, Successful Day Care Home or Family Day Care Program. Overview of laws and regulations, business practices, parental concerns, health and safety activities, space planning, snack and meal service, community support, and provider concerns. (Next offered: 1995-96.)

ECHD 105 3 Credits  
Survey of Programs for Young Children (3+0)  
Students observe and contrast past and present programs in the community and formulate their own personal philosophy of early childhood education and child care.

ECHD 110 1 Credit  
Practical Paths to Discipline and Guidance (1+0)  
Practical techniques for guidance and discipline of young children.

ECHD 120 3 Credits  
Nutrition, Health and Safety (3+0)  
For parents, caregivers, and teachers of young children. Emphasis on common illnesses, preventive health care, nutritional needs, and safety aspects of caring for young children.

ECHD 121 1 Credit  
Physical Activities for Young Children (1+0)  
Exploration of a variety of equipment, activities, and opportunities to promote the physical development of children, birth to age 8, with emphasis on fulfilling the needs of the 3-8 year old.

ECHD 122 1 Credit  
Cognitive Activity for the Young Child (1+0)  
How to provide activities and opportunities that encourage curiosity, exploration, and problem-solving appropriate to the developmental levels and learning styles of children.

ECHD 123 1 Credit  
Language Activity/Young Child (1+0)  
Activities that help children acquire and use language as a means of communicating their thoughts and feelings. Includes nonverbal communication and understanding others.

ECHD 124 1 Credit  
Creative Activities for the Young Child (1+0)  
Learning opportunities that stimulate children to play with sound, rhythm, language, materials, space and ideas in individual ways and to express their creative abilities.

ECHD 131 1 Credit  
Group Management (.75+.5)  
Managing a group of children. 3 years and older, with emphasis on planning, implementing and evaluating developmentally appropriate practices. Includes teacher-directed times, transitions, and supporting child-initiated experiences.

ECHD 135 2 Credits  
Infant/Toddler Care (1+2)  
Introduces activities to stimulate development and learning of infants and toddlers individually and in a group setting. Covers discipline and guidance techniques, communication, health concerns and facility requirements. Weekly 2 hour lab required.

ECHD 211 1 Credit  
Developing Positive Self-Concept (1+0)  
How to provide physical and emotional security for each child to know, accept, and take pride in himself or herself. Includes development of sense of independence.

ECHD 242 1 Credit  
Observe/Record Behavior of Child (1+0)  
Techniques for accurately observing children's behavior, including several methods of observation and techniques for graphing the results.

ECHD 245 3 Credits  
Child Development (3+0)  
Study of development from prenatal through middle childhood including cognitive, emotional, social and physical aspects of the young child. Includes child observations. Roles of heredity and environment in the growth process. (Prerequisite: PSY 101 or permission of the instructor.)

ECHD 250 3 Credits  
Practicum ECHD I (3+0)  
A guided student teaching experience in working with a group of 3-6 year old children. Student assumes increasing responsibility for planning and lead teaching. Prerequisites: PSY 245, ECHD 100, 110, 120, 131, 255 and permission of the instructor.

ECHD 251 3 Credits  
Practicum ECHD II (3+0)  
A guided field experience in working with a group of young children in a school or center. Students who have demonstrated competency in ECHD 250 may participate in an infant toddler center, child care center, early childhood education program or public school classroom. Schedule times and dates to be arranged. (Prerequisites: ECHD 250 and instructor's permission.)
ECDH 255  3 Credits  Fall, Spring  Curriculum and Activities for Young Children (2.75-5) Importantly, emphasizes in establishing appropriate curriculum and activities for young children. Includes gross motor, creative, science, perceptual-motor, language, literature, dramatic and music, and play learning activities and opportunities for children 3 and older.

ECDH 256  1 Credit  Alternate Spring  Activities for School-Age Child Care (1+0)  For child care staff who work in after-school and/or summer programs with focus on daily activity schedules and appropriate, fun, challenging activities and projects for young school-age children. (Next offered: 1995-96.)

ECDH 257  1 Credit  Spring  Learning Mathematics (1+0)  Overview of how children construct mathematical meanings. Introduction to mathematical learning principles and experiences for children, 3-8 years. (Prerequisite: ECHD/PSY 245 or concurrent enrollment.)

ECDH 260  3 Credits  Fall  Introduction to the Exceptional Child (3+0)  An overview of categories of exceptionality includes hearing and visual impairments; learning, speech and language disabilities; emotional disturbances; physical handicaps; mental retardation; and the gifted and talented. (Prerequisite: ECHD/PSY 245 or permission of instructor. Next offered: 1995-96.)

ECDH 261  3 Credits  Alternate Fall  Mainstreaming Exceptional Children (3+0)  Developmental, social, educational and legal (PL94-457) issues related to the education of young handicapped children including the role of the teacher in identifying, assessing, and individualizing educational programs for the young handicapped child in the mainstreamed setting. (Prerequisites: ECHD/PSY 245 and ECDH 260 or instructor permission. Next offered: 1995-96.)

ECDH 265  2 Credits  Fall  Culture, Learning and the Young Child (2+0)  Cultural effects on development and learning of young children. Exploring multicultural and multi-ethnic resources to create an anti-bias curriculum. Special attention on Alaska Native Cultures. (Prerequisite: ECHD 255 or concurrent enrollment or permission of instructor.)

ECDH 301  3 Credits  Alternate Fall  Parents as Partners in Education (2.75+5)  Study of strategies that will assist those who work with children and/or families to facilitate supportive partnerships with parents. Includes partnership, contemporary issues, school and home-based programs, rights and responsibilities, personal ethics, and parents with special or unique needs. (Prerequisite: ECHD/PSY 245 or permission of instructor. Next offered: 1995-96.)

ECDH 340  3 Credits  Alternate Spring  Financial Management of Early Childhood Programs (2.75+5)  The financial aspects of managing a day care center or preschool program. Includes budgeting, program income management, marketing, purchasing, pay and compensation, and fee collection issues important to maintaining quality programs for young children. (Prerequisite: ECHD/PSY 245 or permission of instructor. Next offered: 1995-96.)

ECDH 341  3 Credits  Alternate Spring  Personnel Management of Early Childhood Programs (2.75+5)  Management of personnel in child care programs, including recruitment, hiring, in-service training, staff meetings and communication, supervision, evaluation, motivation, burnout prevention and termination of employees. Focus on maintaining quality programs for young children. (Prerequisite: ECHD/PSY 245 or permission of instructor. Next offered: 1995-96.)

ECDH 342  3 Credits  Alternate Fall  Family Relationships (3+0)  Examination of relationships in contemporary family life. Focus on the changing family, gender roles, living together, and relationships with children and grandchildren. Includes current family research and issues within and effect of public policy on families in our multicultural society. (Prerequisites: SOC 242 and ECHD/PSY 245 or permission of instructor. Next offered: 1996-97.)

ECDH 346  3 Credits  Alternate Fall  Adolescence Through the Life Span (2.75-75)  Growth and development during adolescence, young adulthood, middle age, and later life, with sensitivity to multicultural variations. Includes special adolescent problems, appropriately guiding youth for independent learning and decision-making, and specific concerns of the adult years. (Prerequisites: ECHD 245; ECHD 240, or permission of instructor. Next offered: 1995-96.)

ECDH 442  3 Credits  Alternate Spring  Family Resource Management  Management of resources which help families meet and alter the increasing complexities of life. Involves purposeful actions which affect the use of time, money, energy, skills, talents and knowledge. Roles, goals, and decision-making within our multicultural society throughout the life cycle. (Prerequisite: SOC 242, ECHD 245 and upper division status, or permission of instructor. Next offered: 1995-96.)

ECDH 445  3 Credits  Alternate Spring  Young Child Social and Cognitive Development and Teaching Strategies (2.75-75)  Understanding specific social and cognitive research and developmental theories about young children. Observation, recording and assessing children's behavior as basis for developing human insight, planning appropriate instructional programs and learning environments, setting and achieving program goals, and providing for individual needs. Advanced work in refining teaching strategies. (Prerequisite: PSY 101, ECHD 245, or permission of instructor. Next offered: 1996-97.)

Early Childhood Education

(Rural College)  The Early Childhood Education (ECDH) courses listed below are taught only outside of Fairbanks under auspices of the Rural College. See the preceding section of this catalog for Early Childhood Development (ECHD) courses taught in Fairbanks. Important Note: All Early Childhood Education courses must be accompanied by a lab experience in a facility for children ages 0-5.

ECDH 100  3 Credits  As Demand Warrants  Introduction to Early Childhood Education (2-2)  Introduction to the history of early childhood education, developmental and learning theory, types of programs, behavior modification, creating the learning environment, the role of the parent and teacher, and current issues in the field of early childhood education.

ECDH 111  1 Credit  As Demand Warrants  A Safe Environment (1+0)  Teaches competencies which enable students to provide a safe environment for young children. Emphasis on measures necessary to reduce and prevent accidents. (CDA curriculum)

ECDH 112  1 Credit  As Demand Warrants  A Healthy Learning Environment (1+0)  Prepares the student to provide a learning environment for young children free of factors which may contribute to or cause illness. (CDA curriculum)

ECDH 113  1 Credit  As Demand Warrants  Learning Environment (1+0)  Arranging the environment to be conducive to learning and appropriate to the developmental level and learning style of children. Selection of materials and equipment, room arrangement, and scheduling. (CDA curriculum)

ECDH 121  1 Credit  As Demand Warrants  Physical Activities for Young Children (1+0)  Essentials of planning a center which promotes the physical development of children. Includes scheduling, planning, activities, and selection of site, equipment and materials. (CDA curriculum)

ECDH 122  1 Credit  As Demand Warrants  Cognitive Activities for Young Children (1+0)  Activities and experiences which encourage questioning, probing, and problem-solving skills appropriate for different developmental levels and various learning styles of young children. (CDA curriculum)

ECDH 123  1 Credit  As Demand Warrants  Communication Activities (1+0)  Activities that help children acquire and use language as a means of communicating their thoughts and feelings. Includes nonverbal communication and understanding of others. (CDA curriculum)

ECDH 124  1 Credit  As Demand Warrants  Creative Activities for Young Children (1+0)  Activities which provide a variety of experiences and media that stimulate children to explore and express their creative ability. (CDA curriculum)

ECDH 131  1 Credit  As Demand Warrant  Guidance and Discipline (1+0)  Indirect and direct guidance techniques. Theories of guidance, including body language effects, reinforcement, and logical consequences discussed for cultural relevance and practical application. (CDA curriculum)
ECON 122 1 Credit As Demand Warrants

Social Development for the Young Child (1+0)
The development of social skills which enable children to function as productive members of a group. Emphasis on the development of mutual respect and cooperative work/play between child/child and child/adult. (CDA Curriculum)

ECD 145 1 Credit As Demand Warrants

Nutrition for Young Children (1+0)
For parents, caregivers and teachers of young children, focus on the nutritional needs of children up to five years of age. (CDA Curriculum)

ECD 211 1 Credit As Demand Warrants

Developing Positive Self-Concepts for Young Children (1+0)
Methods for helping children develop a sense of awareness and self-esteem. Emphasis on providing success-oriented activities, encouraging acceptance and expression of children's feelings and developing pride as an individual and as a member of a cultural/ethnic group. (CDA Curriculum)

ECD 212 1 Credit Fall, Spring

Developing Individual Strengths in Children (1+0)
Use of activities, techniques and planning that help each child to function to his/her maximum potential. Must be taken concurrently with supervised experience in a child development center, home-based or infant-learning setting. (CDA Curriculum)

ECD 221 1 Credit As Demand Warrants

Positive Home-Center Relationship (1+0)
The importance of a positive and productive relationship between families and the child development centers. Emphasis on using this relationship to coordinate childrearing efforts of both the family and the educator. (CDA Curriculum)

ECD 222 1 Credit As Demand Warrants

Program Management (1+0)
The importance of coordination and communication among staff in the classroom. Emphasis on effective group planning, using resources, improving communication, sharing information about children, maintaining records, and establishing and following policies, rules and regulations. (CDA Curriculum)

ECD 223 1 Credit As Demand Warrants

Professionalism (1+0)
Awareness of one's own personal qualities, feelings, and values that affect the teaching atmosphere; one's relationships with children; one's own teaching style. (CDA curriculum)

ECD 231 1 Credit As Demand Warrants

Screening (1+0)
Activities which help the teacher to understand the purpose of screening young children and to know how to use good screening procedures. (CDA curriculum)

ECD 232 1 Credit As Demand Warrants

Assessment/Recording (1+0)
Activities that will help the teacher to understand assessment of young children, recording of assessment information, and staff. (CDA curriculum)

ECD 233 1 Credit As Demand Warrants

Masterring Young Children with Special Needs (1+0)
Activities that help the teacher to understand the concept and purpose of mainstreaming special needs preschool children into the regular classroom. Emphasis on rights of special needs child to service and procedures for providing service under Public Law 94-142. (CDA curriculum)

ECD 289 1 Credit As Demand Warrants

Final Assessment for Child Development Associate Credential (1+0)
Covers procedures for final assessment for the Child Development Associate (CDA) credential. Emphasizes needs of a group of children in a child development setting by nurturing and maintaining a proper child care environment and by promoting good relations between parents and the child development center. (CDA curriculum)

ECD 299 1-3 Credits As Demand Warrants

Practicum in Early Childhood Education
A practical application of all previous CDA competency courses. The student will assume responsibility for children in an approved early childhood setting. (CDA curriculum)

Economics

Admittance to 300 and 400 level School of Management courses will be granted only to students with upper division standing. Others will be admitted only with the written permission of the appropriate department head. Students enrolling in School of Management courses are expected to have completed the necessary prerequisites for each course.

A $25.00 per semester student computing facility user fee will be assessed for any student enrolling in one or more School of Management courses except ECON 100X (AIS, ACCT, BA and ECON). This fee is in addition to any lab/material fees. Note: This fee does not apply to Tanana Valley Campus courses.

ECON 100X 3 Credits

(As same as FS 100X)

Political Economy (3+0) s
Survey of the evolution and operation of the American domestic political economy with consideration of market failures and government responses. Review of major issues in political economy such as inflation, poverty and budget deficits. Exploration of linkages between American and global systems.

ECON 101 3 Credits

Introduction to Current Economic Problems (3+0) s
Focuses on such current problems as unemployment, inflation, pollution, and poverty utilizing a less theoretical approach than is customary in introductory economics courses. Primarily for the student who plans no further work in economics.

ECON 111 3 Credits As Demand Warrants

Economics of Rural Alaska (3+0)
Basic economic concepts as they relate to issues and problems of contemporary regional development in rural Alaska. Socio-economic consequences of the introduction of new technologies, modern economic infra-structures and corporate relationships to traditional, small scale communities.

ECON 200 4 Credits

Principles of Economics (4+0+1) s
Goals, incentives and outcomes of economic behavior with applications and illustrations from current issues: operation of markets for goods, services, and factors of production; the behavior of firms and industries in different types of competition; and income distribution. The functioning and current problems of the aggregate economy, determination and analysis of aspects of international exchange. Materials fee: $10.00. (Prerequisite: Sophomore standing or permission of instructor.)

ECON 201 3 Credits

Principles of Economics I: Microeconomics (3+0) s
Price and market theory, income distribution, contemporary problems of labor, agriculture, market structure, and pollution. Also available via Independent Learning.

ECON 202 3 Credits

Principles of Economics II: Macroeconomics (3+0) s
Analysis and theory of national income, money and banking, and stabilization policy. Also available via Independent Learning.

ECON 227 3 Credits

Intermediate Statistics for Economics and Business (3+0) s
Extension of topics developed in STAT 200. Development of statistical techniques and their application to economic and business problems. Simple and multiple regression and correlation, analysis of variance, forecasting techniques, quality control, non-parametric methods, and decision theory. (Prerequisite: STAT 200.)

ECON 231 3 Credits

Introduction to Natural Resource Economics (3+0) s
Microeconomic principles and their application to natural resource issues. Topics include supply, demand, marginality, optimality, elementary production economics, economic rent, and comparative advantage. These principles applied to agency budget allocation decisions, multiple use, resource valuation, conservation, market failure, and public outdoor recreation problems.

ECON 277 3 Credits

The Alaskan Economy (3+0) s
Economic problems in Alaska with analysis of historical trends and current patterns of economic growth; emphasis on present and future alternative economic policies, and their potential impacts. Also available via Independent Learning.

ECON 321 3 Credits

Intermediate Microeconomics (3+0) s
Analysis of demand and supply under various market forms, cost and theory of production, factor pricing and theory of distribution, and survey of welfare economics. (Prerequisites: ECON 200 and MATH 262 or equivalent, upper division standing.)

ECON 322 3 Credits

Managerial Economics (3+0) s
Interpretation of economic data and applications of economic theory in business firms. Bridging the gap between theory and practice through empirical studies, cases, and decision problems. Emphasis upon decision- making using analysis of research data. Materials fee: $10.00. (Prerequisites: ECON 200 and MATH 262 or equivalent, upper division standing.)
ECON 324  3 Credits  Spring
Intermediate Macroeconomics (3+0) s
Concepts and measurement of income, analysis of aggregate demand and supply and their relation to the level of prices, employment, and economic growth. (Prerequisite: ECON 200 and MATH 262 or equivalent, upper division standing.)

ECON 335  3 Credits  Spring
Intermediate Natural Resource Economics (3+0) s
Extension of concepts developed in ECON 235, using a higher level of economic analysis. Topics include welfare economics and economic efficiency concepts, benefit/cost analysis, resource allocation, resource taxation, common property problems, externality, public goods, valuation of non-market resources, and land use planning issues. (Prerequisite: ECON 200 or 235, upper division standing.)

ECON 350  3 Credits  Fall
Money and Banking (3+0) s
The liquid wealth system in the United States, including the commercial banking system, the Federal Reserve System, and non-bank financial institutions; the regulation of money and credit and its impact on macroeconomic policy objectives. (Prerequisite: ECON 200, upper division standing.)

ECON 351  3 Credits  Alternate Fall
Public Finance (3+0) s
Economic justifications for government; federal, state and local government, taxation, spending and debt; their effects on allocation, distribution, stabilization and growth. (Prerequisite: ECON 200, upper division standing. Next offered: 1995-96.)

ECON 409W  3 Credits  Alternate Fall
Industrial Organization and Public Policy (3+0) s
The relationship of market structure to the economic conduct and performance of firms and industries, the determinants, measurement and classification of market structure, public policy toward mergers, industrial concentration, and aggregate concentration. (Prerequisites: ECON 200, 321, upper division standing. Next offered: 1995-96.)

ECON 420W  3 Credits  Alternate Fall
Labor Markets and Public Policy (3+0) s
Application of labor market analysis and wage theory as they relate to public policy issues. Topics include determination of wages, taxation and employment, economic impact of unions, economics of discrimination, and issues relating to women's and minorities' changing roles in the labor market. (Prerequisite: ECON 200, upper division standing. Next offered: 1995-96.)

ECON 434W  3 Credits  Alternate Spring
Environmental Economics (3+0)
An extension of concepts introduced in ECON 235, using a higher level of economic analysis. An analysis of the economic forces involved in environmental degradation, preservation, and regulation. Topics include pollution, biodiversity, wilderness, and climatic change. (Prerequisites: ECON 200 or ECON 235, upper division standing. Next offered: 1996-97.)

ECON 436W  3 Credits  Alternate Spring
Energy Economics (3+0) s
Market forces and institutions affecting the allocation of energy resources. Special attention to international allocative decisions and the role that public policy plays in influencing the rate at which energy resources are used over time. (Prerequisites: ECON 200 or 235, upper division standing. Next offered: 1996-97.)

ECON 437W  3 Credits  Alternate Fall
Regional Economic Development (3+0) s
Determinants and effects of the spatial distribution of economic activity. Impact of public policy on regional development within the Alaska context. (Prerequisite: ECON 200, upper division standing. Next offered: 1996-97.)

ECON 438W  3 Credits  Alternate Spring
The Economics of Fisheries Management (3+0) s
Review of theoretical economic concepts as applied to the management of a commercial fishery. Major current management policy issues affecting United States' commercial fishing. Emphasis on the practical application of the economic theory and policy insights derived from the course to problems of management of Alaska's fisheries. (Prerequisite: ECON 200 or 235, upper division standing. Next offered: 1995-96.)

ECON 451W  3 Credits  Alternate Spring
Public Expenditure Analysis (3+0) s
Purposes and economic effects of governmental expenditures, budgeting techniques, and their effects on resource allocation. (Prerequisite: ECON 200, upper division standing. Next offered: 1996-97.)

ECON 463O  3 Credits  Fall
International Economics (3+0) s
Pure theory of international trade: comparative cost, terms of trade, and factor movements. International disequilibrium: balance of payments and its impact on national economy, capital movement, economic development through international trade. (Prerequisite: ECON 200, upper division standing.)

ECON 475  1-3 Credits  Fall, Spring
Economic Internship
Designed to give students the opportunity to do research or other practical work with business, governmental agencies, or research organizations. (Prerequisite: Admission by permission of instructor, upper division standing.)

ECON 601  3 Credits  Fall
Microeconomic Theory I (3+0)

ECON 603  3 Credits  Spring
Macroeconomic Theory I (3+0)

ECON 611  3 Credits  Fall
Principles of Economic Analysis (3+0)

ECON 622  3 Credits  Fall
Managerial Economics (3+0)

ECON 623  3 Credits  Fall
Mathematical Economics (3+0)

ECON 626  3 Credits  Fall
Econometrics (3+0)

ECON 630  3 Credits  Fall
Economic Issues of the Circumpolar North (3+0) (Same as NORS 630)

ECON 635  3 Credits  Fall
Natural Resource Economics (3+0)

ECON 636  3 Credits  Fall
Microeconomics II Dynamic Resource Optimization (3+0)

ECON 638  3 Credits  As Demand Warrants
Resource Economics (3+0)

ECON 670  0 Credit  Spring
Seminar in Research Methodology (1+0)

ECON 675  3 Credits  Fall
Practical Quantitative Methods for Business Decision Making (3+0) (Same as BA 675)

Education

ED 101  2 Credit  Fall, Spring
Orientation to Alaska Native Education (2+2)
A seminar in which Native Alaska educators present information and lead discussions on issues related to rural and urban Alaskan Native education. Topics include cultural differences in teaching and learning styles; curriculum development for multi­graded classrooms and small high schools; use of technology and community resources; and decision-making and local control. Practicum experiences in the classroom will be required. (Prerequisite: Permission of instructors.)

ED 106  3 Credits  As Demand Warrants
Reading Activities in the Classroom (3+0)
Methods, materials and teaching of reading. Techniques for working with small groups and for integrating a language experience approach using personal language backgrounds with basal reading programs. Use of teacher's guides. Demonstration lessons.

ED 131  1-3 Credits  As Demand Warrants
Implementation of an Adult Education Program (1+0, 2+0 or 3+0)
Procedure for planning and establishing a village-based adult education program. Includes organizing the classroom, equipment and materials; grades and record keeping, testing and assessing appropriate levels of materials for individual students; lesson plans, as well as history and functions of adult education; funding teacher education and evaluation tools.

ED 141  3 Credits  As Demand Warrants
Introduction to Methods and Materials in Bilingual Education (3+0)
Methods and problems of teaching in and preparing material for the bilingual classroom in the areas of reading, language arts, social studies, mathematics, sciences, art, music and health including lesson planning, scheduling, production of bilingual materials, and team teaching. (Recommended: Literacy in both languages of instruction.)

ED 200  2-6 Credits  As Demand Warrants
Peer Tutoring (1+3 to 6)
Peer tutoring offers an opportunity to explore issues and practice tutoring techniques. For students interested in teaching or those who wish to share their expertise in a content area. Students may take the Institute section (3 weeks) and/or the Learning Activities Center section (12 weeks). Lab time arranged for variable credit; course may be repeated for up to six credits.
ED 201 3 Credits Fall, Spring
Introduction to Education (2+3)
The prospective teacher is acquainted with the nature of teaching including the scholastic, professional, and personality requirements for effective teaching. Involves laboratory time in public schools as teacher's aide. Open to all students. Required for all students majoring in education. (Prerequisite: Sophomore standing.)

ED 208 3 Credits As Demand Warrants
Art for the Classroom Teacher (3+0)
(Same as ART 208)
Concepts in art education for persons with limited art background working with young children. Combines a philosophy of art education, art history, and "hands-on" experiences to enable the teacher to effectively integrate visual arts into the curriculum as enjoyment and enrichment.

ED 210 3 Credits As Demand Warrants
Second Language Acquisition (3+0)
An intensive study of how people acquire second languages, i.e., one of the issues in the discourses as young children in the home. Topics include psychological, social and cultural aspects of second language acquisition, theory of acquisition, applied linguistic and socio-linguistic research, and insights into teachers and students of second language. Examination of acquisition of languages by people in the students' own communities.

ED 211 3 Credits As Demand Warrants
Methods and Materials for Teaching a Second Language (3+0)
Intensive work in a broad repertoire of second language teaching methods. Includes designing, teaching, and assessing actual lessons. (Prerequisite: Experience as an educator in a bilingual/bicultural or second language classroom or permission of instructor.)

ED 212 3 Credits As Demand Warrants
Curriculum Development for Teaching a Second Language (3+0)
Development of scope and sequence for unit plans and yearly/multi-year curricula for teaching a second language. (Prerequisite: Experience in a second language classroom or permission of instructor; ED 211 strongly recommended)

ED 213 3 Credits As Demand Warrants
Human Development and Learning (3+0)
Interrelated principles of human growth, development, adjustment and learning. For students preparing for a career in teaching but also open to parents, counselors, community workers and others.

ED 214 3 Credits As Demand Warrants
Natural Approaches to Language Instruction (3+0)
Students explore modern approaches, methods, techniques, and activities which have been successful in teaching second languages.

ED 215 3 Credits As Demand Warrants
Methods of Teaching a Second Language (3+0)
Provides a basic knowledge of second language acquisition theory. Students taught to adapt materials for teaching Imagiap, Yup'ik or English as a second language, and write and implement a second language lesson plans. Attention paid to practicing different methods of instruction.

ED 216 3 Credits As Demand Warrants
Children's Literature (3+0)
A survey of children's literature and storytelling from around the world, including criteria for evaluation. Emphasizes methods of encouraging children's appreciation of a variety of selections. Students may study materials for a specific age group within 1-12 years.

ED 241 3 Credits As Demand Warrants
Methods and Materials in Bilinual Education (3+0)
Overview of bilingual instruction. Students make and adapt materials for the classroom. Attention to practicing different methods of instruction.

ED 245 3 Credits As Demand Warrants
Child Development (3+0)
A study of the physical, emotional, cognitive, and social aspects of a child's development from the prenatal period through early adolescence. (Prerequisite: PSY 101 or permission of instructor)

ED 262 3 Credits As Demand Warrants
Methods of Teaching English as a Second Language and Standard English as a Second Dialect (3+0)
(Same as LING 262)
Covers basic assumptions about the nature of language, language learning, language teaching, characteristics of good language learners, optimal language learning environments, and what affect they have on teaching styles. Roles of the second language teacher and their appropriateness covered. Presents techniques and activities consistent with specific language teaching methods and adaptation of these methods to the needs of western Alaska classrooms. (Prerequisite: Classroom experience.)

ED 275 3 Credits Fall, Spring
Introduction to Microcomputers for Teachers (3+0)
Computer technology and its present and potential impact on education. Topics include basic microcomputer terminology and operation, classroom applications of computer technology, and choosing and using hardware and software. (Prerequisite: ED 201 or concurrent enrollment in ED 201.)

ED 299, 199, 299 3+0 Credits As Demand Warrants
Practicum in Education
Individualized work experience. Credit is variable from 1 to 3 credits, depending upon the quality and quantity of the work experience. Credit may be earned in most disciplines and programs.

ED 303 3 Credits Alternate Spring
Language Acquisition (3+0)
(Same as LING 303)
Theories of the acquisition and development of first and second languages, including consideration of biological and sociocultural factors. Survey of traditional and contemporary models, and implications for pedagogy and public policy. (Prerequisite: LING 101. Next offered: 1995-96.)

ED 305 3 Credits Fall, Spring
Literature for Children (3+0)
Evaluation criteria and application to children's books selected by student. Study of outstanding authors, illustrators and content of specific categories of literature, book selection aids, and effective use of literature to promote learning. (Prerequisite: Junior standing)

ED 307 1 Credit Spring
Information Sources for Educators (1+0)
(Same as LS 307)
A self-paced study course providing a survey of major library reference sources and computer databases for education/education related majors. Class meets for an introductory session and a computer literature search demonstration; otherwise, the student works at his individual rate and on his own time schedule.

ED 309 3 Credits Fall
Elementary School Music Methods (3+0)
(Same as MUS 309)
Principles, procedures, and materials for teaching music to children at the elementary level.

ED 310 3 Credits Fall, Spring
Modes of Creative Expression in Education (3+0)
Use of art, music, dance, drama, photography and creative writing in education to stimulate creative expression. Methods of incorporating these modes of expression into teaching practices. (Prerequisite: ED 201)

ED 311 3 Credits Spring
Introduction to Instructional Technologies (2+3)
Principles, procedures, materials and apparatus associated with use of instructional technologies. Instructional (AV) equipment: video recorders, teleconferencing equipment, motion and still picture projectors, audio recorders, and other programmable equipment. Systematic selection and utilization techniques. (Prerequisite: ED 201 or concurrent enrollment in ED 201.)

ED 330 3 Credits Fall, Spring
Diagnosis and Evaluation of Learning (3+0)
Nature of classroom teaching-learning process, emphasizing teaching decisions. Strengths and weaknesses of various forms of diagnosis and evaluation of learning, with emphasis on cross-cultural settings. Informal, formal, process, and product assessment. (Prerequisite: ED 201)

ED 333 3 Credits As Demand Warrants
History of Childhood (3+0)
Surveys child rearing practices in the major cultures of the world and parent-child relationships in different time periods. Examines psychogenic personality changes caused by parent-child interaction through successive generations. (Prerequisite: Junior standing.)

ED 336 3 Credits As Demand Warrants
Education and Economic Development (3+0)
(Same as RD 338)
Examines theory and evidence linking varied forms of education to economic growth and development. A comparative approach explores similarities and differences between rural Alaskan regional development and systematic national-building efforts in developing countries. (Prerequisite: Permission of instructor.)

ED 345 3 Credits As Demand Warrants
Sociology of Education (3+0)
(Same as SOC 345)
The influence of social, political, and economic forces upon schools. Examines how school organization affects teaching practices, how peer groups affect student learning, and how national political and economic concerns determine what becomes an educational issue. (Prerequisite: Junior standing.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 346</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Structure of American Education (3+0) Fundamentals of public school organization, control and support in relation to federal, state and local agencies. Issues related to the structure and delivery of educational services analyzed with attention to issues in Alaska. (Prerequisite: Junior standing in education.)</td>
</tr>
<tr>
<td>ED 350</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Communication in Cross-Cultural Classrooms (3+0) Interdisciplinary examination of communication and language in cross-cultural educational settings, including language, literacy, and inter-ethnic communication related to classrooms in Alaska. Also available via Independent Learning. (Prerequisite: ED 201.)</td>
</tr>
<tr>
<td>ED 375</td>
<td>3</td>
<td>Fall, Spring</td>
<td>The Exceptional Learner (3+0) Understanding, identifying, and serving the exceptional learner in the regular classroom in rural and urban settings. Includes the unique needs of exceptional students in rural settings from bilingual/multicultural backgrounds. Also available via Independent Learning. (Prerequisites: ED 201 and PSY 240.)</td>
</tr>
<tr>
<td>ED 380</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Cultural Influences in Education (3+0) Interdisciplinary study of the educational problems, concerns and successes in a variety of cultural contexts. Social, cultural and psychological factors inherent in the educational process and how they are affected by a multicultural setting. Attention given to curriculum improvement and teaching strategies appropriate for the multicultural classroom and school. (Prerequisites: ED 330 and junior standing.)</td>
</tr>
<tr>
<td>ED 385</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>International Perspectives on Education (3+0) A comparative analysis of the influences of changing political, social and economic conditions and relationships with other countries in the world on U.S. and Alaska education policies. Examination of school systems in several industrialized and developing countries with focus on understanding Alaska's educational system within the context of this wider global community. (Prerequisite: ED 201. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ED 402</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Methods of Teaching in the Secondary School (2+3) Principles and methods of teaching for junior high and high school classrooms. Includes planning for effective teaching, classroom management, and the implementation of teaching plans in classroom settings. Materials fee: $35.00. (Prerequisites: ED 201; admission to teacher education program. This course should be taken the semester prior to ED 453.)</td>
</tr>
<tr>
<td>ED 407</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Reading Strategies for Secondary Teachers (3+0) Techniques and materials to help secondary students acquire skills for greater comprehension of subject matter. Should be taken concurrently with ED 402. (Prerequisites: ED 330 and junior standing.)</td>
</tr>
<tr>
<td>ED 410W</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Foundations of Literacy Development (3+0) Language, reading, and writing development examined in children of varying ages and within various social contexts, with emphasis on impact of out-of-school styles on school literacy instruction. Materials fee: $30.00 for any combination of ED 410, 411, 412, and 413. (Prerequisites: Fairbanks program: All required education courses through the 300 level; concurrent enrollment in ED 411, 412, and 413; and permission of instructor. X-CED program: PSY 240, ED 304, 310, and 330.)</td>
</tr>
<tr>
<td>ED 411</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Strategies for Reading and Writing Instruction in Multi-Cultural Classrooms (3-0) Methodology, instructional materials, and language arts content relevant to the instruction of developmental language, reading and writing in diverse K-8 classrooms. Includes practicum placement in elementary school. Materials fee: $30.00 for any combination of ED 410, 411, 412, and 413. (Prerequisites: Fairbanks program: All required education courses through the 300 level; concurrent enrollment in ED 410, 411, 412, and 413; and permission of instructor. X-CED program: PSY 240, ED 304, 310, and 330.)</td>
</tr>
<tr>
<td>ED 412</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Language Arts and Social Studies: Methods and Curriculum Development (3+0) Study of concepts, content, methods and materials which characterize the teaching of language arts and social studies; the development of written plans and units; and practicum experience in elementary school. Materials fee: $30.00 for any combination of ED 410, 411, 412, and 413. (Prerequisites: Fairbanks program: All required education courses through the 300 level; concurrent enrollment in ED 410, 411, 412, and 413; and permission of instructor. X-CED program: ED 410 and 411.)</td>
</tr>
<tr>
<td>ED 413</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Mathematics and Science: Methods and Curriculum Development (3+0) Study of methods, content, methods and materials which characterize the teaching of mathematics and science, the development of written plans and units; and practicum placement in elementary school. Materials fee: $30.00 for any combination of ED 410, 411, 412, and 413. (Prerequisites: Fairbanks program: All required education courses through the 300 level; concurrent enrollment in ED 410, 411, 412; and permission of instructor. X-CED program: ED 410 and 411.)</td>
</tr>
<tr>
<td>ED 420</td>
<td>3</td>
<td>Fall</td>
<td>Alaska Native Education (3+0) (Same as ANS 420) School systems historically serving Native people, current efforts towards local control, and the cross cultural nature of this education. (Prerequisite: ANTH 242 or HIST 100; or permission of instructor.)</td>
</tr>
<tr>
<td>ED 421</td>
<td>3</td>
<td>Spring</td>
<td>Native Ways of Knowing (3+0) (Same as ANS 421) Focus on how culture and world view shape how we are and influence the way we come to know the world around us. Emphasis on Alaska Native knowledge systems and ways of knowing. (Prerequisite: Upper division standing.)</td>
</tr>
<tr>
<td>ED 422</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Building a Practical Philosophy of Education A study of philosophy as a distinct discipline with its own terminology, concepts, and processes and how it functions in the field of education. Emphasis on an analysis of philosophy of education across cultural situations in Alaskan classrooms. Available only via Independent Learning. (Prerequisite: Junior standing or permission of the instructor.)</td>
</tr>
<tr>
<td>ED 424</td>
<td>3</td>
<td>Fall</td>
<td>Small High School Programs (2+3) Examination of existing and alternative curricular approaches to the design of small high school programs, with emphasis on problems of designing secondary programs for the small rural communities of Alaska. (Prerequisites: ED 201; admission to teacher education program. This course should be taken the semester prior to ED 453.)</td>
</tr>
<tr>
<td>ED 425</td>
<td>3</td>
<td>Spring</td>
<td>Community as an Educational Resource (2+3) Methods and techniques for developing and implementing a community-oriented curriculum with practical experience in identifying and using community educational resources. (Prerequisites: ED 201; admission to teacher education program. This course should be taken the semester prior to ED 453.)</td>
</tr>
<tr>
<td>ED 429</td>
<td>3</td>
<td>Spring</td>
<td>Microcomputer Application in the Classroom (2+2) Strategies for effective use of microcomputers in the classroom; understanding potential and limitations of the computer in the schools; developing classroom plans to take advantage of computer potentials; and evaluation of educational software. (Prerequisites: Upper division undergraduate or certified teacher status.)</td>
</tr>
<tr>
<td>ED 430</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Multicultural Teaching Techniques (2+3) Effective teaching strategies for cross-cultural and multicultural classrooms with attention to practices for secondary schools (small school design, computer-based instruction, multicultural programs, community-based education, interdisciplinary linkages of coursework, experiential education, productive thinking skills, and individual programmed instruction). Weekly participation in multicultural classrooms. (Prerequisites: ED 201; admission to Teacher Education Program. This course should be taken the semester prior to ED 453.)</td>
</tr>
<tr>
<td>ED 440</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Gender and Education (3+0) (Same as ED 640 and WMS 440) Educational practices and processes and their relation to the changing situation of women in society. Examination of schools as sites of pervasive gender socialization and discrimination as well as offering new possibilities for liberation. Topics include social construction of gender; patterns of access and achievement; gender as an organizing principle in schools and classrooms; and feminist agendas and strategies for change. (Prerequisite: SOC 101 or ED 201 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>ED 450</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Education and Cultural Transmission (3+0) Education as a socializing process with examination of issues related to cultural transmission in a multicultural environment. Emphasis on dynamics of cultural change. (Prerequisite: ED 330 and junior standing.)</td>
</tr>
<tr>
<td>ED 451</td>
<td>1-9</td>
<td>Fall, Spring</td>
<td>Practicum in Education Practical application of general ideas and techniques addressed in methods courses in which the student is currently enrolled or previously completed. Materials fee: $50.00 for any combination of ED 451, 452 or equivalent; concurrent enrollment with ED 402; permission of instructor.)</td>
</tr>
</tbody>
</table>
ED 452O 12 Credits Fall, Spring Elementary Student Teaching (1+33)
Supervised teaching in elementary schools approved by the department of education. Students should expect to be involved in the school setting for the entire school day for the entire university semester. The department may limit registration, determine assignments, and cancel the registration of students doing unsatisfactory work. (Prerequisites: See requirements for admission to student teaching.)

ED 453O 12 Credits Fall, Spring Secondary Student Teaching (1+33)
Supervised teaching in secondary schools approved by the department of education. Students should expect to be involved in the school setting for the entire school day for the entire university semester. The department may limit registration, determine assignments, and cancel the registration of students doing unsatisfactory work. (Prerequisites: See requirements for admission to student teaching.)

ED 454O 12 Credits Fall, Spring Student Teaching K-12 (1+33)
Supervised teaching in both elementary and secondary schools approved by the department of education. Open only to Music and P.E. majors seeking K-12 certification or to graduate students seeking K-12 small school certification. Students should expect to be involved in the school setting for the entire school day for the entire university semester. The department may limit registration, determine assignments, and cancel the registration of students doing unsatisfactory work. (Prerequisites: See requirements for admission to student teaching.)

ED 456 3 Credits Summer Orientation to Teaching in Rural Alaska (2+3)
Needs of rural schools, their environments and the recipients of school services with special attention given to cross-cultural educational issues. (Prerequisite: Permission of instructor.)

ED 462 3 Credits Fall Alaskan Environmental Education (3+0)
(Same as NRM 462)
Utilization of the environment inside and outside the formal classroom in all subject areas. Curriculum materials (K-12), interpretive and audiovisual aids, problem solving, and applications to situations from the public schools to summer camp, short courses, and workshops for individuals of any age. (Prerequisite: Junior standing or permission of instructor.)

ED 463 3 Credits Fall Working with FAS/FAE Children (2+4)
For families of children with FAS/FAE and professionals - teachers, social workers, and health workers who deal with these children. Guest speakers, interviews, and reading materials. Project in the development of activities to use with these children with FAS/FAE. Access to work in a school setting required. (Not available on Fairbanks campus.)

ED 470 3 Credits As Demand Warrants Human Resource Development (3+0)
Strategies and approaches which emphasize mobilization and utilization of human resources within general processes of socio-economic change and development in historical and cross-national contexts. (Prerequisite: Junior standing.)

ED 472 3 Credits Spring Marine Education (3+0)
Instructional techniques and methods for integrating marine and freshwater programs into schools and communities using elementary level Alaska Sea Week Curriculum Guides, plus secondary level materials. Survey of marine biology, oceanography, fisheries, birds, marine mammals, freshwater ecology and the social and political implications of coastal and river issues. (Prerequisites: BIOL 105, 106 and MSL 111 or its equivalent.)

ED 475 3 Credits Alternate Spring LOGO: A Computer Language for Teachers (3+0)
The study of the use of the LOGO language with Apple computers including the implications of this language for education its use in the curriculum. (Prerequisite: Upper division undergraduate or certified teacher status. Next offered: 1995-96.)

ED 488 3 Credits Spring Education and Schooling in the Russian Far East (3+0) s
(Same as ED 888)
Understanding Russia's educational system, culture, and its people. For students selected to participate in an exchange program with International Pedagogical University of Magadan. (Prerequisite: Enrollment in coursework leading to teacher certification.)

ED 489 3 Credits Spring Education and Schooling in Japan (3+0) s
(Same as ED 889)
Understanding Japan's educational system, culture, and its people. For students selected to participate in an exchange program with Hokkaido University of Education. (Prerequisites: Acceptance to the Teacher Education Program, successful completion of student teaching and permission of instructor.)

ED 490 3 Credits Fall, Spring Curriculum Development in Cultural Perspective (3+0)
Issues in development of curriculum programs and materials in a cross-cultural environment. Emphasis on process, context, and content as well as curriculum change and evaluation strategies. Students work on a curriculum development project applicable to their individual circumstances. (Prerequisite: ED 330.)

ED 580 1 Credit As Demand Warrants Wildlife and Wetlands Curricula (1+0)
Wildlife education curricula, focusing on strategies for teaching biological and ecological concepts related to the goose populations which nest in the Yukon-Kuskokwim delta; strategies for teaching students the value of wetlands as wildlife habitat, migration, how wildlife becomes endangered and extinct and ways to develop a sense of personal responsibility and decision-making skills about wildlife.

ED 583 3 Credits Spring Education and Schooling in the Russian Far East (3+0) s
(Same as ED 488)
Understanding Russia's educational system, culture, and its people. For students selected to participate in an exchange program with International Pedagogical University of Magadan. (Prerequisite: Enrollment in coursework leading to teacher certification.)

ED 589 3 Credits Spring Education and Schooling in Japan (3+0) s
(Same as ED 489)
Understanding Japan's educational system, culture, and its people. For students selected to participate in an exchange program with Hokkaido University of Education. (Prerequisites: Acceptance to the Teacher Education Program, successful completion of student teaching and permission of instructor.)
**Electrical Engineering**

A $25.00 per semester student computing facility user fee is assessed for School of Engineering courses. This fee is in addition to any labmaterial fees.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Period</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 102</td>
<td>3</td>
<td>Spring</td>
<td>Introduction to Electrical Engineering (3+0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Basic modern devices, concepts, technical skills, and instruments of electrical engineering. (Corequisite: MATH 200.)</td>
</tr>
<tr>
<td>EE 203</td>
<td>4</td>
<td>Fall</td>
<td>Electrical Engineering Fundamentals I (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Analysis of alternating current circuits using complex notation and phasor diagrams, resonance, transformers, Laplace analysis, the complex frequency plane, and three-phase circuits. Introduction to network and system analysis. Laboratory fee: $25.00. (Prerequisites: MATH 200, EE 102.)</td>
</tr>
<tr>
<td>EE 204</td>
<td>4</td>
<td>Spring</td>
<td>Electrical Engineering Fundamentals II (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electronics of vacuum and solid state devices, amplifier design, digital circuits, energy conversion, electromechanics, control systems, and instrumentation. Laboratory fee: $25.00. (Prerequisite: EE 203.)</td>
</tr>
<tr>
<td>EE 303</td>
<td>4</td>
<td>Fall</td>
<td>Electrical Machinery (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electromechanical energy conversion principles, characteristics and applications of transformers, DC machines, synchronous and induction machines. Introduction to electric power systems. Laboratory fee: $25.00. (Prerequisite: EE 204.)</td>
</tr>
<tr>
<td>EE 311</td>
<td>3</td>
<td>Fall</td>
<td>Applied Engineering Electromagnetics (3+0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Analysis and design of transmission lines and distributed linear circuits using impedance concepts. Development of electromagnetic field equations and their relation to circuit models. Magnetostatics and the magnetic circuit. Electromagnetic wave propagation, Application of the wave equation to engineering systems. (Prerequisites: PHYS 212, MATH 302, EE 204.)</td>
</tr>
<tr>
<td>EE 312</td>
<td>3</td>
<td>Spring</td>
<td>Electromagnetic Waves and Devices (3+0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Theory and design of antennas, waveguides and other periodic structures. Antenna arrays, broadband design techniques and related topics. Theory and design of practical communication links. (Prerequisites: EE 311, 331, MATH 302.)</td>
</tr>
<tr>
<td>EE 331</td>
<td>1</td>
<td>Fall</td>
<td>High Frequency Lab (0-3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Laboratory experiments in transmission lines, impedances, bridges, scattering parameters, parameters, hybrids, and waveguides. Laboratory fee: $25.00. (Corequisite: EE 311.)</td>
</tr>
<tr>
<td>EE 332</td>
<td>1</td>
<td>Spring</td>
<td>Electromagnetics Laboratory (0-3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Use of Maxwell's equations in analysis of waveguides, cavity resonators, transmission lines, antennas, and radio propagation. Laboratory fee: $25.00. (Corequisite: EE 312.)</td>
</tr>
<tr>
<td>EE 333W</td>
<td>4</td>
<td>Fall</td>
<td>Physical Electronics (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Basic properties of semiconductors. Principles of semiconductor devices, diodes, transistors, and integrated circuits. Laboratory fee: $25.00. (Prerequisite: EE 204, ENGL 211X or 211X.)</td>
</tr>
<tr>
<td>EE 334</td>
<td>4</td>
<td>Spring</td>
<td>Electronic Circuit Design (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Application of semiconductor devices in circuit design in computation, automatic control, and communication. Laboratory fee: $25.00. (Prerequisite: EE 333.)</td>
</tr>
<tr>
<td>EE 342</td>
<td>4</td>
<td>Spring</td>
<td>Computer Organization II (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Techniques of constructing input/output device drivers, 8 and 16 bit microprocessor organization, operation and programming, and central processor unit microprogrammable bit slice devices. Laboratory fee: $25.00. (Prerequisite: EE 341.)</td>
</tr>
<tr>
<td>EE 343</td>
<td>4</td>
<td>Fall</td>
<td>Digital Systems Analysis and Design (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Introductory principles of digital systems analysis and synthesis. Combinational and sequential logic functions leading to state machine design. Implementation techniques from integrated circuits (IC) through programmable logic devices (PLD). Computer architecture from the perspective of state machine implementation. (Prerequisites: EE 201 or CS 201, one year of college physics for CS or EE 204 for EE.)</td>
</tr>
<tr>
<td>EE 353</td>
<td>3</td>
<td>Fall</td>
<td>Circuit Theory I (3+0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Transient analysis by Laplace transform, state variable, and Fourier methods, filter networks, and computer-aided analysis. (Prerequisite: EE 204.)</td>
</tr>
<tr>
<td>EE 354</td>
<td>3</td>
<td>Spring</td>
<td>Engineering Signal Analysis (3+0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Analysis of both continuous and discrete-time signals and systems. Fundamentals and applications of probability, statistics and stochastic processes to linear, time-invariant systems. Development and applications of convolution, z-transform and Laplace transform theory to filters, modulation, multiplexing, sampling, interpolation, and related processes. (Prerequisites: EE 353, MATH 502.)</td>
</tr>
<tr>
<td>EE 404</td>
<td>4</td>
<td>Spring</td>
<td>Electrical Power Systems (3-3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Alternate energy sources, transmission system components, elements of control, system protection, power flow, and computer-aided power flow analysis. Laboratory fee: $25.00. (Prerequisite: EE 303.)</td>
</tr>
<tr>
<td>EE 406</td>
<td>4</td>
<td>Fall</td>
<td>Electrical Power Engineering (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Symmetrical and unsymmetrical faults, protective relaying, economic operation of power systems, dynamic power system stability, and computer aided fault and transient stability analysis. Laboratory fee: $25.00. (Prerequisite: EE 404 or equivalent.)</td>
</tr>
<tr>
<td>EE 434W,O</td>
<td>4</td>
<td>Spring</td>
<td>Instrumentation Systems (3+3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Analysis and design of instrumentation systems: static and dynamic characteristics, accuracy, noise, reliability, sensors, signal conditioning, typical measurement systems. Laboratory fee: $25.00. (Prerequisites: EE 334, 354, 442 and senior standing.)</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTIONS / 143

EE 443 4 Credits Spring
Digital Systems Analysis and Design II (3+3)
Microcomputer interfacing, timing/transmission line effects in logic design; analog-digital and digital-analog converters; basic digital filtering with microcomputers; 8 bit and 16 bit microprocessor organization, operation and programming; computer peripherals; digital signal processing hardware. Laboratory fee: $25.00.**
(Prerequisite: EE 343.)

EE 451 4 Credits Fall
Digital Signal Processing (3+3)
Discrete Fourier Transform (DFT) analyses and applications; FFT implementations; discrete convolution/correlation/statistical theory with application; errors and noise analysis; FIR/IFIR filter design and implementation techniques. Laboratory fee: $25.00. (Prerequisite: EE 354 or equivalent.)

EE 461 4 Credits all
Communication Systems (3+3)
Theory design and implementation of communication systems. Measurement of modulation, noise, channel spectrum, satellite link budget, and microwave path design. Laboratory fee: $25.00. (Prerequisites: EE 354 and senior standing.)

EE 464W,0 3 Credits Spring
Communication Networks (3+0)

EE 471 4 Credits Spring
Fundamentals of Automatic Control (4+0)
Linear system representation by transfer functions and state variables. Feedback, time and frequency response of linear systems. Identification. Controllability and observability. Stability by Routh-Hurwitz criterion and frequency plane methods. Specifications of higher order linear systems. System design and compensation; introduction to sampled data systems. (Prerequisites: EE 353 and MATH 302.)

EE 603 3 Credits Alternate Fall
Advanced Electric Power Engineering Operations (3+0)

EE 604 3 Credits Alternate Fall
Electric Power System Transients (3+0)

EE 605 3 Credits Alternate Spring
Power System Stability and Control (3+0)

EE 606 3 Credits Alternate Spring
Electric Power System Protection (3+0)

EE 610 3 Credits Alternate Fall
Linear Systems (3+0)

EE 632 3 Credits As Demand Warrants
Quantum Electronics (3+0)

EE 634 3 Credits Alternate Fall
Microwave Design I (2+3)

EE 635 3 Credits Alternate Spring
Microwave Design II (3+0)

EE 634W,0 3 Credits Fall
VLSI in Computer System Design (2+3)

EE 644 1 Credit Spring
VLSI Fabrication and Testing Practicum (0+3)
(Same as CS 644)

EE 652 3 Credits Alternate Spring
Adaptive Systems and Neural Networks (3+0)

EE 656 3 Credits Alternate Spring
Space Systems Engineering (3+0)

EE 662 3 Credits Alternate Fall
Digital Communication Theory (3+0)

EE 664 3 Credits As Demand Warrants
Data Communication Techniques (3+0)

EE 665 3 Credits Alternate Spring
Antennas (3+0)

EE 668 3 Credits Alternate Fall
Microwave Systems Engineering (3+0)

EE 669 3 Credits Alternate Spring
Radiowave Propagation (3+0)

EE 671 3 Credits As Demand Warrants
Digital Control Systems (3+0)

Electronics Technology

ELT 101 4 Credits As Demand Warrants
Basic Electronics: DC Physics (3+0)
Basic terms and units. Use of test equipment, hand tools and techniques of soldering. Ohm's law, fundamentals of magnetism, DC circuit analysis, inductance and capacitance in DC circuits. Laboratory fee: $10.00.

ELT 102 4 Credits As Demand Warrants
Basic Electronics: AC Physics (3+0)
Principles of alternating current, vectors, phase relationships, inductive and capacitive reactance, and impedance. AC circuit analysis, series and parallel resonant circuits. Transformers, network analysis. Laboratory fee: $20.00.

ELT 108 3 Credits As Demand Warrants
Arithmetic for DC Circuits (3+0)
Review of arithmetic. Selected topics in algebra, trigonometry, graphs, analytic geometry, waveform analysis and decibel calculations. Calculations necessary for DC theory and continued study of electronics.

ELT 109 3Credits As Demand Warrants
Arithmetic for AC Circuits (3+0)
Selected topics in algebra, trigonometry, graphs analytic geometry, waveform analysis and decibel calculations. Calculations necessary for AC theory and continued study of electronics.

ELT 111 1-3 Credits As Demand Warrants
Amateur Radio Licensing (1-3+0)
Overview of amateur radio. Code and radio theory provided for the Novice and General Amateur License Examination. Community emergency communications, net operations, repeaters, and public classroom applications for those already licensed.

ELT 122 3 Credits As Demand Warrants
Introduction to Electronic Devices (3+0)
Fundamentals of vacuum tubes and transistors. Emphasis on types of construction, interpretation of design parameters and applicability to electronic circuits.

ELT 123 3 Credits As Demand Warrants
Electronic Circuit Fundamentals (3+0)
Analysis of basic electronic circuits. Power supplies, amplifiers, and oscillators. Operational and failure analysis of basic circuits with troubleshooting procedures for each type.

ELT 171 3 Credits As Demand Warrants
National Electric Code Study (3+0)
Systematic study of the National Electric Code and rules governing minimum requirements for installation of electrical services, feeders and branch circuits and requirements for construction and installation of electrical equipment.

Emergency Medical Technology

EMS 103 3 Credits Fall, Spring
Emergency Trauma Training First Responder (3+0)
Designed to provide basic emergency care knowledge and skills to the student who will provide the first emergency care. The objective of the first person on the emergency scene will be to recognize the needs of the victim and deliver quality care to the patient, minimizing discomfort and preventing further complications. Materials fee: $15.00.

EMS 105 1 Credit Fall, Spring
Emergency Trauma Training Refresher (1+0)
For individuals who have been previously certified in Emergency Trauma Training (40 hrs). Certification is valid for two years. Materials fee: $15.00. (Prerequisite: EMS 103 or ETT Certification which may not be expired more than one calendar year.)

EMS 119 6 Credits Fall, Spring
EMT: Emergency Medical Technician I (5+3)
Techniques to administer lifesaving first aid and operate an ambulance. Upon successful completion of this course, the student will meet the Alaska requirements for certification as an Emergency Medical Technician. Materials fee: $75.00.
Engineering and Science Management

A $25.00 per semester student computing facility user fee is assessed for School of Engineering courses. This fee is in addition to any lab/material fees.

ESM 401 Credits Arr. Fall
Construction Cost Estimating and Bid Preparation (3+0)
Compilation and analysis of the many items that influence and contribute to the cost of projects to be constructed. Preparation of cost proposals and study of bidding procedures. Laboratory fee: $20.00.

ESM 450W 3 Credits* Fall, Spring
Economic Analysis and Operations (3+0)
Fundamentals of engineering economy, project scheduling, estimating, legal principles, professional ethics, and human relations. Laboratory fee: $20.00. (Not offered for credit toward the Master of Science in Engineering Management or Science Management. Prerequisites: ES 201 and senior standing in engineering or permission of instructor. Undergraduate engineering students who are taking graduate ESM courses as technical electives should have completed or be concurrently enrolled in ESM 450.) *2 Credits meet the writing intensive requirement for the core curriculum.

ESM 601 3 Credits Fall
Engineers in Organizations (3+0)

ESM 605 3 Credits Fall
ENGINEERING ECONOMY (3+0)

ESM 608 3 Credits Fall
Legal Principles for Engineering Management (3+0)

ESM 609 3 Credits Alternate Fall
Project Management (3+0)

ESM 620 3 Credits Every Third Semester
Statistics for ESM (3+0)

ESM 621 3 Credits Spring
Operations Research (3+0)

ESM 623 3 Credits Fall, Spring
Computer Programming for Engineering Managers (3+0)

ESM 684 3 Credits Spring and Fall
Engineering Management Project (3+0)

Engineering Science

A $25.00 per semester student computing facility user fee is assessed for School of Engineering courses. This fee is in addition to any lab/material fees.

ESM 124 1 Credit As Demand Warrants
EMT: Emergency Medical Technician Refresher (1+0)
Review of basic skills and emergency medical procedures at the Basic EMT 1, 2 and 3 level. Covers emergency medical care procedural changes, newly developed equipment and its use, changes in State licensure or other medical-legal requirements. Materials fee: $50.00. (Prerequisite: EMT 1, 2 or 3 certification that may not be expired more than one calendar year.)

ESM 220 3 Credits As Demand Warrants
EMT: Emergency Medical Technician II (3+0)
Improvement of EMT skills in trauma intervention for the seriously injured patient through advanced techniques in fluid therapy. Use of MAST pants, utilization of specific drug therapy and advanced airway care covered. Materials fee: $115.00. (Prerequisite: EMT 1 certification as described in State EMT regulations; 7AAC26.010.)

ESM 231 2 Credit As Demand Warrants
Emergency Medical Technician III (1.5+1.5)
Introduction to basic cardiac anatomy and physiology, cardiac electrophysiology, recognition and treatment of basic lethal arrhythmias, use of defibrillator monitor, use of morphine, lidocaine and epinephrine 1:1000. Recognition and treatment of external trauma. Materials fee: $40.00. (Prerequisite: EMT 2 certification as described in State EMT regulations; 7AAC26.010.)

ESM 247 A, B 2 Credits As Demand Warrants
Arctic Survival (1+2)
Basic survival skills and techniques needed in northern latitudes. Prepares students to face survival situations in an arctic environment and enables them to maintain equipment, skills, and attitudes in a state of readiness. Includes 1 credit in lecture 1 in practical; students must take lecture portion to be eligible for practicum.

ESM 301 3 Credits Fall
Elements of Electrical Engineering (3+0)
Elementary circuits and theorems, natural, forced and steady state response, principles of electronic devices, circuit models and system parameters, elements of measurement and instrumentation, and characteristics of DC machines, and AC machines and transformers. (Prerequisite: ESM 202 or permission of instructor.)

ESM 308 3 Credits Spring
Instrumentation and Measurement (2+3)
Instrumentation theory and concepts of digital and analog devices, transducers, data sensing transmission, recording, and display, instrumentation system, remote sensing, and hostile environmental conditions. Laboratory fee: $25.00. (Prerequisite: ESM 307.)

ESM 331 3 Credits Fall, Spring
Mechanics of Materials (2+3)
Analysis of internal forces in members subjected to axial, torsional, and flexural loads, singly and in combination. Stress-strain relationships and material property definitions; shear and moment diagrams, Mohr's Circle. Applications include beams, columns, connections, indeterminate cases. (Prerequisites: ESM 208 and ESM 209 and MATH 210.)

ESM 334 3 Credits Fall
Elements of Material Science/Engineering (2+3)
(Same as ME 334)
Properties of engineering materials. Crystal structure, defect structure, structure and properties, aspects of metal processing, heat treatment, joining, testing, and failure analysis for engineering applications and design. Laboratory fee: $15.00. (Prerequisites: CHEM 106 and PHYS 212.)

ESM 341 4 Credits Fall, Spring
Fluid Mechanics (3+3)
Statics and dynamics of fluids; energy and momentum principles, dimensional analysis; flow in open channels, closed conduits and around submerged bodies. Laboratory fee: $25.00. (Prerequisites: ESM 201 and ESM 208 or ESM 210.)

ESM 346 3 Credits Fall, Spring
Basic Thermodynamics (3+0)
Thermodynamic systems, properties, processes, and cycles. Fundamental principles of thermodynamics (first and second laws), and elementary applications. (Prerequisites: ESM 201 and PHYS 211.)

ESM 429 3 Credits Fall
Ethics and Liability in Professional Practice (2+3)
The professional, moral, ethical, and legal responsibilities of a professional in today's society and workplace. (Prerequisite: Senior or graduate standing or consent of instructor.)
ENGLISH

The written communication requirement for any baccalaureate degree is the successful completion of ENGL 111X and ENGL 211X or 213X or equivalent.

DEVELOPMENTAL ENGLISH

DEVE 060 3 Credits As Demand Warrants
Elementary Exposition (3+0)
Intensive work in the process of writing and revising to improve one's writing skills. Placement by examination.

DEVE 068 1-3 Credits Full, Spring
English Skills Laboratory (0+3-9)
Individualized instruction in language skills. Open entry/open exit, one credit lab modules in spelling/vocabulary, writing, and grammar usage. Enrollment in one or more based on diagnosed need or desire; may be repeated. Counts as elective credit only; does not fulfill degree requirements in written communications or humanities.

DEVE 070 3 Credits As Demand Warrants
Preparatory College English (3+0)
Instruction in writing to improve students' fluency and accuracy and communication skills. Preparation for ENGL 111. Placement by examination or student decision. Materials fee: $0.00-5.00. A student may elect to fulfill one half of the composition requirement by completing credit by examination. One of the required English courses. Permission of the Director of Communications in the English Department is required to begin all challenge procedures. Required composition courses may also be taken through University of Alaska Fairbanks correspondence study.

ENGLISH

ENGL 104 3 Credits As Demand Warrants
Institute on Language, Thought and Culture (3+0)
Development of critical thinking, writing, and reading skills using the Bard College model. The intensive institute establishes and nurtures learning communities which support bold thinking, risk-taking, collaboration, and independence. Offered only at the Kuskokwim Campus.

ENGL 111X 3 Credits Fall, Spring
Methods of Written Communication (3+0)
Expository prose, including topic development. Practice in developing, organizing, writing, revising, and editing compositions. Materials fee: $8.00. Also available via Independent Learning. (Prerequisite: Placement examination or DEVE 070.)

ENGL 190H 3 Credits Fall, Spring
Honors English Composition (3+0)
Extensive readings in a variety of disciplines. Frequent writing assignments addressing a wide range of topics for specific purposes and audiences. Emphasis upon writing as a tool for learning across the curriculum. ENGL 190H may be substituted for ENGL 111X. (Prerequisite: Admission to the Honors Program or recommendations of instructor.)

ENGL 200X 3 Credits Fall, Spring
World Literature (3+0) h
(Same as FL 200X)
Introduction to the reading and appreciation of a wide variety of literary texts from different cultures. Includes exposure to a variety of approaches to myth, poetry, storytelling and drama. Students will gain an understanding of cultural differences and universals in text from American, American minority, Western European and non-Western sources. Specific content to be announced at time of registration. Course may be repeated for credit when content varies. Materials fee: $8.00. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 211X 3 Credits Fall, Spring
Intermediate Exposition, with Modes of Literature (3+0)
Instruction in writing through close analysis of literature. Research paper required. Materials fee: $8.00. Also available via Independent Learning. (Prerequisites: Sophomore standing and completion of ENGL 111X or its equivalent.)

ENGL 212 3 Credits As Demand Warrants
Business, Grant, and Report Writing (3+0)
Forms and techniques of business, grant, and report writing. (Special emphasis may be placed on one or another of these topics in a given semester.) Does not fulfill the second half of the baccalaureate requirements in written communication. (Prerequisite: ENGL 111X.)

ENGL 213X 3 Credits Fall, Spring
Intermediate Exposition (3+0)
Instruction in writing through close analysis of expository prose from the social and natural sciences. Research paper required. Materials fee: $8.00. (Prerequisites: Sophomore standing and completion of ENGL 111X or its equivalent.) NOTE: Neither ENGL 211X nor ENGL 213X can be used as a prerequisite for any other course or for any particular course of study. However, either one of them will fulfill the second half of the requirement in written communication for the baccalaureate degree. A student who has taken one of these courses before declaring a major in which the other course may be considered more appropriate, or a student who changes major from a field in which one of these courses is considered more appropriate than the other, will not be required to take the other course.

ENGL 215 3 Credits Spring
Introduction to Poetry (3+0) h
Analysis and appreciation of the various kinds of writing in verse (lyric, narrative, and other poetry), including the terminology used to describe poetic techniques. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 216 3 Credits Fall, Spring
Introduction to Fiction (3+0) h
Analysis and appreciation of selected novels and short stories, including the terminology used to describe fictional techniques. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 217 3 Credits Spring
Introduction to the Study of Film (2+2) h
(As Same as JB 217)
An appreciation course designed to introduce the student to the various forms of cinematic art with special emphasis on humanistic and artistic aspects. (Prerequisite: ENGL 111X.)

ENGL 218 3 Credits Spring
Themes in Literature (3+0) h
Exploration of literary themes in various genres of literature, including fiction, poetry and drama. Such themes as "Women in Literature," "Literature of the North," and "Detective Stories in Literature and Film" may be offered. Specific themes are announced at registration. Course may be repeated for credit when content varies. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 219 3 Credits Fall, Spring
Aleut Narrative Art (3+0) h
Introduction to and survey of the oral and written literature of the Unangan, the Aleut people. All works in English translation, though some supplementary materials in the Aleut language (eastern and western dialects) offered at the Aleutian campus. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 220 3-7 Credits Fall
Creative Writing - Fiction (3+0) h
Forms and techniques of fiction for beginning students; discussion of students' work in class and in individual conferences. Materials fee: $10.00. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 221 3-7 Credits Spring
English Language Proficiency (3+Var.)
Intensive listening, speaking, reading, and writing in English. Especially recommended for all students for whom English is a foreign language. These courses do not meet the general degree requirements in written communications and are not classified as humanities. (Prerequisites: Open only to students for whom English is a foreign language. Permission of instructor required.)

ENGL 271 3 Credits Fall, Spring
Introduction to Creative Writing - Fiction (3+0) h
Forms and techniques of fiction for beginning students; discussion of students' work in class and in individual conferences. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 272 3 Credits Fall, Spring
Introduction to Creative Writing - Poetry (3+0) h
Forms and techniques of poetry for beginning students; discussion of students' work in class and in individual conferences. Materials fee: $5.00. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 290H 2 Credits Fall
Summer Reading Program (Honors) (2+0) h
Selected readings in a variety of disciplines. Group discussions and written responses to the readings following in the fall. Students keep a summer journal. May be repeated for credit. (Prerequisite: ENGL 111X or enrollment in the Honors Program.)

ENGL 301 3 Credits Fall
Continental Literature in Translation: From the Ancient World through the Renaissance (3+0) h
Readings in Greek plays, The Iliad, The Odyssey, Bible, Dante: the classical background out of which western literary tradition has risen. (Prerequisite: ENGL 111X or permission of instructor.)

ENGL 306 3 Credits Fall
Survey of American Literature: Beginnings to the Civil War (3+0) h
Comprehensive study of American thought as reflected in the works of early explorers, Calvinists, Rationalists, and Transcendentalists. (Prerequisite: ENGL 111X or permission of instructor.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 307</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey of American Literature: Civil War to the Present (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Comprehensive study of American though as reflected in the writers of Realism, Naturalism, Modernism, and Post-modernism. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 308</td>
<td>3</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey of British Literature: Beowulf to the Romantic Period (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey of writers and works in Old and Middle English, including Chaucer, through Elizabethan period (Shakespeare), Restoration, and Neoclassic Period of the 18th Century. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 309</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey of British Literature: Romantic Period to the Present (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey of writers and works from the early Romantic Period (Blake and Burns), through the Victorian period, James Joyce, and Stream-of- Consciousness, to the present. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 310</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literary Criticism (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History and principles of literary criticism, from earliest days to present. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 313W</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing Non-Fiction Prose (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Instruction in writing for students who wish to develop proficiency in organizing and composing essays on factual material in which they have genuine interest. Readings and research paper required. Course does not fulfill the second half of the general degree requirement in written communication. (Prerequisites: Junior standing, ENGL 211X or 213X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 314W, Q2</td>
<td>3 Credits</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writing business letters (letters of inquiry, complaint, evaluation, and job application with resume), preparing tables, graphs, process descriptions, technical instructions, abstracts, grant proposals, and technical reports (progress, laboratory, survey, incident report, susceptibility, and research). Course does not fulfill the second half of the requirement in written communication. Materials fee: $8.00. (Prerequisites: Junior standing and ENGL 211X or 213X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 317</td>
<td>3</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Traditional English Grammar (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identification and usage of the more common types of phrase and sentence structures. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 318</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Modern English Grammar (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Structure of current English as seen through traditional and contemporary grammatical theories. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 333</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Women's Literature (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Same as WMS 333)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reading, analyzing, and synthesizing literary works dealing with the social, cultural and political implications of patriarchal structures and traditions from the perspective of feminist theory and criticism. Focus may be on a particular theme, period, or genre, but readings will include both primary and secondary texts. (Prerequisite: ENGL 111X or ENGL 211X recommended.)</td>
</tr>
<tr>
<td>ENGL 340</td>
<td>3</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contemporary Native American Literature (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Same as ANS 349)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contemporary Native American writing in English, including novels, short stories, poetry, and plays. Examples of Native American film when related to a writing. Works discussed in relation to cultural contexts and interpretations. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 349</td>
<td>3</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Narrative Art of Alaska Native Peoples (in English Translation) (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Same as ANS 349)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Traditional and historical tales by Aleut, Eskimo, Athabaskan, Eyak, Tlingit, Haida, and Tsimshian storytellers. Bibliography, Alaska Native genres and viewpoints, and structural and thematic features of tales. (Prerequisite: ENGL 111X or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 359</td>
<td>3</td>
<td>Alternate Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literature of Alaska and the Yukon Territory (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Representative fiction, verse, and nonfiction dealing with Alaska and the Yukon Territory. Also available via Independent Learning. (Prerequisite: ENGL 111X or permission of instructor.) Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ENGL 371W, O</td>
<td>3 Credits</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practice and guidance in writing fiction, poetry, drama, or essays. Students' work read and discussed in class and in conference with the instructor. Close study of the techniques of established writers. Materials fee: $10.00. (Prerequisite: ENGL 271 or ENGL 272 or permission of instructor.)</td>
</tr>
<tr>
<td>ENGL 403W, O</td>
<td>3 Credits</td>
<td>Every Third Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American literature of the mid-nineteenth century: Poe through Whitman. (Prerequisite: ENGL 111X or permission of instructor. ENGL 306 recommended but not required. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>ENGL 404</td>
<td>3</td>
<td>Every Third Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American Realism (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American literature from the Civil War to World War I: Twain through James. (Prerequisite: ENGL 111X or permission of instructor. ENGL 307 desirable but not required. ENGL 306 desirable but not required. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ENGL 405</td>
<td>3</td>
<td>Every Third Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>British Writers of the 19th Century: Victorian Period (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>English literary realism including authors such as Byron, Keats, Shelley, Coleridge, Wordsworth, Austen, the Bronte sisters, and Scott. (Prerequisite: ENGL 111X or permission of instructor. ENGL 308 desirable but not required. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ENGL 406</td>
<td>3</td>
<td>Every Third Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>British Writers of the 19th Century: Victorian Period (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Impact of industrialization, social reformation, religious controversy, and philosophical attitudes on literature. Authors to include (but not limited to): Browning, Tennyson, Thackeray, Eliot, Arnold, Dickens, Hazlitt, Ruskin, and Meredith. (Prerequisite: ENGL 111X or permission of instructor. ENGL 309 desirable but not required. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ENGL 407</td>
<td>3</td>
<td>Every Third Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>British Writers of the Restoration and 18th Century: Neo-Classical Period (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Developments in drama, verse, and prose reflecting new forces in government, religion, and society during the Augustan Age. Attention to the mode of satire and to the fashion of sentimentalism in all genres. Authors to include (but not limited to): Dryden, Defoe, Addison, Steele, Swift, Pope, Johnson, Boswell, Goldsmith, and Sheridan. (Prerequisites: ENGL 111X and junior standing or permission of instructor. ENGL 308 recommended. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>ENGL 408W, O</td>
<td>3 Credits</td>
<td>Every Third Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Writers who contributed to the development of a national literary identity: Bradstreet through Cooper. (Prerequisites: ENGL 111X and junior standing or permission of instructor. ENGL 308 recommended but not required. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ENGL 414W</td>
<td>3</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research Writing (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Practice in reporting primary and secondary research in the forms and styles appropriate to the student's field. Preference given to seniors. (Prerequisites: ENGL 111X and 211X or 213X or their equivalent.)</td>
</tr>
<tr>
<td>ENGL 421</td>
<td>3</td>
<td>Alternate Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chaucer and His Age (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major poetry of Chaucer and his contemporaries, with emphasis on The Canterbury Tales, and survey of criticism. (Prerequisite: ENGL 111X or permission of instructor. ENGL 308 desirable but not required. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ENGL 422W</td>
<td>3</td>
<td>Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shakespeare: History Plays and Tragedies (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major chronicle plays and tragedies, including significant criticism. (Prerequisite: ENGL 111X or permission of instructor. ENGL 308 desirable but not required.)</td>
</tr>
<tr>
<td>ENGL 425W</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shakespeare: Comedies and Non-Dramatic Poetry (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major comedies and non-dramatic poems, including significant criticism. (Prerequisite: ENGL 111X or permission of instructor. ENGL 308 desirable but not required.)</td>
</tr>
<tr>
<td>ENGL 426</td>
<td>3</td>
<td>Every Third Fall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Milton (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major poetry and prose, and survey of Miltonian criticism. (Prerequisite: ENGL 111X or permission of instructor. ENGL 308 desirable but not required. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>ENGL 444W</td>
<td>3</td>
<td>Every Third Spring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fiction in Translation (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major fiction in English translation. (Prerequisite: ENGL 111X or permission of instructor. Next offered: 1996-97.)</td>
</tr>
</tbody>
</table>
ENGL 445 3 Credits Alternate Fall
20th-Century Drama: From Chekhov to Ionesco (3+0) h
The major dramatists and their achievements. (Prerequisite: ENGL 111X or permission of instructor. Next offered: 1996-97.)

ENGL 446 3 Credits Alternate Spring
Major Modern and Contemporary Poetry (3+0) h
Focus on the present. (Prerequisite: ENGL 111X or permission of instructor. Next offered: 1996-97.)

ENGL 447 3 Credits Alternate Fall
20th-Century British Prose (3+0) h
Study of fiction and nonfiction prose, modern and contemporary. (Prerequisite: ENGL 111X or permission of instructor. Next offered: 1996-97.)

ENGL 448 3 Credits Alternate Spring
20th-Century American Prose (3+0) h
Study of fiction and nonfiction prose, modern and contemporary. (Prerequisite: ENGL 111X or permission of instructor. Next offered: 1996-97.)

ENGL 452 3 Credits Every Third Fall
The British Novel to 1900 (3+0) h
Origin and development of the novel with concentration on significant novelists from Daniel Defoe to Thomas Hardy. (Prerequisite: ENGL 111X or permission of instructor. Next offered: 1996-97.)

ENGL 462 3 Credits Alternate Spring
Applied English Linguistics (3+0) h
Topics(s) for each offering of the course are announced. Examples are teaching English as a second language, dialects and education, dictionaries, stylistics, and composition. (Prerequisite: ENGL 111X or permission of instructor. Next offered: 1995-96.)

ENGL 471W 3 Credits Fall, Spring
Undergraduate Writers' Workshop (3+0) h
Discussion of craft and techniques and student work. For advanced students who prepare a manuscript as a final project. May be repeated one time for credit. Materials fee: $10.00. (Prerequisite: ENGL 371 or permission of instructor.)

ENGL 472 3 Credits Alternate Spring
History of the English Language (3+0) h
Origin and development of the English language from prehistoric times to the present. (Prerequisite: ENGL 111X or permission of instructor. ENGL 318 or a linguistics course is desirable, but not required. Next offered: 1996-97.)

ENGL 485 3 Credits Alternate Spring
Teaching Composition in the Schools (3+0) h
Theoretical background and workshop experience for teaching composition in middle and high schools with current pedagogy on teaching of writing stressed. Variety of teaching methods demonstrated, practiced and discussed. (Prerequisites: Completion of university composition requirement with grade of "B" or higher, or permission of instructor. Next offered: 1995-96.)

ENGL 601 3 Credits Spring
Bibliography, Methods, and Criticism (3+0)

ENGL 603 3 Credits Every Third Fall
Studies in British Literature: Old and Middle English (3+0)

ENGL 604 3 Credits Alternate Fall
Studies in British Literature: Renaissance and 17th Century (3+0)

ENGL 606 3 Credits Alternate Fall
Studies in British Literature: Restoration and 18th Century (3+0)

ENGL 607 3 Credits Alternate Fall
Studies in British Literature: 19th Century (3+0)

ENGL 608 3 Credits Alternate Spring
Studies in Modern British Literature (3+0)

ENGL 609 3 Credits Alternate Spring
Early American Literature (3+0)

ENGL 611 3 Credits Alternate Fall
Nineteenth-Century American Literature (3+0)

ENGL 612 3 Credits Alternate Spring
Modern American Literature (3+0)

ENGL 615 3 Credits Alternate Spring
Contemporary Literature (3+0)

ENGL 620 3 Credits Alternate Spring
Images of the North (3+0)
(Same as NORS 620)

ENGL 651 3 Credits
Internship in Publishing (3+1)

ENGL 671 Credits Arr.
Writers' Workshop

ENGL 673 3 Credits Professional Writing Workshop (3+0)

ENGL 681 3 Credits Forms of Poetry (3+0)

ENGL 682 3 Credits Forms of Fiction (3+0)

ENGL 683 3 Credits Forms of Drama (3+0)

ENGL 684 3 Credits Forms of Non-Fiction Prose (3+0)

ENGL 685 3 Credits Teaching College Composition (3+0)

ENGL 687 3 Credits Writing Professional Prose (3+0)

ENGL 688 3 Credits Audiovisual Script Writing (3+0)

ENGL 689 3 Credits Editing Prose (3+0)

ENGL 692 Credits Arr.
Graduate Seminar

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 445</td>
<td>20th-Century Drama: From Chekhov to Ionesco</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. Next offered: 1996-97.</td>
</tr>
<tr>
<td>ENGL 446</td>
<td>Major Modern and Contemporary Poetry</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. Next offered: 1996-97.</td>
</tr>
<tr>
<td>ENGL 447</td>
<td>20th-Century British Prose</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. Next offered: 1996-97.</td>
</tr>
<tr>
<td>ENGL 448</td>
<td>20th-Century American Prose</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. Next offered: 1996-97.</td>
</tr>
<tr>
<td>ENGL 452</td>
<td>The British Novel to 1900</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. Next offered: 1996-97.</td>
</tr>
<tr>
<td>ENGL 462</td>
<td>Applied English Linguistics</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. Next offered: 1995-96.</td>
</tr>
<tr>
<td>ENGL 471W</td>
<td>Undergraduate Writers' Workshop</td>
<td>3</td>
<td>ENGL 371 or permission of instructor.</td>
</tr>
<tr>
<td>ENGL 472</td>
<td>History of the English Language</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. ENGL 318 or a linguistics course is desirable, but not required. Next offered: 1996-97.</td>
</tr>
<tr>
<td>ENGL 485</td>
<td>Teaching Composition in the Schools</td>
<td>3</td>
<td>ENGL 111X or permission of instructor. Next offered: 1995-96.</td>
</tr>
<tr>
<td>ENGL 601</td>
<td>Bibliography, Methods, and Criticism</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 603</td>
<td>Studies in British Literature: Old and Middle English</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 604</td>
<td>Studies in British Literature: Renaissance and 17th Century</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 606</td>
<td>Studies in British Literature: Restoration and 18th Century</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 607</td>
<td>Studies in British Literature: 19th Century</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 608</td>
<td>Studies in Modern British Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 609</td>
<td>Early American Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 611</td>
<td>Nineteenth-Century American Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 612</td>
<td>Modern American Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 615</td>
<td>Contemporary Literature</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 620</td>
<td>Images of the North</td>
<td>3</td>
<td>ENGL 620</td>
</tr>
<tr>
<td>ENGL 651</td>
<td>Internship in Publishing</td>
<td>3+1</td>
<td></td>
</tr>
<tr>
<td>ENGL 671</td>
<td>Writers' Workshop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGL 673</td>
<td>Professional Writing Workshop</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 681</td>
<td>Forms of Poetry</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 682</td>
<td>Forms of Fiction</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 683</td>
<td>Forms of Drama</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 684</td>
<td>Forms of Non-Fiction Prose</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 685</td>
<td>Teaching College Composition</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 687</td>
<td>Writing Professional Prose</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 688</td>
<td>Audiovisual Script Writing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 689</td>
<td>Editing Prose</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 692</td>
<td>Graduate Seminar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**English as a Second Language**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESLG 051</td>
<td>1-3 Credits</td>
<td></td>
<td>As Demand Warrants</td>
</tr>
<tr>
<td>ESLG 061</td>
<td>1-3 Credits</td>
<td></td>
<td>As Demand Warrants</td>
</tr>
<tr>
<td>ESLG 071</td>
<td>1-3 Credits</td>
<td></td>
<td>As Demand Warrants</td>
</tr>
</tbody>
</table>

**Environmental Quality Engineering/Science**

A $25.00 per semester student computing facility user fee is assessed for School of Engineering courses. This fee is in addition to any lab/material fees.

EQS 201 3 Credits Spring
Environmental Management (3+0) h
Social processes which affect the environment including law, environmental assessment, social/economic constraints, political processes and society's influence on environmental values. Topics include NEPA, energy sources and impacts, population control, resource development, conservation and preservation, acid rain, greenhouse effect, deforestation, pollution and hazardous waste abatement and treatment strategies. Case studies used. Course integrated with and complements NRM 101.
Eskimo

ESK 101 5 Credits Fall
Elementary Central Yup'ik Eskimo (5+0) h
Introduction to Central Yup'ik, the language of the Yukon and Kuskokwim delta and Bristol Bay. Open to both speakers and non-speakers. For speakers the course provides literacy and grammatical analysis. For others, it provides a framework for learning to speak, read, and write the language. Consideration given to dialect differences.

ESK 102 5 Credits Spring
Intermediate Central Yup'ik Eskimo (5+0) h
Continuation of ESK 101 and 102. Increasing emphasis on speaking, reading, and writing. (Prerequisite: ESK 104 or instructor permission.)

ESK 103 1-3 Credits As Demand Warrants
Entry-level course to learn to speak and understand Yup'ik Eskimo. Focus on communication in everyday situations. Kuskokwim and Northwest Campuses only. (Prerequisite: ESK 103 for 104 or permission of instructor.)

ESK 104 1-3 Credits As Demand Warrants
Conversational Central Yup'ik (1-3)
Entry-level course to learn to speak and understand Yup'ik Eskimo. Focus on communication in everyday situations. Kuskokwim and Northwest Campuses only. (Prerequisite: ESK 103 for 104 or permission of instructor.)

ESK 109 3 Credits As Demand Warrants
Central Yup'ik Orthography (3+0)
An entry-level course for persons fluent in Central Yup'ik. Covers reading, silent and oral, and writing, emphasizing specific skills and practical application of those skills through writing assignments. Dialect differences in the Central Yup'ik region are used to demonstrate standardization of the writing systems. (Prerequisite: Demonstrated conversational Yup'ik skills).

ESK 111 5 Credits Fall
Introduction to Inupiaq, the language of Unalakleet, Seward Peninsula, Kotzebue Sound, and North Slope. Open to both speakers and non-speakers. For speakers the course provides literacy and grammatical analysis. For others it provides a framework for learning to speak, read, and write the language. Consideration given to dialect differences.

ESK 112 5 Credits Spring
Elementary Inupiaq Eskimo (5+0) h

ESK 115 1-3 Credits As Demand Warrants
Conversational Inupiaq (1-3)
Introductory course for students who wish to acquire the ability to speak Inupiaq, the language of Norton Sound, the Seward Peninsula, Kotzebue Sound, the North Slope, and the arctic portions of Canada and Greenland. Students first learn to understand simple spoken language, then to speak simple Inupiaq, developing a beginning level of communicative competence in the language. (Prerequisite: ESK 115 for 116.)

ESK 118 3 Credits As Demand Warrants
Inupiaq Orthography (3+0)
Entry-level course designed for students who are fluent in Inupiaq. Silent and oral reading and writing. Emphasis on specific skills and practical application of skills through writing assignments. (Prerequisite: Demonstrated conversational Inupiaq skills.)

ESK 130 3 Credits As Demand Warrants
Beginning Yup'ik Grammar (3+0) h
Literacy and grammatical analysis of the Central Yup'ik language are introduced in this course. Both Yup'ik speakers and non-speakers are eligible since the framework for learning to speak and write the language is offered. Considerations are given to dialect differences. (Prerequisite: ESK 103 or basic conversational Yup'ik skills).

ESK 155 1-3 Credits As Demand Warrants
Siberian Yupik Orthography (1-3)
Introduction to the standard writing system (orthography) of Siberian Yupik. Students learn the skills of spelling, reading, and writing words in Siberian Yupik, which are the fundamentals of basic literacy. (Prerequisite: Ability to speak Siberian Yupik or instructor permission.) Northwest Campus only.

ESK 201 3 Credits Fall
Intermediate Central Yup'ik (3+0) h
Continuation of ESK 101 and 102. Increasing emphasis on speaking, reading, and writing. (Prerequisite: ESK 104 or instructor permission.)

ESK 202 3 Credits Spring
Conversational Central Yup'ik III (3+0) h
A continuation of ESK 103 and 104. Kuskokwim campus only. (Prerequisite: ESK 104 or instructor permission.)

ESK 203 3 Credits As Demand Warrants
Conversational Central Yup'ik III (3+0) h
Yup'ik speaking skills and fluency for those with some background in the language. (Prerequisite: Permission of instructor. Each potential student must be evaluated for language capabilities.)

ESK 205 3 Credits As Demand Warrants
Regaining Fluency in Yup'ik (3+0) h
Yup'ik speaking skills and fluency for those with some background in the language. (Prerequisite: Permission of instructor. Each potential student must be evaluated for language capabilities.)

ESK 206 3 Credits As Demand Warrants
Regaining Fluency in Yup'ik II (3+0) h
Continuation of ESK 205. Speaking skills and fluency for those with some background in the language. (Prerequisite: ESK 205 or permission of instructor. Each potential student must be evaluated for language capabilities.)

ESK 208 3 Credits As Demand Warrants
Yup'ik Composition (3+0) h
An examination of the development of written Yup'ik and exploration of writing for entertainment, information, transcription of oral narratives and note taking in meetings where Yup'ik is the dominant language. (Prerequisite: ESK 109.)

ESK 211 3 Credits Fall
Intermediate Inupiaq Eskimo (3+0) h
Continuation of ESK 111 and 112, concentrating on development of conversational ability, with presentation of additional grammar and vocabulary. (Prerequisite: ESK 112 or instructor permission.)
ESK 218 / 3 Credits / As Demand Warrants
Inupiaq Composition (3-0)
An examination of the development of written Inupiaq uses to entertain, inform, persuade, transcribe oral narratives and take notes on such occasions as city council meetings. Open to new genres, rather than simply translating the standard categories of English composition. Students receive extensive practice in the Inupiaq orthography and actively participate in evaluation of each other's writing. (Prerequisite: ESK 118 or equivalent.)

ESK 230 / 3 Credits / As Demand Warrants
Introduction to Interpreting and Translating I (3-0) h
Introduction to interpreting and translating, designed for both those wishing to enter the field and those who wish to upgrade their skills. Discussion of problems which arise during interpreting and translating along with suggestions on how to handle them. (Prerequisites: Must be fluent in English and Yup'ik. Permission of instructor.)

ESK 231 / 3 Credits / As Demand Warrants
Introduction to Interpreting and Translating II (3-0) h
Continuation of ESK 230. (Prerequisites: ESK 230.)

ESK 301 / 3 Credits / Fall
Advanced Central Yup'ik Eskimo (3-0) h
Continuation of ESK 201 and 202. Completes the basic study of the Central Yup'ik grammar. (Prerequisites: ESK 101, 102, 201, 202 or instructor permission.)

ESK 415 / 3 Credits / Spring
Additional Topics in Advanced Yup'ik Eskimo (3-0) h
Further study of Yup'ik linguistics. Includes text transcription, editing, analysis, and discussion of Yup'ik syntax. Study of related Eskimo languages from the standpoint of Central Yup'ik. Additional topics to be studied depending upon the interests of the students and the instructor. (Prerequisites: ESK 101, 102, 201, 202 or instructor permission.)

ESK 417 / 3 Credits / Spring
Advanced Inupiaq Eskimo (3-0) h
Advanced study in Inupiaq Eskimo. Continuation of ESK 212. (Prerequisites: Completion of ESK 111, 112, 211, 212 or permission of instructor.)

Fire Science

FIRE 101 / 3 Credits / Fall
Introduction to Fire Science (3-0)
A course designed to inform students of career opportunities within municipal fire protection and related fields including history, nomenclature, fire department functions and the incident command system. Materials fee: $5.00.

FIRE 105 / 3 Credits / Spring
Fundamentals of Fire Prevention (3+0)
Organization and function of fire prevention programs, inspections, surveying, mapping, recognition of fire and life safety hazards, fire protection engineering, public fire education and enforcement. Materials fee: $5.00. (Prerequisite: FIRE 101 or instructor permission.)

FIRE 107 / 3 Credits / Spring
Municipal Fire Tactics and Strategy (3-0)
Principles of fire control through utilization of personnel, equipment and extinguishing agents. Materials fee: $5.00. (Prerequisite: FIRE 101 or instructor permission.)

FIRE 110 / 3 Credits / Fall
Introduction to Hazardous Waste Operations and Emergency Response (3-0)
Review of federal and state hazardous materials laws and regulations. Career opportunities related to the field of Hazardous Materials including transportation, emergency response and site clean up. Course meets the requirements for the eight hour Hazardous Materials Awareness Level, First Responder to Hazardous Material Incidents, Basic Incident Command System ICS. Materials fee: $5.00.

FIRE 111 / 3 Credits / Fall
Supervision and Management for Emergency Services (3-0)
Review of management, organization, planning, and supervision to meet the needs of Emergency Services. Materials fee: $5.00. (Prerequisite: FIRE 101 or instructor permission.)

FIRE 115 / 3 Credits / Alternate Spring
Fire Apparatus and Equipment (3-0)
Fire apparatus design, specifications and performance capabilities, effective utilization of apparatus in fire emergencies. Materials fee: $5.00. (Prerequisite: FIRE 101 or instructor permission. Next offered: 1996-97.)

FIRE 117 / 3 Credits / Spring
Rescue Practices I (3-0)
Rescue situations and techniques including vehicle extrication, rescue carries, ventilation principles, structural rescue, use of portable hand and power tools, wildland/canine search and rescue, ice and water rescue and emergency life saving principles. Materials fee: $75.00 plus $11.25 for additional mandatory insurance plus $40.00 cleaning/repair deposit. (Prerequisites: Advanced First Aid, EMS 103 or 119, or instructor permission. All students are required to wear a complete set of fire department approved protective clothing (turnout gear). Limited quantities are available for loan through the Fire Science Program Coordinator.)

FIRE 120 / 3 Credits / Fall
Introduction to Fire Chemistry and Physics (3+0)
Introduction to nomenclature, principles, problem solving of basic chemistry and physics as they relate to fire and hazardous material situations. Emphasis on principles, problem solving, and understanding how chemical and physical properties of materials and basic mathematics impact today's fire fighters. Materials fee: $5.00.

FIRE 123 / 3 Credits / Alternate Spring
Fire Investigation (3-0)
Determining origin and cause of fires (mechanical, accidental, or incendiary) for structural, wildland and transportation incidents; fire effects on materials; related laws; recognizing and preserving evidence, interviewing witnesses and suspects, rules of arrest and detention procedures, and court discipline. Materials fee: $5.00. (Prerequisite: FIRE 101 or permission of instructor. Next offered: 1996-97.)

FIRE 131 / 3 Credits / Alternate Fall
Firefighter I, Series 1 (2+2)
The initial phase in a four phase process for achieving State of Alaska Fire Fighter I certification. Fundamental knowledge of fire behavior, fire organizations, types of fire equipment emergency response services processes and methods of their use. Successful completion of all four phases will qualify the student for State of Alaska State Fire Fighter I certification. Materials fee: $75.00 plus $40.00 cleaning/repair deposit. (Prerequisite: All students are required to wear a complete set of fire department approved protective clothing (turnout gear). Limited quantities are available for loan through the Fire Science Program Coordinator. Next offered: 1996-97.)

FIRE 133 / 3 Credits / Alternate Fall
Firefighter I, Series II (2+2)
The second phase in a four phase process for achieving State of Alaska Fire Fighter I certification. Fundamental knowledge of fire behavior, fire organizations, types of fire equipment emergency response services processes and methods of their use. Successful completion of all four phases will qualify the student for State of Alaska State Fire Fighter I certification. Materials fee: $75.00 plus $40.00 cleaning/repair deposit. (Prerequisite: All students are required to wear a complete set of fire department approved protective clothing (turnout gear). Limited quantities are available for loan through the Fire Science Program Coordinator. Next offered: 1996-97.)

FIRE 149 / 1 Credit / Fall
Firefighter Internship, Series 1 (0+var)
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00.

FIRE 143 / 1 Credit / Fall
Firefighter Internship, Series 2 (0+var)
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00. (Prerequisite: FIRE 143.)

FIRE 147 / 1 Credit / Summer
Firefighter Internship, Series 3 (0+var)
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00. (Prerequisite: FIRE 145.)
FIRE 151 3 Credits  
Spring  
Wildland Fire Control I (3+4)  
Designed to provide national certification for both entry-level and experienced fire fighters. Emphasis on prefire planning, hazard identification, wildland fire ownership, fire behavior, initial attack, fire behavior suppression strategy, fire weather, and fire behavior suppression strategy. Materials fee: $5.00.

FIRE 155 3 Credits  
Alternate Spring  
Wildland Fire Behavior (3+4)  
Provides fire behavior knowledge to determine basic input data for fire behavior calculations such as rate of spread, fire line intensity, flame length, and area/ perimeter growth. Using fire behavior prediction systems. Prepare fire perimeter maps, assess and predict chances of extreme fire behavior conditions, assess fire line data and fire behavior estimations, identify fire suppressin limitations, and make recommendations for fire line location and safe control tactics. Materials fee: $5.00. (Prerequisite: FIRE 151 or instructor permission. Next offered: 1996-97.)

FIRE 157 3 Credits  
Alternate Fall  
Wildland Air Operations and Safety (3+4)  
Basic use of aircraft in wildland fire operations including helicopter operations, types and capacities, helibase/helipad construction, logistics support and specialized missions. Fixed wing operations include establishment of air bases, retardant operations, aircraft fueling and pararescue support. Emphasis on aviation safety. Materials fee: $5.00. (Prerequisite: FIRE 151 or instructor permission. Next offered: 1995-96.)

FIRE 159 3 Credits  
Alternate Fall  
Wildland Fire Operations Function (3+4)  
Overview of the operations function including organization; implementation of the incident action plan; tactical use of crews, engines, bulldozers; appointment of supervisors in accordance with incident command system; utilization of fixed wing and rotor wing aircraft. Functional positions of crew boss, staging area manager and strike team leader covered. Materials fee: $5.00. (Prerequisites: FIRE 151, 155, 157 and 254, or instructor permission. Next offered: 1995-96.)

FIRE 161 3 Credits  
Alternate Fall  
Wildland Fire Logistics Function (3+4)  
Overview of the support and service branches of the logistics function within the incident command system. Emphasis on entry-level positions of ordering manager, receiving and distribution manager, base camp manager, equipment manager, and medical unit leader. Materials fee: $5.00. (Prerequisite: FIRE 151 or instructor permission. Next offered: 1996-97.)

FIRE 165 3 Credits  
Alternate Spring  
Wildland Fire Planning Function (3+4)  
Provides an overview of the planning process, organizational relationships with other functions, use of planning matrix board, check-in and resource status procedures, evaluation, analysis and display of incident information, documentation, demobilization, use of technical specialist and components of an incident action plan. Materials fee: $5.00. (Prerequisite: FIRE 151 or instructor permission. Next offered: 1995-96.)

FIRE 202 3 Credits  
Fall  
Fire Hydraulics (3+4)  
Review of applied mathematics, hydraulic principles; applications of formulas and calculations; water supply and distribution. Materials fee: $5.00. (Prerequisites: FIRE 101 and satisfactory demonstration of basic math skills (pretest), or instructor permission.)

FIRE 203 3 Credits  
Fall  
Hazardous Materials I (3+4)  
Basic fire chemistry relating to most categories of hazardous materials. Problems of recognition, reactivity and health encountered by fire fighters. Materials fee: $5.00. (Prerequisite: Satisfactory demonstration of basic chemistry knowledge (pretest) or instructor permission.)

FIRE 205 3 Credits  
Spring  
Hazardous Materials II (3+4)  
Chemistry review of common hazardous materials control, confinement and containment operations with an emphasis on decontamination procedures. Basic Incident Command System instruction. Meets the requirements of the 24 hour Operations Level. First Responder to hazardous materials incidents. Materials fee: $5.00. (Prerequisite: FIRE 203 or instructor permission.)

FIRE 206 3 Credits  
Alternate Fall  
Building Construction for Fire Protection (3+4)  
Fundamentals of building construction as it relates to fire protection. Materials fee: $5.00. (Prerequisite: FIRE 101 or employment or experience in related field, such as fire protection, insurance, construction architecture, or engineering. Next offered: 1996-97.)

FIRE 207 3 Credits  
Fall, Spring  
Hazardous Materials III (2+2)  
Advanced information for protection and safety of personnel engaged in response and field operations involving hazardous materials and substances at the Hazardous Materials Technician level. Materials fee: $75.00. (Prerequisite: FIRE 205 or permission of instructor.)

FIRE 208 3 Credits  
Alternate Fall  
Fire Service Records and Reports (3+4)  
Provides the student with a basic understanding in the use of records and reporting systems. Emphasis on NFPA and EPI course #165.15. Materials fee: $75.00. (Prerequisite: FIRE 205 or instructor permission.)

FIRE 209 3 Credits  
Fall, Spring  
Hazardous Materials IV (3+4)  
Preparation for Incident Commander as the Safety Officer positions on complex hazardous materials incidents or large scale cleanup operations. Materials fee: $5.00. (Prerequisite: FIRE 207 or instructor permission.)

FIRE 212 3 Credits  
Alternate Fall  
Building and Fire Codes (3+4)  

FIRE 214 3 Credits  
Alternate Spring  
Fire Protection Equipment and Systems (3+4)  
Portability, fire extinguishing equipment, protection systems for specific hazards including sprinkler systems, dry chemical, fire detection, and alarm systems. Materials fee: $5.00. (Prerequisite: FIRE 101 or instructor permission. Next offered: 1995-96.)

FIRE 216 3 Credits  
Alternate Spring  
Methods of Instruction for Fire Service Training (3+4)  
Skills necessary to instruct fire service courses including adult education techniques, classroom setup, use of audiovisual equipment, presentation, and evaluation methods of students and instruction. Materials fee: $5.00. (Next offered: 1996-97.)

FIRE 218 3 Credits  
Fall  
Rescue Practices II (3+4)  
Provides instruction in four of the most common rescue situations that fire department encounter in the Interior of Alaska: vehicle extrication, rope rescue, confined space rescue and fire/water rescue. Class stresses basic knowledge and hands-on experience. All students are required to wear a complete set of fire department approved protective clothing (turnout gear). Limited quantities are available for loan through the Fire Science Program Coordinator. Materials fee: $75.00 plus $13.50 mandatory insurance plus $40.00 cleaning/repair deposit. (Prerequisites: FIRE 117 and EMS 103 or 119 or instructor permission.)

FIRE 221 3 Credits  
Alternate Spring  
Hazardous Materials Contingency Planning (3+4)  
Planning for a large scale hazardous material incident within the community to include hazards analysis, impact on population and growth, response capabilities and integration with other response plans. Materials fee: $5.00. (Next offered: 1996-97.)

FIRE 231 3 Credits  
Alternate Fall  
Hazardous Materials Tactical Operations (2.5+1)  
Prepares students to handle tactical operations involving hazardous materials at fixed facilities as well as transportation incidents involving flammable and combustible liquids, corrosives, poisons, cryogenics, oxidizers, LPG, entomological materials, etc. Materials fee: $5.00. (Prerequisite: FIRE 207 or instructor permission. Next offered: 1995-96.)

FIRE 232 3 Credits  
As Demand Warrants  
Fire Fighter II/III (2.5+1)  
Advanced technical knowledge of fire alarms, communications, fire behavior, self contained breathing apparatus, rescue, safety, ladders, fire hose, nozzles and appliances, fire streams, water supplies, sprinklers, overhauls and inspections. Students are required to wear a complete set of fire department approved protective clothing (turnout gear). Limited quantities are available for loan through the Fire Science Program Coordinator. Materials fee: $75.00. (Prerequisites: FIRE 131, 133, 135 and 137, or instructor permission.)

FIRE 241 3 Credits  
Alternate Spring  
Hazardous Materials Inspector (3+4)  
Evaluation of storage conditions in a hazardous materials facility and providing limited technical assistance to the building owners. Knowledge of the codes as they apply to the storage of hazardous materials. Materials fee: $5.00. (Prerequisites: FIRE 205 and FIRE 212 or instructor permission. Next offered: 1995-96.)

FIRE 244 1 Credit  
Fall  
Firefighter Internship, Series I (6+0)  
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00. (Prerequisite: FIRE 145 or 147.)
COURSE DESCRIPTIONS / 151

FIRE 246 1 Credit Spring
Firefighter Internship, Series 5 (0+var)
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00. (Prerequisite: FIRE 244.)

FIRE 248 1 Credit Summer
Firefighter Internship, Series 6 (0+var)
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00. (Prerequisite: FIRE 246.)

FIRE 249 3 Credits Alternate Fall
Computer Aided Management of Emergency Operations (2.5+1)
Assistance to emergency planners and first responders to plan for and safely handle chemical accidents through the use of a computer. CAMEO contains chemical nomenclature and response information for 3,311 commonly transported chemicals. Materials fee: $5.00. (Next offered: 1996-97.)

FIRE 252 3 Credits Alternate Spring
Wildland Fire Prevention (3+0)
Overview of wildland fire prevention including data collection, problem identification, problem analysis, action planning, fire reporting, fire cause determination, enforcement of laws and ordinances, public fire education, and the economics of fire prevention. Materials fee: $5.00. (Prerequisite: FIRE 151 or instructor permission. Next offered: 1995-96.)

FIRE 254 3 Credits Fall
Wildland Fire Business Management (3+0)
Fire business management objectives, including duties and responsibilities of fire finance section relating to management practices and programs. Procedures required in various finance positions including financial management of a large complex wildland fire. Materials fee: $5.00. (Prerequisite: FIRE 151 or instructor permission.)

FIRE 256 3 Credits Alternate Fall
Wildland Fire Planning and Multiple Use Management (3+0)
Fire management and its role in a multiple use resource program. Includes prescribed and wild fire practices, environmental concerns, management goals and objectives, and prefire planning. Materials fee: $5.00. (Prerequisite: FIRE 151, FIRE 155, or instructor permission. Next offered: 1995-96.)

FIRE 289 3 Credits Alternate Spring
Wildland Fuels Management (3+0)
Use of fire as a resource management tool. Natural and prescribed fire planning, development and procedures to meet management objectives, components for conducting safe, prescribed burning. Materials fee: $5.00. (Prerequisites: FIRE 151, 155, 158 and 262 or instructor permission. Next offered: 1995-96.)

FIRE 260 3 Credits As Demand Warrants Winter
Fire Research and Development (3+0)
Research and development in the area of fire prevention, detection, prescribed burns, fire suppression, and post suppression. Materials fee: $5.00.

FIRE 262 3 Credits Alternate Fall
Wildland Fire Control II (3+0)
Instruction in tactical operations of fireline construction, use of handcrews, heavy equipment, water and engines, fire operations, wildland/urban interface and using combinations of resources. Advanced level course for trained and experienced wildland fire fighters. Materials fee: $5.00. (Prerequisites: FIRE 151, 155, 157, 159, and 254 or instructor permission. Next offered: 1996-97.)

FIRE 270 3 Credits Alternate Spring
Wildland Fire Command Function (3+0)
An overview of the command function including use of single and unified command, roles and responsibilities of the incident commander and staff, development and implementation of strategic decision, providing information to the media, and managing the incident from initial attack of small, noncomplex fires to larger, more complex initial attack suppression organizations dealing with escape attack situations. Materials fee: $5.00. (Prerequisites: FIRE 151, 155, 252 or instructor permission. Next offered: 1996-97.)

Fisheries
Fisheries courses are offered at both the Fairbanks Campus and at the UAF Juneau Center for Fisheries and Ocean Science. Those offered only at Fairbanks are identified by the initial "F" following the course number. Courses offered only at Juneau are identified with a "J" following the course number. The frequency of offering is identified by location for those courses offered at both units.

FISH 101 3 Credits Fairbanks, Spring
Introduction to Fisheries (3+0)
A survey of the values, habitats, biology, ecology and management of fishes with particular reference to Alaskan fisheries and issues.

FISH 251 3 Credits Alternate Spring
Wildlife Science and Conservation (3+0)
The subject of fisheries science is reviewed to reflect the emerging concept of a study area integrated over a broad sweep of disciplines: oceanography, limnology, marine biology, fish population dynamics, aquaculture, economics, processing, product quality and development, and marketing. Demonstrates how such different subjects have feedback loops to one another and stresses the science fundamentals involved. Laboratory fee: $10.00. (Prerequisite: one 200-level biology class. Corequisite: STAT 200 [STAT 373-J].)

FISH 300 3 Credits Alternate Fall
Marine Fishes of Alaska (2+3)
(Same as BIOL 380)
Taxonomy, recognition, distribution, life history and ecological relationships of marine fishes of Alaska will be studied. Life history traits that make species susceptible to commercial exploitation, changes in climate, ocean circulation or pollution will be emphasized. Laboratory fee: $30.00. (Prerequisites: BIOL 105X, 106X and 222. Next offered: 1996-97.)

FISH 303 4 Credits As Demand Warrants Winter
Biology of Commercially Important Salmonid Fishes (3+1)
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00.

FISH 304 3 Credits Alternate Fall
Freshwater Fishes of Alaska (2+3)
(Same as BIOL 384)
Life histories of Alaskan freshwater fishes emphasizing species sought by fishermen. Reproduction, age, growth, migration, food, inter-relationships and habitat requirements. (Prerequisites: BIOL 105X and 106X or permission of instructor. Next offered: 1995-96.)

FISH 363-J 3 Credits Alternate Spring
Introduction to Aquaculture (3+0)
Alaska's aquaculture industries, salmon ocean ranching, shellfish mariculture, and kelp mariculture contribute to the world's increasingly important aquaculture production. Survey of worldwide production, introduction to production systems, and familiarization with Alaskan systems. Team taught by SFS specialist and featuring invited lecturers, laboratory demonstrations, and field trips. (Prerequisites: BIOL 106X. Next offered: 1996-97.)

FISH 380 3 Credits Alternate Spring
Marine Fishes of Alaska (2+3)
(Same as BIOL 380)

FISH 381 3 Credits As Demand Warrants Winter
Biology of Commercially Important Salmonid Fishes (3+1)
Practical experience in fire operations and training by arrangement through local fire departments. Materials fee: $5.00.

FISH 382 4 Credits Alternate Spring
Biology of Commercially Important Marine Fishes (3+2)
Review of the major marine fish resources of Alaska. Taxonomy, distribution, life history and ecological relationships of marine fishes, with emphasis on demersal fishes, early life history and the effects of fisheries on stocks. (Prerequisite: BIOL 222 [BIOL 209-J].)

FISH 383 4 Credits As Demand Warrants Winter
Biology of Commercially Important Invertebrates (3-3)
Topics include the taxonomy, morphology, physiology and ecology of commercially important invertebrates. History of the management and fishery of the major species presented. Emphasis on Alaskan species. (Prerequisite: BIOL 222 [BIOL 209-J].)

FISH 384 3 Credits Alternate Spring
Freshwater Fishes of Alaska (2+3)
(Same as BIOL 384)

FISH 401 3 Credits Fairbanks, Spring
Fisheries Management (3+0)
(Same as NRM 401)
Principles, concepts and techniques of fisheries management in terms of their biological, economic, social and political aspects. Topics are stocking and introductions, habitat manipulation, sustainable yield, regulation, management organizations and their responsibilities. Examples of several fisheries are used to clarify concepts and practices. (Prerequisite: BIOL 271. Next offered Juneau: 1995-96.)

FISH 418-J 4 Credits Alternate Fall
Renewable Resource Management Systems (4+0)
Develops abilities to recognize, process and apply critical information in the management of renewable resources by examples from Alaskan fisheries. The computer as a primary tool of resource management. (Prerequisite: STAT 200 [STAT 373-J]. STAT 410 recommended. Next offered: 1995-96.)

FISH 420-J 3 Credits As Demand Warrants Winter
Modeling, Simulation and Ecological Theory (3+0)
Introduction to formal models (mathematical, graphical and simulation) in fisheries and ecology. Nature and uses of modeling approaches; choice of assumptions; simulation techniques and model verification; examples and case histories. (Prerequisites: MATH 200, BIOL 271 [BIOL 281-J].)
### Food Science and Nutrition

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Type of Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSN 460-K</td>
<td>3-6</td>
<td>As Demand Warrants</td>
</tr>
<tr>
<td>FSN 661-K</td>
<td>3</td>
<td>Spring</td>
</tr>
<tr>
<td>FSN 662-K</td>
<td>3</td>
<td>Fall</td>
</tr>
<tr>
<td>FSN 663-K</td>
<td>3</td>
<td>Alternate Years</td>
</tr>
<tr>
<td>FSN 671-K</td>
<td>4</td>
<td>Alternate Years</td>
</tr>
<tr>
<td>FSN 672-K</td>
<td>4</td>
<td>Alternate Years</td>
</tr>
<tr>
<td>FSN 673-K</td>
<td>3</td>
<td>Alternate Years</td>
</tr>
<tr>
<td>FSN 674-K</td>
<td>4</td>
<td>Alternate Years</td>
</tr>
<tr>
<td>FSN 692-K</td>
<td>1</td>
<td>As Demand Warrants</td>
</tr>
</tbody>
</table>

#### Foreign Languages

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Type of Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>FL 110</td>
<td>2</td>
<td>As Demand Warrants</td>
</tr>
<tr>
<td>FREN 105</td>
<td>3</td>
<td>Fall, Spring</td>
</tr>
</tbody>
</table>

### French

For information on studying in French-speaking countries, see Study Abroad; on compulsory placement tests, see Course Placement; on "bonus credit", see Alternative Ways to Earn Credit.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Type of Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREN 075</td>
<td>3</td>
<td>As Demand Warrants</td>
</tr>
<tr>
<td>FREN 076</td>
<td>3</td>
<td>As Demand Warrants</td>
</tr>
<tr>
<td>FREN 079</td>
<td>3</td>
<td>As Demand Warrants</td>
</tr>
</tbody>
</table>

An introductory course for students who wish to acquire the ability to speak French. Students first learn to understand simple spoken language, then to speak simple French, developing a beginning level of communicative competence. (Prerequisite: FREN 075 for 076.)
FREN 101 5 Credits Fall
FREN 102 5 Credits Spring
Elementary French I and II (5+0) h
Introduction to the language and culture: development of competence and performance in the language through understanding, recognition and use of linguistic structures; increasing emphasis on listening comprehension and speaking; basic vocabulary of approximately 1,000 words; exploration of the cultural dimension, implicitly through language, and explicitly through texts and audiovisual materials. Materials fee: $4.00. (Prerequisite: FREN 101 or equivalent.)

FREN 201 3 Credits Fall
FREN 202 3 Credits Spring
Intermediate French I and II (3+0) h
Continuation of FREN 102. Increasing emphasis on reading ability and cultural material. Conducted in French. Materials fee: $4.00. (Prerequisite: FREN 102 or equivalent.)

FREN 201W 3 Credits Fall
FREN 202W 3 Credits Spring
Advanced French (3+0) h
Discussions and essays on more difficult subjects or texts. Translations, stylistic exercises, and special grammatical problems. Conducted in French. Materials fee: $4.00. (Prerequisites: FREN 302 or equivalent; junior standing or permission of instructor. Next offered: 1995-96.)

FREN 243 W 3 Credits Alternate Fall
Studies in the Culture of the French Speaking World (3-0) h
Intensive study of selected aspects of the culture of the French speaking world. Conducted in French. Students may repeat course for credit if topic varies. Materials fee: $4.00. (Prerequisites: FREN 302 or equivalent and at least junior standing, or permission of instructor. Next offered: 1996-97.)

FREN 483 W 3 Credits Alternate Fall
Studies of Literature in French (3+0) h
Course may be repeated for credit if topic varies. Materials fee: $4.00. (Prerequisites: FREN 302 or equivalent; junior standing, or permission of instructor. Next offered: Spring 1996.)

FREN 488 3 Credits As Demand Warrants
Individual Study: Senior Project h
Designed for the student to demonstrate ability to work with the language and the culture through the analysis and presentation, in the language, of a problem chosen by the student in consultation with the department. The student must apply for senior project and submit a project outline by the end of the 6th week of the semester preceding the semester of graduation. Conducted in French. (Prerequisites: At least 10 credits in upper division French or permission of instructor.)

GEOG 101 3 Credits Fall, Spring
World Geography (3+0) s
World regions, an analysis of environment, with emphasis on major culture realms. Also available via Independent Learning.

GEOG 203 3 Credits Fall
World Economic Geography (3+0) s
Study of the world's major economic activities: their physical and cultural bases, spatial growth and distribution patterns, and their significance in interregional and international development. (Prerequisite: GEOG 101 or permission of instructor.)

GEOG 205 3 Credits Fall, Spring
Elements of Physical Geography (3+0) n
Analysis of processes that form the physical environment and resulting physical patterns. Study of landforms, climate, soils, water resources, vegetation, and their world and regional patterns. Also available via Independent Learning. (Offered every Spring at the Northwest Campus.)

GEOG 205 X 4 Credits Fall, Spring
Elements of Physical Geography (3+3) n
Analysis of processes that form the physical environment and resulting physical patterns. Study of landforms, climate, soils, water resources, vegetation, and their world and regional patterns. Laboratory fee: $25.00. (Offered every Spring at the Northwest Campus.)

GEOG 301 3 Credits Alternate Fall
Geographic Field Research Techniques
Theory and application of geographic methods of conducting field investigations. Collection, analysis, synthesis, and interpretation and reporting of data concerning the natural and human environments. (Prerequisite: Permission of instructor. Next offered: 1995-96.)

GEOG 302 3 Credits Spring
Geography of Alaska (3+0) s
Regional, physical and economic geography of Alaska. Special consideration of the state's renewable and nonrenewable resources, and of plans for their wise use. Frequent class study of representative maps and visual materials. Also available via Independent Learning. (Prerequisites: GEOG 101, 205.)

GEOG 303 3 Credits Alternate Fall
Geography of the United States and Canada (3+0) s
Introductory systematic study of the area as a whole, followed by detailed study of the physical and cultural landscape forms, patterns, and associations of each major region in turn. Consideration of the United States and Canada in current world economic and political geography. (Prerequisite: GEOG 101 or 203, or permission of instructor. Next offered: 1995-96.)

GEOG 3040 3 Credits Alternate Spring
Advanced Economic Geography (3+0) s
Major theories of economic geography with particular focus on those theories relevant to the underdeveloped regions. Emphasis on theories appropriate to northern regions. (Prerequisite: Introductory course in World Economic Geography or equivalent. Next offered: 1995-96.)

GEOG 305W 3 Credits Alternate Fall
Geography of Europe (except U.S.S.R.) (3+0) s
Regional, physical, economic and cultural geography of Europe, except U.S.S.R. (Prerequisites: GEOG 101, 205. Next offered: 1995-96.)

GEOG 306 3 Credits Alternate Spring
Geography of Russia (3+0) s
The physical, cultural and historical geography of Russia and the Ukraine, Central Asia, Siberia and parts of Eastern Europe. (Prerequisite: GEOG 101 or 203 or permission of the instructor. Next offered: 1995-96.)

GEOG 309 4 Credits Alternate Spring
Cartography (1+3) s
Graphic techniques for presenting geographic data through the construction of maps, projections and charts. Materials fee: $150.00. (Prerequisite: Permission of instructor. Next offered: 1997-98.)

GEOG 311W 3 Credits Alternate Fall
Geography of Asia (3+0) s
Regional geography of Asia, exclusive of the Soviet Union. Physical framework, natural resources, peoples, major economic activities, and characteristic land­scapes of the major regions of Japan, China, Southeast Asia, India-Pakistan, and the Asiatic countries of the Middle East. (Prerequisite: GEOG 101 or 203 or permission of the instructor. Next offered: 1996-97.)

GEOG 315W 3 Credits As Demand Warrants
Geography of Africa (3+0) s
Physical and cultural geography of Africa, by regions. Significance of Africa in current world cultural, economic, and political geography. Major emphasis on regions south of the Sahara. (Prerequisites: GEOG 101, 203 or 205.)

GEOG 327 3 Credits Spring
Cold Lands (3+0) s
Comparative physical, human, and economic geography of cold regions, with particular attention to Siberia, Greenland, Scandinavia and Canada. Special attention given to different approaches taken toward economic development in cold regions. (Prerequisite: GEOG 101 or 203 or 205 or permission of the instructor.)

GEOG 338 3 credits Fall
Introduction to Geographic Information Systems (2+3)
(Same as NRM 338)
Geographic data concepts including mapping systems, data sources, editing data, GIS analysis and computer mapping. Introduction to Global Positioning Systems. GIS applications in natural resources management. Materials fee: $35.00. (Prerequisite: Knowledge of PCs or Unix workstations desirable.)

GEOG 339 3 or 4 Credits Spring
Maps and Landscape Analysis (3+0) or (3+3) n
Application of methodology of physical geography to analysis of regional land­scapes. Optional laboratory for one additional credit. (Prerequisites: GEOG 101 or 203, 205.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Semester</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 341</td>
<td>4</td>
<td>Spring</td>
<td>GIS Analysis (3+3) (Same as NRM 341) GIS analysis of natural resources including spatial query, attribute query, vector, grid, image, topographic and network analysis techniques. (Prerequisite: GEOG 338.)</td>
</tr>
<tr>
<td>GEOG 401</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Introduction to the study of weather and classification of climates. (Prerequisite: Permission of the instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>GEOG 402</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Resources and Environment (3+3) Interdisciplinary analysis of the earth as a natural resource base, and the management issues of resource extraction, allocation, development, conservation and preservation. (Prerequisites: GEOG 101, 205. Next offered: 1997-98.)</td>
</tr>
<tr>
<td>GEOG 405</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Political Geography (3+3) Geographical analysis of the evolution, structure, internal coherence, and sources of strength of individual nation states, with emphasis on nations of the Pacific realm and Arctic periphery. Consideration of regional blocs, spheres of influence, and potential for international cooperation. (Prerequisite: GEOG 101. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>GEOG 408</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Quantitative Research Techniques (3+0) Philosophy and methodology in geography. Theories, laws, and models for measurement, analysis and explanation of geographic patterns and associations. Applications of findings to solution of geographic problems. (Prerequisites: Junior standing, college-level mathematics, or permission of the instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>GEOG 438</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Arc Macro Language GIS Programming (3+0) (Same as NRM 438) Arc macro language. Programming of pop-up menus and tools for GIS editing, display, and analysis. (Prerequisite: NRM 338 or equivalent. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>GEOG 463</td>
<td>3</td>
<td>Fall</td>
<td>Wilderness Concepts (3+3) (Same as NRM 463) Discovery of wilderness concepts, including the history and evolution of wilderness thought, the contemporary meaning of wilderness, and survey of economic and non-economic wilderness values for individuals and society.</td>
</tr>
<tr>
<td>GEOG 482W</td>
<td>3</td>
<td>Spring</td>
<td>Geography Seminar (3+0) History, philosophy and methodology of geographic thought from the Semenians to the present with particular attention to changing philosophies of geography. (Prerequisite: Senior Geography major and permission of instructor.)</td>
</tr>
<tr>
<td>GEOG 637</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Geography of Northern Development (3+0) (Same as NORS 637)</td>
</tr>
</tbody>
</table>

**Geological Engineering**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Semester</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE 101</td>
<td>1</td>
<td>Fall</td>
<td>Introduction to Geological Engineering (1+3) Multiple aspects of geological engineering as a profession; the area and scope of the field. Graded pass/fail.</td>
</tr>
<tr>
<td>GE 261</td>
<td>3</td>
<td>Spring</td>
<td>General Geology for Engineers (2+3) Study of common rocks and minerals, landforms, erosion. Geologic materials and engineering application of geology. Laboratory fee: $15.00. (Prerequisite: Geology, science, or engineering majors, or permission of instructor.)</td>
</tr>
<tr>
<td>GE 365</td>
<td>3</td>
<td>Fall</td>
<td>Geological Engineering I (3+0) Geologic and geotechnical factors for the solution of engineering problems. Special emphasis on soils and permafrost. Some fieldwork and student report. (Prerequisites: GEOS 101 or GEOS/GE 261 and ES 208 or 209.)</td>
</tr>
<tr>
<td>GE 372</td>
<td>3</td>
<td>Spring</td>
<td>Rock Engineering (3+0) Rock engineering related to tunnels, slope design, and strata control. Some field work and student report. (Prerequisites: GEOS 101 or GE/GEOS 261 and ES 208 or 209.)</td>
</tr>
<tr>
<td>GE 375</td>
<td>3</td>
<td>Fall</td>
<td>Principles of Engineering Geology and Terrain Analysis (3+0) Evaluation of terrain characteristics using basic geomorphic and engineering principles. Consideration given to Alaskan applications. (Prerequisite: GEOS 101 or GE 261.)</td>
</tr>
<tr>
<td>GE 381W</td>
<td>2</td>
<td>Summer</td>
<td>Field Methods and Applied Design I (0+9+3) Techniques and geologic mapping and geotechnical instrumentation applied to engineering design and resource evaluation. (Prerequisites: GE 261, GEO 321 and GEO 332 or equivalent.)</td>
</tr>
<tr>
<td>GE 382W</td>
<td>4</td>
<td>Summer</td>
<td>Field Methods and Applied Design II (0+9) Techniques and geologic mapping and geotechnical instrumentation applied to engineering design and resource evaluation. (Prerequisites: GE 261, GEO 321 and GEO 332 or equivalent.)</td>
</tr>
<tr>
<td>GE 405</td>
<td>4</td>
<td>Fall</td>
<td>Exploration Geophysics (3+3) Theory and application of gravity, magnetic, electrical, electro-magnetic, radioactive, and seismic methods as used for geophysical exploration. Some field work. (Prerequisites: MATH 200 and PHYS 211 or equivalent.)</td>
</tr>
<tr>
<td>GE 420</td>
<td>3</td>
<td>Spring</td>
<td>Subsurface Hydrology (2+3) Hydraulic characteristics of earth materials, engineering problems and models related to subsurface fluids, and properties of water. (Prerequisites: GEOS/GE 261 and PHYS 211.)</td>
</tr>
<tr>
<td>GE 430</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Geomechanical Instrumentation (3+0) Geomechanical instrumentation is widely used by the mining and construction industries as well as by researchers. Course topics include the measurement of groundwater pressure, ground deformation, stress, and temperature as well as the planning of monitoring programs, instrument calibration, maintenance, and installation, data collection, interpretation, and reporting. Case histories are used. (Prerequisites: GE 261 and ES 331. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>GE 431</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Applied Ore Microscopy (1+3) Preparation of polished sections of ores. Identification of ore minerals in reflected light by physical, optical, and chemical methods. Applications to ore genesis, drill core interpretation, beneficiation, and process control. (Prerequisite: GEO 213 or permission of the instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>GE 435</td>
<td>3</td>
<td>Spring</td>
<td>Exploration Design (3+0) Geologic, engineering, and economic considerations applied to the design and development of mineral exploration programs. (Prerequisites: GEO 214 and 314 or permission of instructor.)</td>
</tr>
<tr>
<td>GE 440</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Slope Stability (3+0) Slope design for open pit mining and other excavations. Stability analysis by various methods and on-site measuring and monitoring techniques. (Prerequisite: ES 331 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>GE 471</td>
<td>3</td>
<td>Fall</td>
<td>Remote Sensing for Engineering (3+0) Applications of remote sensing to geologic engineering problems. Introduction to digital satellite image processing with hands-on practice. (Prerequisites: GEOS 101 or GE/GEOS 261, 408, PHYS 212.)</td>
</tr>
<tr>
<td>GE 480W</td>
<td>3</td>
<td>Spring</td>
<td>Geological Engineering II (1+6) Design factors and procedures for the solution of geological engineering problems. A term design-project is the focus of the course. (Prerequisite: Senior standing or permission of instructor.)</td>
</tr>
<tr>
<td>GE 630</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Advanced Applied Mining Geology (2+3)</td>
</tr>
<tr>
<td>GE 631</td>
<td>3</td>
<td>Spring</td>
<td>Electron Microprobe Methods in Mineral Exploration and Development (2+3)</td>
</tr>
</tbody>
</table>
GEOS 211 3 Credits Fall Geology of Alaska (3-4) n
Modern geologic processes in Alaska will be used as a basis for understanding past geologic evolution of the region. The origin and recovery of Alaska's petroleum and mineral resources will be discussed. For non-majors. (Prerequisite: GEOS 101X.)

GEOS 212 3 Credits As Demand Warrants Geology of Alaska (3-4) n

GEOS 213 4 Credits Fall Mineralogy (2-6) n
Mineral chemistry, atomic structure, elementar crystallography, optical crystallography and descriptive and determinative mineralogy. Instrumental determinative techniques (x-ray diffraction, petrographic microscope). Laboratory fee: $15.00. (Prerequisites: GEOS 101X or 261; CHEM 105 and concurrent registration in MATH 107-108.)

GEOS 214 4 Credits Spring Petrology and Petrography (2-6) n
Origin, occurrence, and classification of igneous, sedimentary, and metamorphic rocks. Laboratory work involves hand lens identification and thin section examination of representative rocks. Laboratory Fee: $15.00. (Prerequisite: GEOS 213.)

GEOS 215 3 Credits Fall Paleobiology and Paleontology (2-3) n
Survey of the history of life on earth as represented in the fossil record. Contributions of paleontology to the study of evolution, past environments, and paleogeography; biostatigraphically important invertebrate fossil groups and their temporal ranges; evolution of terrestrial flora and fauna; current issues in paleontology. Laboratory work will emphasize recognition of major fossil groups and paleontological problem solving. (Prerequisites: GEOS 112, BIOL 103 or BIOL 106.)

GEOS 262 3 Credits Alternate Fall Rocks and Minerals (2-3)
Physical properties of minerals and rocks, classification, mode of occurrence and economic applications. Role of rock materials in soil formation and fluid flow; influence on economic deposits and construction. Labs on recognition and measurement of physical properties. Course may not be used to satisfy degree requirements in Geology or Geological Engineering. (Prerequisites: GE/GEOS 261, 101X or equivalent. Next offered: 1995-96.)

GEOS 265 3 Credits Spring Structural Geology (3+3) n
Origin and interpretation of primary and secondary geologic structures. Graphical solution of structural problems. Laboratory fee: $15.00. (Prerequisites: GEOS 112X, PHYS 103 or 211, MATH 201, GEOS 214 or concurrent registration.)

GEOS 304 3 Credits Fall Geomorphology (3+0) n
Surface features of the Earth and the processes which create or modify them. Application to Quaternary history, environmental science and related fields. Laboratory exercises in interpretation of topographic maps and aerial photographs, introduction to geomorphic measurements. (Prerequisite: GEOS 101X.)

GEOS 314 4 Credits Spring Structural Geology (3+3) n

GEOS 321 3 Credits Alternate Fall Sedimentology (2-3) n
Geology of Earth Science (3-3) n
Survey of the four main disciplines of earth science: geology, oceanography, meteorology, and astronomy. Lab portgion: vehicle to learn scientific methodology, evidence to support theories presented in lectures. (Prerequisite: English placement test)

GEOS 491 1-6 Credits Fall Senior Honors Research (1-6) n
Resource 1-6

GEOS 493 3 Credits alternate Spring Senior Honors Seminar (3) n

GEOS 594 1-6 Credits Fall Senior Honors Research (1-6) n

GEOS 370 4 Credits Alternate Spring
Sedimentary and Structural Geology for Petroleum Engineers (3+3)
Origin and discrimination of sedimentary rocks including depositional environments, stratigraphic relationships, and structures. Emphasis on the relationship to petroleum occurrences and petroleum exploration. Laboratory exercises on mapping, structural problems and facies relationships in petroleum exploration. Laboratory fee: $15.00. (Prerequisite: GEOS 101X or GE 261. Next offered: 1995-96.)

GEOS 401 3 Credits Alternate Fall
Invertebrate Paleontology (2+3)
Study of invertebrate phyla with extensive geologic records. Emphasis on principles of biostratigraphy and paleoecology, application to geologic problems, and case studies from Alaska. Laboratory study of fossil assemblages with emphasis on stratigraphically significant groups. Designed to complement GEOS 322. Laboratory fee: $15.00. (Prerequisite: GEOS 215 or permission of instructor; GEOS 322 recommended. Next offered: 1996-97.)

GEOS 408 2 Credits Alternate Spring
Photogeology (1+3)
Use of topographic maps, geologic maps, aerial photographs, and satellite imagery in interpretation of geological structures, landscapes, landforms, and geomorphic processes. Techniques included are map compilation, photo mapping, statistical treatment of map data, and composite mapping for planning. Laboratory fee: $15.00. (Prerequisite: GEOS 304 or permission of instructor. Next offered: 1995-96.)

GEOS 410 2 Credits Fall
Potential Methods in Geophysics (1+3)
Theory of potential methods and application to geophysical exploration. Basic techniques and methods of interpretation of gravimetric and magnetic measurements. Class meets for one-half of the semester only. (Prerequisites: MATH 201, PHYS 212, or permission of instructor.)

GEOS 411 3 Credits Spring
Seismic Exploration (2+3)
Fundamental principles of seismic exploration techniques, beginning with basic laws of seismic wave propagation and ending with practical application of the techniques, including reflection and refraction methods. Class meets for one-half of the semester only. (Prerequisites: MATH 201, PHYS 212, or permission of instructor.)

GEOS 412 2 Credits Fall
Electrical Methods in Geophysics (1+3)
Electrical resistivity and current flow in the earth and the practical application in the realm of geophysical exploration. Class meets for one-half of the semester only. (Prerequisites: MATH 201, PHYS 212, or permission of instructor.)

GEOS 417 3 Credits Fall
Introduction to Geochemistry (3+0)
(Same as GEO 618)
Application of chemical principles and elemental/isotopic behavior to the study of the earth. Topics include: aqueous geochemistry, high-temperature mineral-chemical kinetics, aqueous thermodynamics, and applications of geochemistry. Students in GEO 618 will do additional reading and problems and must have all prerequisites and graduate standing. (Prerequisites: CHEM 105X-106X and either GEOS 213, 214, and 322 or CHEM 331 and 332.)

GEOS 418 3 Credits Fall
Basic Geophysics (3+0)
Concepts and techniques of geophysics including origin of the earth, its structure, and large scale dynamic processes responsible for its surface features. Geophysical techniques including seismology, gravity, magnetometry, and electrical methods discussed along with measurements of the earth's thermal structure, rotation rates, and tectonic effects. (Prerequisite: Permission of the instructor.)

GEOS 420 4 Credits Alternate Fall
Elements of Seismology (3+3)
Global distribution of earthquakes; causes and effects of earthquakes with reference to Alaska; instrumentation utilization for determination of earthquake sources and subsurface structures; techniques for studies of seismotectonics and earthquake prediction. (Prerequisite: Geoscience students: MATH 201; Civil Engineering students: EES 331. Next offered: 1995-96.)

GEOS 422 3 Credits Spring
Geoscience Applications of Remote Sensing (2+3)
Remote sensing and its application to geologic, environmental and physical sciences. Includes nomenclature, a review of sensing systems, and forms in which data is available. Emphasis on use of LANDSAT, radar imagery, thermal imagery and color infrared photography. (Prerequisites: PHYS 104, 212, junior standing or consent of instructor.)

GEOS 430 3 Credits Spring
Statistics and Data Analysis in Geology (3+0)
Computer-supported geologic applications of elementary statistics, Markov chains, time-series analysis, trend-surface analysis, factor analysis, cluster analysis, discriminant analysis, and multiple regression. Laboratory fee: $15.00. (Prerequisites: MATH 200 or STAT 301; senior standing or permission of instructor.)

GEOS 432 3 Credits Alternate Fall and Spring
Geology of Mineral Resources (3+0)
Occurrence and characteristics of metallic and selected non-metallic mineral deposits, geographic locations, petrotextural settings, mineralogic and petrologic features, and theories of genesis, with applications to exploration and development. (Prerequisites: GEOS 214, 322, 401. Next offered: 1995-96.)

GEOS 432L 2 Credits Alternate Fall and Spring
Geology of Mineral Resources Laboratory (1+3)
Laboratory work includes identification, characterization and systematic description of major ore types. Laboratory fee: $15.00. (Prerequisites: GEOS 214. Next offered: 1995-96.)

GEOS 451 2 Credits Summer
Practical Field Geophysics (n)
A field experience in data acquisition and reduction. Techniques used include gravimetric, radiometric, resistivity, magnetic, electro-magnetic and seismic. Taught concurrently with the last two weeks of GEOS 351. Entrance by preregistration only; apply through the department. Class usually is filled to capacity by February of current year. (Prerequisites: MATH 201, PHYS 212, introductory exploration geophysics, and permission of instructor.)

GEOS 462 4 Credits Alternate Fall
Glacial and Periglacial Geology (3+3)

GEOS 465 3 Credits As Demand Warrants
Geoaerocology (3+0)
(Same as ANTH 465)
Geological context of archaeological sites and the geologic factors that affect their preservation, with emphasis on Alaska. Includes a one or two-day field trip planned for a weekend in late April or early May. Materials fee: $5.00. (Prerequisites: GEOS 101X, an introductory course in archaeology, or permission of instructor. Next offered: 1995-96.)

GEOS 475W.O 2 Credits Spring
Presentation Techniques in the Geosciences (1+3)
(Same as GEOS 675)
Instruction and practice in oral and written communication skills specifically related to the geosciences. Oral and written presentation of abstracts, resumes, proposals, and reports required. Works critically analyzed by instructor(s), and peers for both geoscience content and communication effectiveness. Laboratory fee: $15.00. (Prerequisite: Senior standing in geology.)

GEOS 482 1 Credit Fall, Spring
Geology Seminar (1+0)
A weekly seminar series on a geologic theme of current interest for a complete semester. (Prerequisite: Senior or graduate standing or permission of instructor.)

GEOS 600 4 Credits Fall
Introduction to X-ray Spectrometry (2+6)
A weekly seminar series on a geologic theme of current interest for a complete semester. (Prerequisite: Senior or graduate standing or permission of instructor.)

GEOS 602 3 Credits Alternate Fall
Geophysical Fields (3+0)

GEOS 603 1-2 Credits As Demand Warrants
Advanced Field Mapping (0+3)-(1+3)

GEOS 604 3 Credits Alternate Spring
Intermediate Seismology (3+0)

GEOS 605 3 Credits Geochronology (3+0)

GEOS 606 2 Credits Alternate Spring
Volcanology (2+0)

GEOS 607 2 Credits Spring
Advanced Paleomagnetism (1+3)

GEOS 609 2-4 Credits Alternate Spring
Advanced Geomorphology (2-4+0-3)

GEOS 610 3 Credits Alternate Spring
Advanced Seismology (3+0)

GEOS 611 3 Credits Alternate Fall
Advanced Structural Geology and Tectonics (3+0)

GEOS 612 3 Credits Alternate Fall
Geologic Evolution of Alaska (3+0)

GEOS 613 3 Credits Alternate Spring
Global Tectonics (3+0)
GEOS 614 3 Credits Ice Physics (3+0) Alternate Spring
GEOS 615 3 Credits Sea Ice (3+0) Fall
GEOS 616 3 Credits Permafrost (3+0) Alternate Spring
GEOS 617 3 Credits Glaciers (3+0) Alternate Fall
GEOS 618 3 Credits Introduction to Geochemistry (3+0) Fall
(Same as GEOS 417)
GEOS 620 3 Credits Geodynamics (3+0) Alternate Fall
GEOS 621 3-4 Credits Advanced Petrology (2-3+3-6) As Demand Warrants
GEOS 635 1-4 Credits Advanced Economic Geology (1-4+0-3) As Demand Warrants
GEOS 637 4 Credits Rock-Forming Minerals (3+3) As Demand Warrants
GEOS 640 4 Credits Petrology of Carbonate Rocks (3+3) Alternate Spring
GEOS 643 3 Credits Sandstone Depositional Environments (3+0) Alternate Fall
GEOS 647 3 Credits Advanced Sedimentology and Stratigraphy (3+0) As Demand Warrants
GEOS 649 3 Credits Geomorphology of the Unglaciated Arctic and Subarctic (3+0) As Demand Warrants
GEOS 650 3 Credits Paleocology of Beringia (3+0) As Demand Warrants
GEOS 651 3 Credits Quaternary Seminar (3+0) As Demand Warrants
(Same as ANTH 651)
GEOS 652 3 Credits Quaternary Vegetation History (2+3) Alternate Fall
GEOS 661 3 Credits Microwave Active Remote Sensing (3+0) Alternate Spring
GEOS 662 3 Credits Microwave Scattering from Land, Sea and Ice (3+0) Alternate Fall
GEOS 670 1-3 Credits Selected Topics in Volcanology (1-3+0) Fall
GEOS 671 3 Credits Volcano Seismology (3+0) Alternate Spring
GEOS 675 2 Credits Presentation Techniques in the Geosciences (1+3) Spring
(GEOS 475W/O)

**German**

For information on studying in German-speaking countries, see Study Abroad; on compulsory placement tests, see Course Placement; on "bonus credit," see Alternative Ways to Earn Credit.

**GER 075** 3 Credits As Demand Warrants
**GER 076** 3 Credits As Demand Warrants

Conversational German I and II (3+0)
An introductory course for students who wish to acquire the ability to speak German. Students first learn to understand simple spoken language, then to speak simple German developing a beginning level of communicative competence in the language. (Prerequisite: GER 075 for 076.)

**GER 101** 5 Credits Fall
**GER 102** 5 Credits Spring

**Elementary German I and II (5+0) h**
Introduction to the language and culture: development of competence and performance in the language through understanding, recognition, and use of linguistic structures; increasing emphasis on listening comprehension and speaking; basic vocabulary of approximately 1,000 words; exploration of the cultural dimension, implicitly through language, and explicitly through text and audiovisual materials. Materials fee: $2.00.

**GER 201** 3 Credits Fall
**GER 202** 3 Credits Spring

**Intermediate German I and II (3+0) h**
Continuation of GER 102. Increasing emphasis on reading ability and cultural material. Conducted in German. Materials fee: $2.00. (Prerequisite: GER 102 or equivalent.)

**GER 301W/O 3 Credits Fall**
**GER 302W/O 3 Credits Spring**

**Advanced German (3+0) h**
Discussions and essays on more difficult subjects or texts. Translations, stylistic exercises, and special grammatical problems. Conducted in German. Materials fee: $5.00. (Prerequisite: GER 202 or equivalent.)

**GER 431W 3 Credits Alternate Spring**

**Studies in the Culture of the German Speaking World (3+0) h**
Study of the cultures of the German speaking world. Conducted in German. Students may repeat course for credit if topic varies. Materials fee: $5.00. (Prerequisites: GER 301 or equivalent; junior standing or permission of instructor. Next offered: 1995-96.)

**GER 432W 3 Credits Alternate Spring**

**Studies of Literature in German (3+0) h**
Intensive study of authors, literary texts, movements, genres, themes, and/or critical approaches. Conducted in German. Student may repeat course for credit when topics vary. Materials fee: $5.00. (Prerequisites: GER 302 or equivalent and at least junior standing, or permission of instructor. Next offered: 1996-97.)

**GER 482 3 Credits As Demand Warrants**

**Selected Topics in German (3+0) h**
Intensive course focusing on topics not covered in GER 431 or GER 432. Course may be repeated for credit if topic varies. Materials fee: $4.00. (Prerequisites: GER 302 or equivalent; junior standing, or permission of instructor. Next offered: Fall 1995.)

**GER 488 3 Credits As Demand Warrants**

**Individual Study: Senior Project h**
Designated to permit the student to demonstrate ability to work with the language and the culture through the analysis and presentation, in the language, of a problem chosen by the student in consultation with the department. The student must apply for senior project and submit a project outline by the end of the 6th week of the semester preceding the semester of graduation. Offered normally in the semester preceding the student's graduation. Conducted in German. (Prerequisites: At least 10 credits in upper division German or permission of instructor.)

**Health**

**HLTH 101** 1 Credit As Demand Warrants

**CNR - Normal Nutrition Counseling (1+1)**
First in a series of four courses examines basic applied nutrition and counseling techniques. Counseling opportunities are provided to allow students to practice skills learned in the classroom. Graded Pass/Fail.

**HLTH 102** 1 Credit As Demand Warrants

**CNR - Therapeutic Nutrition Counseling (1+1)**
Second in a series of four courses examines basic therapeutic knowledge and nutrition counseling techniques. Counseling opportunities are provided to allow students to practice skills learned in the classroom. Kuskokwim Campus only. Graded Pass/Fail. (Prerequisite: HLTH 101 or permission of instructor.)

**HLTH 103** 1 Credit As Demand Warrants

**CNR - Nutrition Education and Food Preservation (1+1)**
Third in a series of four courses examines methods for planning and presenting group nutrition education talks and food preservation methods. Graded Pass/Fail. (Prerequisite: HLTH 102 or permission of instructor.)

**HLTH 104** 1 Credit As Demand Warrants

**CNR - Community Resources and Problem Solving (1+1)**
Fourth in a series of four courses examines community nutrition resources and methods for community nutrition problem solving. Graded Pass/Fail. (Prerequisite: HLTH 103 or permission of instructor.)
History

HIST 100X 3 Credits Fall, Spring
Modern World History (3+0) s
Significant aspects of modern world history, using either a chronological or an issues approach to be announced when offered. The chronological approach will examine major global developments in the twentieth century, while the issues approach will deal with such aspects of the modern world as revolutionary change, the interaction of peoples, ideology, and the historical background of significant contemporary events.

HIST 101 3 Credits Fall
Western Civilization (3+0) s
Origins and major political, economic, social, and intellectual developments of western civilization to 1500. Also available via Independent Learning.

HIST 102 3 Credits Spring
Western Civilization (3+0) s
Major political, economic, social, and intellectual developments of western civilization since 1500. Also available via Independent Learning.

HIST 103 3 Credits As Demand Warrants
History of the Yukon-Kuskokwim Delta (3+0) s
The region's history beginning with oral traditions about the creation of the area, and ending with passage of the Alaska Native Land Claims Act in 1971. Concentrates on Yup'ik social, economic, and educational changes, including both native and non-native accounts. Offered only at the Kuskokwim Campus.

HIST 105 1 Credit As Demand Warrants
Introduction to the History and Culture of the Seward Peninsula (1+0) s
Cultural history of the Seward Peninsula peoples for the last 10,000 years using physical anthropology, ethnography, ethnohistory, linguistics, archaeology, social anthropology, ecology, and climatology. Eskimo and Euro- American cultures which have existed in western Alaska. Materials fee: $5.00.

HIST 110 3 Credits Fall, Spring
History of Alaska Natives (3+0) s
The history of Alaska Natives from contact to the signing of the Land Claims Settlement Act.

HIST 115 3 Credits Alternate Spring
Alaska, Land and Its People (3+0) s
A survey of Alaska from earliest days to present, its peoples, problems, and prospects. (Next offered: 1995-96.)

HIST 121 3 Credits Alternate Fall
East Asian Civilization (3+0) s
Origin and development of the civilizations of China, Japan and Korea from the beginning to 1800, with emphasis on traditional social, political, and cultural institutions. (Next offered: 1995-96.)

HIST 122 3 Credits Alternate Spring
East Asian Civilization (3+0) s
East Asia from 1800 to the present with emphasis on patterns of social cohesion, transition, and revolutionary change. (Next offered: 1995-96.)

HIST 123 3 Credits As Demand Warrants
Japan: The Changing Tradition (3+0) s
Focuses on the history and changing cultural traditions of Japan's modern era, the brief period during which Japan has developed its own distinctive form of an urbanized, industrialized, and democratic society.

HIST 131 3 Credits Fall
History of the U.S. (3+0) s
Fall semester: The discovery of America to 1865. Colonial period, revolution, formation of the constitution, western expansion, Civil War, Spring semester: From the reconstruction to the present. Both courses also available via Independent Learning.

HIST 141 3 Credits Alternate Fall
Africa Since 1800 (3+0) s
Introduction to the complex issues which have formed modern Africa, including imperialism, colonialism, partition, seclusion, unrest, and numerous other difficulties resulting from contact with non-African societies. (Next offered: 1995-96.)

HIST 200 3 Credits As Demand Warrants
Heritage of Alaska Natives (3+0) s
Alaska Native cultures, kinship systems, world views and social organizations. Covers pre-contact days to the present including effects of the Native Land Claims Act.

HIST 201 3 Credits As Demand Warrants
History of the Bering Straits (3+0) s
Prefatory period: exploration and permanent settlement, material culture, religious, education, focus on the influence these factors have had on development of the region. Includes analysis of perceptions of others in writings about the region.

HIST 202 3 Credits Alternate Spring
History of Women in America (3+0) s
(Same as WMS 202) s
A chronological approach; study of issues of concern; introduction to different approaches utilized in analysis of women's past, consideration of multi-racial perspectives. (Next offered: 1995-96.)

HIST 244 3 Credits As Demand Warrants
Movies: Mirror of the World (3+0) s
World history using the medium of film to highlight cultural, economic and political conditions of each country. Films will be from the USA, Mexico, Central America, South America, England, France, Russia, Turkey, India, China, Japan, Australia, Africa, and the Arctic. Offered only at the Kuskokwim Campus.

HIST 250 3 Credits As Demand Warrants
Alaska History for Local Historians (3+0) s
Techniques of regional and local historical research using exploration accounts, oral history, education reports, census studies, newspapers, etc. Final project of original research required. This local history course is currently available with emphasis on the Bering Straits, Bristol Bay, and Aleutian/Pribilof regions.

HIST 257 3 Credits As Demand Warrants
Gold Rush Era: Myth and Reality (3+0) s
The Gold Rush Era of 1880-1905 in Alaska and the Yukon. Emphasis on the Klondike, but Juneau, Nome and Fairbanks are also investigated. Fact and fiction utilized to understand the myth and reality of the era.

HIST 305 3 Credits Alternate Fall
Europe: 1789-1850 (3+0) s
The French Revolution, Napoleon, the Industrial Revolution, the Revolutions of 1848, their impact on political, economic, social and intellectual history. (Prerequisite: HIST 102 or permission of instructor. Next offered: 1995-96.)
HIST 306 3 Credits  Alternate Spring  Europe: 1850-1900 (3+0) s  The European Imperium: industrialization, nationalism, imperialism and their impact on political, social and cultural development. (Prerequisite: HIST 102 or permission of instructor. Next offered: 1995-96.)

HIST 315 3 Credits  Alternate Fall  Europe: 1900-1945 (3+0) s  Europe through two world wars, the Russian Revolutions, the depression, the development of fascism, and the evolution of Russian Communism. (Prerequisites: HIST 101, 102 or permission of instructor. Next offered: 1996-97.)

HIST 316 3 Credits  Alternate Spring  Europe Since 1945 (3+0) s  Germany and problems of the Peace, the Soviet Union and the satellite states, the Cold War, Economic Problems and Recovery, European Integration and the Common Market, Europe and the world. (Prerequisites: HIST 101, 102 or permission of instructor. Next offered: 1995-96.)

HIST 320 3 Credits  Alternate Spring  Modern Scandinavian (3+0) s  Scandinavia (Denmark, Finland, Iceland, Norway, and Sweden) from the 19th Century to the present: the development of parliamentary democracy and welfare systems, cooperation and neutrality, and Scandinavia's experience in the world wars. (Prerequisite: HIST 101 or 102 or permission of instructor. Next offered: 1995-96.)

HIST 321 3 Credits  Alternate Fall  English History (3+0) s  Fall semester: Pre-Roman Britain to the end of the Puritan Revolution, emphasizing social and political developments. Spring semester: From the restoration of 1660 to the present, emphasizing social, economic, and political developments. Attention given to the British Empire and Commonwealth. (Next offered: 1995-96.)

HIST 322 3 Credits  Alternate Spring  Modern China (3+0) s  From 1800 to the present: resistance to change, rebellion, reform, revolution, and the rise of the People's Republic. (Prerequisite: HIST 121 or 122 or permission of instructor. Next offered: 1996-97.)

HIST 331 3 Credits  Alternate Spring  Modern Japan (3+0) s  From 1600 to the present: change within tradition, rise to world power, and the position of Japan in the modern world. (Prerequisite: HIST 121 or 122 or permission of instructor. Next offered: 1995-96.)

HIST 345 3 Credits  Independent Learning Only  Maritime History of Alaska (3+0) s  A survey of Alaska's maritime history with emphasis on exploration and resource utilization by Natives, Russians, and Americans. (Prerequisite: Junior standing or permission of the instructor.)

HIST 350 3 Credits  Alternate Spring  History of the People's Republic of China (3+0) s  Political, economic, and social developments, from 1949 to the present. (Prerequisite: HIST 121 or 122, or permission of instructor. Next offered: 1995-96.)

HIST 354 3 Credits  Alternate Fall  Canadian History to 1867 (3+0) s  The political, social, and economic development of Canada from the founding of New France to Confederation. (Next offered: 1996-97.)

HIST 355 3 Credits  Alternate Spring  Canadian History: 1867 to Present (3+0) s  The political, social, and economical development of Canada from Confederation to the present. (Next offered: 1995-96.)

HIST 375 3 Credits  Alternate Fall  History of the Northern Pacific (3+0) s  Development and interrelationships and problems of the North Pacific (Siberia, Canada, Alaska) from the 18th century to the present. (Prerequisite: Junior standing or permission of instructor. Next offered: 1995-96.)

HIST 401 3 Credits  Alternate Fall  Renaissance and Reformation Europe (3+0) s  Political, economic, and intellectual developments during the 15th and 16th centuries in Europe. (Prerequisites: HIST 101 or 102 and junior standing, or permission of instructor. Next offered: 1995-96.)

HIST 402 3 Credits  Alternate Fall  Seventeenth and Eighteenth Century Europe (3+0) s  Political, social, economic, and cultural developments during the 17th and 18th centuries in Europe. (Prerequisites: HIST 101 or 102 and junior standing, or permission of instructor. Next offered: 1996-97.)

HIST 405 3 Credits  Alternate Fall  Modern Germany (3+0) s  Germany from 1848 to present: unification, the Second Empire, WWI, the Weimar Republic, National Socialism, WWII, the Holocaust, the creation of two post-war German states with different societies and reunification. Emphasis on political, social and economic developments. (Prerequisites: HIST 101 or 102. Next offered: 1995-96.)

HIST 424 3 Credits  Alternate Spring  Topics in Women's History (3+0) s  (Same as WMS 424) An in-depth seminar on a specific topic of current interest. Topics may change and may cover the history of European or American women from the 18th century to the present. (Prerequisites: A lower division history course and junior standing or permission of instructor. Next offered: 1995-96.)

HIST 430W 3 Credits  Alternate Fall  American Colonial History (3+0) s  Early American European settlement, economic and social development of the American community, establishment of political independence. (Prerequisites: HIST 131, 132 or permission of instructor. Next offered: 1996-97.)

HIST 435W 3 Credits  Alternate Spring  Civil War and Reconstruction (3+0) s  Political, economic, social and diplomatic history of 1860-77, disruption and re-establishment of the Union. (Prerequisites: HIST 131, 132 or permission of instructor. Next offered: 1995-96.)

HIST 440 3 Credits  Alternate Fall  U.S. Westward Expansion 1763-1867 (3+0) s  Westward expansion and acquisition of territory, admission of new states, development of land policy, treatment of native people. (Prerequisite: HIST 131 or permission of instructor. Next offered: 1995-96.)

HIST 441 3 Credits  Alternate Spring  The Development of the American and Canadian West 1867-Present (3+0) s  Building of transcontinental railroads and plains settlement in U.S. and Canada and Klondike gold rush. Theories of frontier development, statehood movements and views of the West as a "colonial" region in the 20th century. (Prerequisite: HIST 132 or HIST 440 or permission of instructor.)

HIST 442 3 Credits  Fall  History of the American Military s (Same as MILS 442)  The military's place in American life and society from the Colonial era to the present. Role of the military institution in shaping the nature of American society while reflecting the character of the society it serves. Also available via Independent Learning. (Prerequisite: Sophomore standing or permission of instructor.)

HIST 450W 3 Credits  Alternate Spring  Twentieth Century America (3+0) s  United States from the progressive movement to the present day, with emphasis on domestic developments. (Prerequisites: HIST 131, 132 or permission of instructor. Next offered: 1995-96.)

HIST 451 3 Credits  Independent Learning Only  History of U.S. Foreign Policy s  Evolution of U.S. foreign policy with emphasis on post-World War II period and emergence of a bipolar distribution of power. Includes discussion of the Vietnam War, American policy in the Middle East, and the foreign policy views of the Kennedy, Nixon, Carter and Reagan administrations. (Prerequisite: Junior standing or permission of the instructor.)

HIST 455 3 Credits  Alternate Fall  Military History (3+0) s  Warfare from classical times to the present: the interrelationships of warfare and society, the role of technology and the development of tactics and strategy. (Prerequisites: Junior standing or permission of instructor. Next offered: 1996-97.)

HIST 460 3 Credits  Spring  Russian America (3+0) s  A history of Russian exploration and settlement in North America, including the impact of this contact on the indigenous peoples.

HIST 461 3 Credits  Fall  History of Alaska (3+0) s  (Same as NORS 661)  Alaska from prehistoric times to the present, including major themes such as Native Alaska, colonial Alaska, military Alaska, statehood, Alaska Native Claims Settlement Act of 1971, and the Alaska National Interest Lands Act of 1980. Also available via Independent Learning. (Prerequisite: Junior standing.)
HIST 464 3 Credits Spring
History of Russia (3+0) s
(Same as NORS 664)
Origin and development of Russia from early times to the present. Emphasis on the nineteenth and twentieth centuries. (Prerequisites: HIST 101, 102 or permission of the instructor.)

HIST 475W 3 Credits Fall
Researching and Writing Alaska History (1.5+3)
Introduction to research methodology, differing historical interpretations, sources used by historians, such as primary materials and secondary sources, and appropriate footnoting. Research paper required based on archival sources. (Prerequisite: Senior standing or permission of instructor.)

HIST 475W 3 Credits Spring
Historiography (3+0) s
Historical interpretation by different historians on a topic of the student's choosing. (Prerequisites: History major with junior or senior standing or instructor permission.)

HIST 466W.O 3 Credits Spring
Historical Method (3+0) s
Preparation and writing of a senior thesis using primary research materials on a topic of the student's choosing. (Prerequisites: HIST 475 and instructor permission.)

HIST 481 3 Credits Alternate Spring
Polar Exploration and its Literature (3+0) s
(Same as NORS 681)
A survey of polar exploration efforts of all Western nations from A.D. 870 to the present and a consideration of the historical sources of this effort. Also available via Independent Learning. (Prerequisite: Junior standing or permission of instructor. Next offered: 1995-96.)

HIST 482 3 Credits Alternate Spring
History of Circumpolar Research (3+0) s
(Same as LS 482 and NORS 682)
Studies the history of arctic and subarctic sciences through geological, biological and atmospheric sciences and the people through anthropology, ethnography, linguistics and history. Cold regions engineering and technology research in education, government and law covered. The literature and source material on these fields analyzed. (Prerequisite: HIST 110 or 115 or ANTH 242 or BIOL 104 or permission of instructor. Next offered: 1995-96.)

HIST 483W 3 Credits Alternate Fall
20th Century Circumpolar History (3+0) s
(Same as NORS 683)
A comparative history of the circumpolar north, including Alaska, Siberia, Scandinavia, Greenland and Canada. Focus on social, economic, political and environmental issues of the 20th century, such as exploration, aboriginal land claims, subsistence, military strategy, transportation, oil development, Arctic haze, and scientific research in the Arctic. (Prerequisite: Junior standing or permission of the instructor. Next offered: 1995-96.)

HIST 600 3 Credits Fall
Perspectives on the North (3+0)
(Same as NORS 600)

HIST 690 3 Credits Alternate Spring
Researching and Writing Public Northern History (1+3)
(Same as NORS 690)

Honors

HONR 390 3 Credits As Demand Warrants
Liability and Values (3+0) h
The study of standards of conduct and moral judgement. The professional, moral and ethical responsibilities of the individual to employers, employees and society will be examined. (Prerequisites: Sophomore standing and permission of the Honors Director or instructor.)

Human Services

HMSV 201 3 Credits As Demand Warrants
Introduction to Human Services (3+0)
Examines purposes and functions of the various social and human service programs which constitute society's organized response to social problems. Federal, state and local programs and agencies are described, including those directed at child welfare, alcohol and drug abuse, mental health, juvenile delinquency, and discrimination. (Prerequisite: SOC 101 or HPSY 101).

HMSV 205 3 Credits Fall
Factors in Health and Disease (3+0)
Introduction to the phenomenon of human disease. Cases presented demonstrate ways the normal healthy state may be disrupted by external or internal influences. Natural histories of major types of disease are reviewed.

HMSV 210 3 Credits Alternate Fall
Crisis Intervention (3+0)
Theoretical foundations and appropriate techniques and strategies for helping individuals, families, and groups during stressful situations. Application of the crisis approach to stress-induced situations, such as natural disasters, developmental life crises, rapid social change, and situational crises such as illness and personal loss. (Prerequisites: SOC 101 or HPSY 101 or permission of instructor. Next offered: 1995-96.)

HMSV 215 3 Credits As Demand Warrants
Death and Dying (3+0) s
An interdisciplinary study of thanatology with material from multicultural, humanistic and life span perspectives. Topics include attitudes in societies, individual responses to bereavement, children's understanding of death and ethical issues associated with choices at the end of life. (Prerequisite: Instructor permission.)

HMSV 225 2 Credits As Demand Warrants
Case Management (2+0)
(Same as SWK 225)
Basic knowledge and skills to develop service plans in human service work and to maintain appropriate case records. Legal and ethical issues in case management considered and discussed.

HMSV 230 3 Credits As Demand Warrants
Alcoholism: Causes and Consequences (3+0)
Examination of theories concerning the causes of alcoholism. Physical and psychological factors, personality disorders or disease states. Data supporting these theories evaluated. (Prerequisite: SOC 101 or HPSY 101 or permission of instructor.)

HMSV 255 3 Credits Fall
Foundations of Counseling I (3+0)
(Same as PSY 255)
Survey of counseling philosophy approaches and types of counseling systems in use. Topics include approach and system match, psychoanalysis, behavior therapy, and humanistic approaches; counseling ethics and ethical problems. (Prerequisites: PSY 101, 240 or permission of instructor.)

HMSV 284 3 Credits Variable Credits As Demand Warrants
Human Services Seminar
Identification and discussion of issues relevant to the human services field. Specific topics announced. (Prerequisite: Permission of instructor.)

HMSV 330 3 Credits As Demand Warrants
Alcoholism: Treatment and Prevention (3+0)
Survey and evaluation of alcoholism and alcohol abuse treatment and prevention programs with emphasis on prevention strategies. (Prerequisites: HMSV 230.)

HMSV 340 1 Credit Spring
Peer Advisor Training (1+0)
Emphasis on developing skills needed to assist exploratory/undeclared students with their academic planning and decision making. Topics include resource referral, communication/active listening, academic and career planning, time and stress management, group dynamics, and values clarification. (Prerequisites: Sophomore standing and application.)

HMSV 342 3-5 Credits Fall, Spring
Peer Advising Practicum (0-3 or more)
Supervised peer advising experience (both individually and paired with faculty members in the Academic Advising Center or appropriate department, allowing for application of theory and skills gained in HMSV 340. (Prerequisite: HMSV 340.)
Human Service Technology

HMSV 356  3 Credits  Spring
Foundations of Counseling II (3+0)
Continuation of HMSV 255. Specific counseling strategies studied in-depth include crisis intervention, individual techniques such as the rational therapies, and specific behavioral approaches. Other topics include role of the counselor in community education and consultation, methods of promoting community change and issues in cross-cultural counseling. (Prerequisite: HMSV 255 or PSY 255.)

HMSV 410  3 Credits  As Demand Warrants
Management of Human Services Programs (3+0)
Basic methods of program management and personnel supervision, with emphasis on applications in rural or isolated locations. Supervised in-service activities. (Prerequisite: HMSV 255.)

HMSV 415  3 Credits  As Demand Warrants
Group Processes (3+0)
Study of various groups including problem solving/task-oriented, encounter, therapy, career guidance, and assertive training. Different theoretical orientations to group counseling discussed. (Prerequisites: HMSV 255, 356.)

HMSV 445  3 Credits  Fall
Community Psychology (3+0)
(Same as PSY 445)
Foundations of community psychology including community assessment calculations. Community assessment activities explored include selecting study areas, surveys, evaluation of services, and use of results. During the community consultation portion, education, prevention, and service issues are covered. Attention given to rural and small community assessment and change especially as it applies to Alaska. (Prerequisites: PSY 101, SOC 101 and HMSV 201.)

HMSV 488  3-6 Credits  As Demand Warrants
Practicum in Human Services
Supervised work experience in case management including interviewing, assessment, facilitating, and intervening. Enrollment can be prior to or concurrent with placement in a human service agency. Student's study and work directed by a university instructor and an agency supervisor. (Prerequisites: HMSV 255. Student must be a major in the program.)

Humanities

Admission to this program is presently suspended.

HUM 101  3 Credits  As Demand Warrants
The Humanities: A Cultural Perspective (3+0)
Examination of humanities using a non-Yup'ik culture and the Yup'ik culture as bases. Introduction of fundamental principles of Yup'ik and non-Yup'ik performing and visual arts, ideas and cultural developments that have stirred and enriched civilization, and aspects of Yup'ik and non-Yup'ik culture to help students develop greater awareness of forces that affect them. Offered only at the Kuskokwim campus.

HUM 131  3 Credits  As Demand Warrants
Introduction to Alaska Literature (3+0)
Survey of Alaska literature, poetry and drama with emphasis on appreciation of literature written by both natives and non-Natives. Students read examples from oral Native tradition, the frontier era, and meet contemporary living writers by audioconference.

HUM 161  3 Credits  As Demand Warrants
In Our Own Image (3+0)
Focuses on some very basic notions about people - how they see things and what they care about - and some very basic notions about the fine arts - how they are created, how they communicate, and how they can be evaluated.

HUM 201X  3 Credits  Fall
Unity in the Arts (3+0) h
Concentration on the interdependence of the visual arts, the performing arts, and literature, as set against a specific social, political, and cultural background of selected eras. (Prerequisite: Open to students beyond the freshman level or by permission of the instructor.)

HUM 202  3 Credits  Spring
Unity in the Sciences (3+0) h
A detailed treatment of scientific methods and principles within a larger cultural context. Explanation of the roles of mathematics and logic in the structure of the scientific enterprise. (Prerequisite: Open to students beyond the freshman level or by permission of the instructor.)

HUM 211  3 Credits  As Demand Warrants
Introduction to Humanities I (3+0)
Integrated exploration of fundamental principles of literature, music, and visual arts.

HUM 212  3 Credits  As Demand Warrants
Introduction to Humanities II (3+0)
Study of specific historical period or periods with reference to philosophy, literature, science, art and music.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
</table>
| JPN 201    | 4       | Fall | Intermediate Japanese I and II (4+0) h  
The student will learn to read and write an additional 250 kanji. Conversational ability and listening comprehension enhanced by using videotape materials. Courses are taught in Japanese. Materials fee: $5.00. (Prerequisite: JPN 102 or equivalent.) |
| JPN 301    | 3       | Fall | Advanced Japanese (3+0) h  
Development of advanced conversational and reading skills. Topics may include: modern Japanese prose fiction; newspaper Japanese; advanced conversation through the study of common contractions and idiomatic usage in the standard Tokyo dialect; and a study of television drama series. May be repeated with different topics. Materials fee: $5.00. (Prerequisite: JPN 202 or equivalent.) |
| JPN 331    | 3       | Alternate Spring | Women's Voices in Japanese Literature (3+0) h  
(Same as WMS 331)  
A close reading of selected novels, short stories, poems, and diaries by Japanese women from the tenth century to the present which reveal the personal, social, aesthetic and intellectual concerns of women in different periods of Japanese history. Focus on the changing role of women in Japanese society, the role of women writers as social critics, and cross-cultural differences and similarities in women's issues. (Prerequisites: ENGL 211X or 213X, ENGL/FIL 200X; HIST 121, 122 or 331 recommended. Next offered: 1995-96.) |
| JPN 431    | 3       | Alternate Spring | Studies in Japanese Culture (3+0) h  
Further study of advanced written and spoken Japanese through essays, newspaper and journal articles, and television documentaries dealing with topics in Japanese culture. Materials fee: $5.00. (Prerequisite: JPN 302. Next offered: 1996-97.) |
| JPN 100A   | 3       | As Demand Warrants | Introduction to Conversational Japanese I (3+0) h  
Introduction to basic conversational Japanese, nonverbal forms of communication, and various aspects of Japanese society and culture. Note: JPN 100A and JPN 100B are not equivalent to JPN 101 and do not satisfy core curriculum requirements. This course may be taken for a letter grade or Pass/Fail. |
| JPN 100B   | 3       | As Demand Warrants | Introduction to Conversational Japanese II (3+0) h  
Introduction to basic conversational Japanese, nonverbal forms of communication, and various aspects of Japanese society and culture. Note: JPN 100A and JPN 100B are not equivalent to JPN 101 and do not satisfy core curriculum requirements. This course may be taken for a letter grade or Pass/Fail. (Prerequisite: JPN 100A or instructor permission.) |
| JPN 101    | 5       | Fall | Elementary Japanese I and II (5+0) h  
Introduction to spoken and written Japanese. The student will acquire a vocabulary of approximately 1,000 words and will learn to read and write the two syllabaries, hiragana and katakana, as well as 150 kanji. Cultural dimension is explored implicitly through language and explicitly through audiovisual materials. Courses are taught in Japanese. Materials fee: $10.00. |
| JPN 102    | 5       | Spring | Introduction to Broadcasting (3+0) h  
Principles of broadcasting as they relate to the people of the United States, including history, government involvement, and social effects. |
COURSE DESCRIPTIONS / 163

JB 105  3 Credits  Spring
History of the Cinema (3+0) h
History and development of the medium of film in the United States and abroad during the last 100 years. Content will vary each semester. Materials fee: $25.00. Also available via Independent Learning.

JB 201  3 Credits  As Demand Warrants
Writing for the Media (3+0) h
Basic journalism writing, including information gathering, grammar, word use and style, news story structure, interviewing techniques, headline writing, and writing for broadcast news. Emphasis on student mastery of clear, concise writing. Available via audioconferencing. (Prerequisite: ENGL 111X or instructor permission.)

JB 203  3 Credits  Fall, Spring
Basic Photography (2+3) h
Photography fundamentals, including use of an adjustable camera, film and exposure techniques, filters, flash techniques, and an introduction to color. Darkroom procedures including black and white film processing and printing, photograph design and composition. Students must have use of an adjustable camera. Laboratory fee: $40.00.

JB 215  3 Credits  Fall, Spring
Audio Production (2+3)
Sound production for radio, television, film, and stage amplifications. Emphasis on writing, recording, control room techniques, and editing. Laboratory fee: $25.00.

JB 217  3 Credits  Spring
Introduction to the Study of Film (2+2) h
(Same as ENGL 217)
An appreciation course designed to introduce the student to the various forms of cinematic art with special emphasis on humanistic and artistic aspects. (Prerequisite: ENGL 111X.)

JB 240  3 Credits  Spring
International Communications (3+0) h
Historical development of different mass communication systems around the globe. The relationship between press philosophies and their practical implementation. Mass communication systems of selected countries as representative examples of generalized systems.

JB 301W  4 Credits  Fall, Spring
News Reporting and Writing (2+4) h
Finding and getting the story, writing the lead, developing story structure, writing on deadline, editing copy, writing headlines and captions, cropping and sizing pictures, and writing for broadcast news. Laboratory fee: $25.00. (Prerequisites: ENGL 111 and ENGL 211, 213 or 311, junior standing or instructor permission.)

JB 308  3 Credits  Fall
Film and TV Criticism (3+0) h
Theoretical approaches to viewing, analyzing and evaluating film and television program content. Laboratory fee: $25.00.

JB 311W  3 Credits  Fall
Magazine Article Writing (2+1) h
Writing articles for publication. Students repeating the course limited to six credits. Laboratory fee: $25.00. (Prerequisite: JB 301 or permission of instructor.)

JB 316  3 Credits  Fall
Television Productions (2+4)
Television production, floor directing, audio, camera, film chain, staging, lighting, and switching. Materials fee: $40.00. (Prerequisite: JB 215 or permission of instructor.)

JB 317W  3 Credits  Fall
Broadcast Journalism (3+0) h
Overview of the broadcast journalism field. Emphasis on intensive broadcast news writing practice, including interviewing techniques, ethical issues and current controversies, structure of television and radio news operations and broadcast reporting experiences. (Prerequisite: JB 301 or instructor permission.)

JB 320  3 Credits  Spring
Journalism in Perspective (3+0) h
Present problems and trends in mass communication with emphasis on historical development, including survey of world press coverage and problems. (Prerequisite: Junior standing.)

JB 323  3 Credits  Fall
Publication Editing (3+0) h
Publication management and editing: content selection, design, editorial responsibility, and economics of publishing. Laboratory fee: $25.00. (Prerequisite: Junior standing.)

JB 324  3 Credits  Spring
Typography and Publication Design (2+2) h
Typography, layout, and design, coupled with a study of the methods of printing production. Materials fee: $25.00. (Prerequisite: Permission of instructor.)

JB 326  3 Credits  Spring
Principles of Advertising (3+0) h
(Same as BA 326)
Advertising including strategy, media use, creation and production of advertisements and measurement of advertising effectiveness. (Prerequisite: Junior standing.)

JB 340  3 Credits  Spring
Mass Media and Society (3+0) h
The growth and development of mass media research in the U.S. in the twentieth century. Methods used in media research, how the data are used by media professionals, and how to evaluate current media research. Different forms of research conducted using local media. Use of Neilson and Arbitron ratings books.

JB 380  3 Credits  Spring
Women, Minorities and the Media (3+0) h
(Same as WMS 380)
Examination of how women and minorities are portrayed in the mass media, the employment of women and minorities in the media, as well as how accurately the media reflects our society demographically. Presented from a feminist, multiculturalist perspective using a broad feminist analysis encompassing issues of gender as well as class, race, age, and sexual orientation. (Prerequisite: Junior standing.)

JB 389  3 Credits  Fall
Internet and Electronic Resources (3+0) h
(Same as LS 389)
Introduction to the internet, its access techniques, its resources, and the principles and skills necessary for using electronic resources. Resources will include OPACs, online databases, electronic journals, and information content databases. Students will be expected to have basic skills in library research, computer literacy and journalism. Materials fee: $25.00. (Prerequisites: LS 100X, LS 101X or permission of instructor.)

JB 400  1-3 Credits  Fall, Spring
Media Practicum (1-6)
Practical training in print or electronic communication. Participation at an approved publication or broadcast station required. (Prerequisite: Senior standing or permission of instructor.)

JB 402  3 Credits  Fall
Advanced Photography (2+3) h
Continuation of JB 203. Emphasis on continuing development of photographic skills by application of basic technical skills to a variety of areas of photography. Laboratory fee: $40. (Prerequisite: JB 203 or instructor permission.)

JB 403  3 Credits  As Demand Warrants
Color Photography (2+3) h
Techniques of exposing and printing color negatives. Color theory in photography, Advanced electronic flash techniques and studio work. Laboratory fee: $50. (Prerequisite: JB 203 or instructor permission. Next offered: 1996-97.)

JB 404  3 Credits  Fall
Photojournalism (2+3) h
Fundamentals of visual communication through photography; issues and techniques of modern photojournalism: news, features, sports, and the photo essay assignments as encountered at a daily newspaper; preparation of photographs for publication. Students must have basic 35mm camera equipment. Laboratory fee: $40. (Prerequisite: JB 203 or instructor permission.)

JB 405  3 Credits  Alternate Years
Advanced Photography Seminar (2+3) h
(Same as JB 605)
Advanced discussion of photojournalism and photographic topics. Topics range from the photographic essay to the history of photography and working in series. Weekly classroom meetings supplemented by field, studio, and darkroom sessions. Laboratory fee: $40.00. (Prerequisite: Completion of two or more of JB 402, JB 403, JB 404 and instructor permission.)

JB 407  3 Credits  Alternate Year
Broadcasting Programming (3+0) h
Programming practices at radio and TV stations, networks, cable companies and relationship of the practices with sales, audience and government. (Prerequisites: JB 215 and JB 316 or permission of instructor. Next offered: Fall 1995.)

JB 408  3 Credits  Alternate Year
Broadcast Station Management (3+0) h
Overview of broadcast station management, including management theories, media competition, media research, regulatory issues of concern to managers, organizational planning, and future trends in media. Case studies in practical problem solving techniques. (Prerequisites: Senior standing or permission of instructor. Next offered: Fall 1994.)
## COURSE DESCRIPTIONS

**JB 411W 3 Credits**  
Advanced Writing for Publication (3-0) h  
Writing advanced prose for publication in books or magazines. May be repeated for credit with permission of instructor. Laboratory fee: $25.00. (Prerequisite: JB 311 or permission of instructor. Next offered: Fall 1994.)

**JB 413 3 Credits**  
Fall  
Common law, statutory law and administrative law that affects the mass media, including libel, copyright, access to the media, constitutional problems, privacy, shield laws, and broadcast regulations. (Prerequisite: JB 301 or permission of instructor.)

**JB 415 3 Credits**  
Spring  
Electronic newsathering, electronic field production using remote videotape equipment. Scriptwriting, budgets, location sound recording, interview techniques, editing, videography, and other aspects of field production. Materials fee: $40.00. (Prerequisites: JB 316, 317.)

**JB 416 3 Credits**  
Fall  
Advanced TV News Production (1-6)  
In-depth experience with television news production including electronic news-gathering. Emphasis on producing broadcast quality news footage and packages. Materials fee: $40.00. (Prerequisites: JB 316, 317 and 415.)

**JB 424 3 Credits**  
Alternate Year  
Magazine Production (2-3)  
Writing, photography, editing, design, layout, advertising, and circulation through the editing and publication of a magazine under journalism faculty supervision. Materials fee: $25.00. (Prerequisite: JB 301. Next offered: Spring 1996.)

**JB 433 3 Credits**  
Fall  
Public Relations (2-4) h  
Techniques, causes and consequences of influencing public opinion; propaganda, mass communication and public relations as instruments of economic, political, and social change. (Prerequisite: JB 301 or permission of instructor.)

**JB 440 3 Credits**  
Fall  
Ethics and Reporting in the Far North (3-0)  
(Same as JB 640 and NORS 640)  
Historical overview of media coverage of the northern frontier with focus on journalistic ethics. Comparison made to media climate in third world countries. Requires an essay on journalism ethics as related to the First Amendment of the Constitution of the United States for 600 level.

**JB 444W 3 Credits**  
Alternate Year  
Advanced News Reporting (2-2) h  
Advanced reporting of news with emphasis on public affairs. Develops sophisticated news judgment, writing and investigative reporting skills for print and electronic media. Laboratory fee: $25.00. (Prerequisites: JB 301, junior standing or permission of instructor. Next offered: Spring 1995.)

**JB 484 3 Credits**  
Spring  
Multimedia Theory and Practice (2-3) h  
(Same as JB 684)  
Study of theory and techniques needed to produce multimedia with a special project for a university or community agency as the required final. For the purpose of this course multi media is defined as computer based, user-driven products with audio, visual and text components and also video or film where appropriate. Materials fee: $75.00. (Prerequisites: Understanding of computer graphics (programs like Illustrator, Freehand, etc.) plus some mastery of a specialty like writing, art or television production.)

**JB 601 3 Credits**  
Communication Methodologies (3-0)  
(Alternate Years)  
(Same as COMM 601)

**JB 605 3 Credits**  
Advanced Photography Seminar (2-3)  
(Alternate Years)  
(Same as JB 405)

**JB 611 3 Credits**  
Spring  
Advanced Writing for Publication (2-3) h

**JB 613 3 Credits**  
Alternate Years  
Advanced Mass Media Law and Regulation (3-0) h

**JB 623 3 Credits**  
Fall  
Advanced Editing for Professionals (3-0) h

**JB 633 3 Credits**  
Alternate Years  
Public Relations Theory and Practice (3-0)

**JB 640 3 Credits**  
Fall  
Ethics and Reporting in the Far North (3-0)  
(Same as JB 440 and NORS 640)

**JB 641 3 Credits**  
Alternate Years  
Comparative Media Systems (3-0) h

**JB 645 3 Credits**  
Fall  
Diversity and Media (3-0)

**JB 684 3 Credits**  
Spring  
Multimedia Theory and Practice (2-3) h  
(Same as JB 484)

### Justice

**JUST 110 3 Credits**  
Fall, Spring  
Introduction to Justice (3-0) s  
Survey of the structure and process of the agencies of criminal justice. Includes introduction to criminology, criminal law, and the juvenile justice system. Also available via Independent Learning.

**JUST 222 3 Credits**  
Fall  
Research Methods (3-0) s  
(Same as PS 222)  
Application of social science research methods to solving scientific and non-scientific questions arising in justice or political science. Basic methods include experimentation and survey research. (Prerequisite: JUST 110 or PS 101.)

**JUST 251 3 Credits**  
Spring  
Criminology (3-0) s  
The study of the major areas of deviant behavior and its relationship to society, law, and law enforcement, including the theories of crime causation. (Prerequisite: JUST 110.)

**JUST 258 3 Credits**  
Fall  
Juvenile Delinquency (3-0) s  
Survey of the structure and process of the juvenile justice system and the major theories of juvenile delinquency. Materials fee: $10.00. (Prerequisite: JUST 110. Next offered: 1995-96.)

**JUST 310 3 Credits**  
Alternate Spring  
Principles of Corrections (3-0) s  
An introduction to adult institutions, community-based programs, and theories of incarceration. Correctional programs are examined. (Prerequisite: JUST 110, junior standing. Next offered: 1995-96.)

**JUST 320 3 Credits**  
Fall, Spring  
Practicum  
A research-oriented exercise directed at the resolution of a specific problem within an agency of the criminal justice system. (May be repeated to a maximum of 6 credits.)

**JUST 330Q/2 3 Credits**  
Spring  
Law, Justice and Society (3-0) s  
Study of moral issues related to the proper reach, extent, and enforcement of the law. (Prerequisites: PS 101 or JUST 110.)

**JUST 335W 3 Credits**  
Spring  
Women, Crime and Justice  
(Alternate Years)  
(Same as WMS 335)  
Interaction of women with the American justice system focusing on women as victims, offenders and working professionals in justice agencies. Materials fee: $10.00. (Prerequisites: JUST 110 and junior standing.)

**JUST 340 3 Credits**  
Fall  
Rural Justice in Alaska (3-0) s  
Indian justice system including historical development of the Federal/Indian relationship, constitutional basis for federal power over Indians, relationships of tribes in Alaska to the state and federal justice agencies, the effect of urban life on native peoples, the issue of cultural conflict when imposing the western system of justice on native offenders. (Prerequisites: JUST 110 and junior standing.)

**JUST 345W 3 Credits**  
Fall  
Police Problems (3-0)  
Analysis of the nature of coercive power and the special problems faced by people who assume the responsibility of coercing others; how coercive power affects personality and how personality affects the way different types of people respond to the challenge and responsibilities of using coercive means; conditions that discourage excessive use of coercive means and encourage police officers to develop in morally and politically mature ways. Materials fee: $10.00. (Prerequisites: JUST 110 and junior standing.)

**JUST 352 3 Credits**  
Fall  
Criminal Law (3-0) s  
A study of elements, purposes, and functions of the substantive criminal law with emphasis upon historical and philosophical concepts. (Prerequisite: JUST 110.)
JUST 354  3 Credits  Spring  Procedural Law (3+0)
Emphasis upon the legal limitations of the police and the right of the people to be secure from the government under the protections of the Constitution and the Rules of Evidence. (Prerequisite: JUST 110.)

JUST 404  3 Credits  Spring  Introduction to Legal Research and Writing (3+0)
(Same as PS 404)
Methods of legal research and preparation of legal materials. Introduction to the resources of law libraries and the techniques of presenting issues in legal form. (Prerequisites: PS 101 or JUST 110. JUST/PS 301.)

JUST 452  3 Credits  Alternate Spring  Comparative Criminal Justice (3+0)
The study of crime problems, legal systems and the organization and performance of criminal justice agencies (police, courts, corrections, juvenile) in selected countries. (Prerequisites: JUST 110 and junior standing. Next offered: 1996-97.)

JUST 460C/2  3 Credits  Fall  Political Philosophy of Crime Control (3+0)
Major concepts of the structure and process of criminal justice revisited with emphasis on current issues. (Prerequisite: JUST 110 and senior standing. Restricted to Justice majors only.)

JUST 475  3-9 Credits  Fall, Spring  Internship
Supervised work experience in criminal justice agencies. (Prerequisite: Permission of director of internship program. Note: Department approval required for 9 credits.)

JUST 492  Variable Credit  Fall, Spring  Seminar
Various topics of current interest and importance to the justice major will be presented. Topics will be announced prior to each offering. (Prerequisites: JUST 110 and junior standing and permission of instructor.)

Library Science

LS 100X  1 Credit  Fall  Library and Information Strategies (1+0)
Principles of information organization and how libraries can provide access to information and scholarly resources. Emphasis on use of a library via distance delivery methods. For students who do not have direct physical access to the Rasmussen Library.

LS 101X  1 Credit  Fall, Spring  Library Information and Research (0+0)
An introductory course which presents library information-finding and research strategies and principles of information organization and retrieval. Printed, electronic and microform resources are covered. This is a lecture-based course.

LS 307  1 Credit  Spring  Information Sources for Educators (1+0)
(Same as ED 307)
A self-paced study course providing a survey of major library reference sources and computer databases for education related majors. Class meets for an introductory session and a computer literature search demonstration; otherwise, the student works at his individual rate and on his own time schedule.

LS 309  1 Credit  As Demand Warrants  Information Resources (1+0)
Information organization, scholarly communication and research reporting for a specific discipline, including major disciplinary reference sources and bibliographic databases in the disciplines. This course should be taken before or during the semester when the student prepares a term paper for an upper division course. Course may be repeated when there is a change in discipline. (Prerequisite: Junior standing in specific discipline or permission of the instructor. LS 101 recommended.)

LS 389  3 Credits  Fall  Internet and Electronic Resources (3+0)
(Same as JB 389)
Introduction to the Internet, its access techniques, its resources, and the principles and skills necessary for using electronic resources. Resources will include OPACs, on-line databases, electronic journals, and information content databases. Students will be expected to have basic skills in library research, computer literacy and/or journalism. Materials fee: $25.00. (Prerequisites: LS 100X, LS 101X or permission of instructor.)

LS 482  3 Credits  Alternate Spring  History of Circumpolular Research (3+0)
(Same as HIST 482 and NORS 682)
Studies the history of arctic and subarctic sciences through geological, biological and atmospheric sciences and the people through anthropology, ethnography, linguistics and history. Cold regions engineering and technology research in education, government and law covered. The literature and source material on these fields analyzed. (Prerequisite: HIST 110 or 115 or ANTH 242 or BIOL 104 or permission of the instructor. Next offered: 1995-96.)

Linguistics

LING 101  3 Credits  Fall, Spring  Nature of Language (3+0)
The study of language: systematic analysis of human language and description of its grammatical structure, distribution, and diversity. Also available via Independent Learning.

LING 210  3 Credits  Alternate Fall  Languages of the World (3+0)
A comprehensive survey of the world's languages past and present. Topics include genetic relationships among languages, linguistic change, language universals, language classification, and language families, as well as the interaction of culture and language. (Next offered: 1995-96.)

LING 262  3 Credits  As Demand Warrants  Methods of Teaching English as a Second Language and Standard English as a Second Dialect (3+0)
(Same as ED 262)
Covers basic underlying assumptions about the nature of language, language learning, language teaching, characteristics of good language learners, optimal language learning environments, and what affect they have on teaching styles. Roles of the second language teacher and their appropriateness covered. Presents techniques and activities consistent with specific language teaching methods and adaptation of these methods to the needs of western Alaskan classrooms. (Prerequisite: Classroom experience.)

LING 303  3 Credits  Spring  Language Acquisition (3+0)
Theories of the acquisition and development of first and second languages, including consideration of biological and sociocultural factors. Survey of traditional and contemporary models, and implications for pedagogy and public policy. (Prerequisite: LING 101.)

LING 318  3 Credits  Alternate Fall  Introduction to Phonetics and Phonology (3+0)
Scientific study of human speech sounds, mechanisms of their production, and sound systems of languages. (Prerequisite: Upper division standing or permission of instructor. Next offered: 1995-96.)

LING 320  3 Credits  Alternate Spring  Introduction to Syntactic Theory (3+0)
Study of principles and processes of sentence construction in language. (Prerequisites: LING 101 or its equivalent, at least junior standing or permission of the instructor. Next offered: 1995-96.)

LING 340  3 Credits  Every Third Spring  Aspects of Bilingualism (3+0)
Cognitive, linguistic, sociopolitical, and educational aspects of bilingualism at both the individual and societal levels, including factors contributing to language maintenance and language shift. (Prerequisite: LING 101 or permission of instructor. Next offered: 1996-97.)

LING 410  3 Credits  Alternate Fall  Theory and Methods of Second Language Teaching (3+0)
(Same as LING 610)
Theory and practice of teaching a second language, including methodological approaches, second language acquisition theory, materials, and testing. (Next offered: 1996-97.)

LING 420  3 Credits  Every Third Spring  Semantics (3+0)
A systematic exploration of the nature of meaning in human language. Focus is on historical and contemporary approaches to understanding problems of reference, categorization, and lexical relationships in meaningful contexts. (Prerequisite: LING 101 or permission of instructor. Next offered: 1997-98.)
Marine Science and Limnology

MSL 111X 4 Credits Juneau Alternate Fall
The Oceans (3+3) n Fairbanks Spring
Study of the oceans from the broad perspective offered by combining insights from biology, physics, chemistry, and geology. Topics include the evolution of the oceans and marine life, forces acting on water and the resulting currents and waves, and relationships between the physics and chemistry of water bodies and their biological productivity. Societal questions related to fisheries management, global climate change, and pollution will be discussed. Laboratory fee: $20.00. (Prerequisites: High school biology and algebra. High school chemistry or physics desirable.)

MSL 411 3 Credits Juneau As Demand Warrants
Current Topics in Oceanographic Research (3+0) Fairbanks Alternate Fall
Study of research problems from biology, chemistry, geology and physics. Topics include sea floor hydrothermal vents and their indigenous communities, manganese nodules, tsunami prediction, radionuclides in the sea, Bering Sea productivity, and the role of the ocean in global warming due to fossil fuel carbon dioxide. (Prerequisites: Four semesters of natural sciences at 100 level or above or permission of the instructor. Next offered Fairbanks: 1996-97.)

MSL 435 3 Credits Alternate Fall
Acoustical Oceanography (3+0)
Principles and applications of underwater sound in solving oceanographic problems related to chemistry, physics, geology and biology, including hydroacoustic methods, acoustic phenomena, bioacoustics and fisheries acoustics, environmental noise and signal processing. (Prerequisites: College physics and calculus. Next offered: 1995-96.)

MSL 450 5 Credits Alternate Summer
Biology and Ecology of Marine Invertebrates (3+3)
(Alternate as MSL 651)
Advanced understanding of marine invertebrates in an evolutionary and ecological context. Animals studied according to habitat phylogenetic relationships. Field and laboratory work at the Kasitsna Bay Laboratory on Kachemak Bay. Students are required to write a research proposal related to the course subject matter. (Prerequisites: Graduate standing, one year of biology and permission of instructor. Basic courses in ecology and invertebrate zoology recommended. Next offered: Summer 1996.)

MSL 460 1-3 Credits Alternate Summer
Marine Studies for Science Teachers
Field studies in oceanography and marine biology emphasizing a hands-on approach to scientific observation, data collection and analysis. Small boat and beach excursions. Students may enroll for one, two, or three weeks at 1 credit per week. Two additional credits may be earned by students concurrently enrolled in MSL 498 and completing their own investigative research project. Course offered at the Kasitsna Bay Laboratory. (Prerequisites: B.S. or B.A. degree and college-level science background or permission of instructor(s). Next offered: Summer 1997.)

MSL 610 3 Credits Spring
Marine Biology (3+0)

Mathematics

No student will be permitted to enroll in a course having prerequisites if a grade lower than C is received in the prerequisite course.

DEVELOPMENTAL MATHEMATICS

DEV M 050 3 Credits Fall, Spring
Basic College Mathematics (3+0)
Operations with whole numbers, fractions, decimals, percents and ratios, signed numbers, evaluation of algebraic expressions and evaluation of simple formulas. Metric measurement system and geometric figures. Also available via Independent Learning.
Basic college mathematics: operations with percents, decimals, fractions and signed numbers, translating word problems, introduction to algebra and geometry, using alternative teaching styles tailored to the specific cultural backgrounds of the students. (Prerequisites: Appropriate placement test scores. Students must meet federal eligibility requirements.)

**DEVM 052** 2 Credits Fall, Spring
Alternative Approaches to Math: Basic College Math (2-0)
(Same as CCC 052)

First year high school algebra. Evaluating and simplifying algebraic expressions, solving first degree equations and inequalities, integer exponents, polynomials, factoring, rational expressions, equations and graphs of lines. Also available via Independent Learning. (Prerequisite: DEVM 050 or placement.)

**DEVM 060** 3 Credits Fall, Spring
Elementary Algebra (3-0)

College algebra. Algebraic equations, first-degree equations, inequalities, integer exponents, polynomials, factoring, integral exponents and rational expressions using alternative teaching styles tailored to the specific cultural backgrounds of the students. (Prerequisites: DEVM 050 or appropriate placement test scores. Students must meet federal eligibility requirements.)

**DEVM 061** 1 Credit Independent Learning Only
Review of Elementary Algebra

Designed to assist students in reviewing material covered by DEVM 060. Individuals who have not previously taken an elementary algebra course are recommended to enroll in DEVM 060.

**DEVM 062** 3 Credits Fall, Spring
Alternative Approaches to Math: Elementary Algebra (3-0)
(Same as CCC 062)

Elementary algebra. Algebraic equations, first-degree equations, inequalities, integer exponents, polynomials, factoring, integral exponents and rational expressions using alternative teaching styles tailored to the specific cultural backgrounds of the students. (Prerequisites: DEVM 050 or appropriate placement test scores. Students must meet federal eligibility requirements.)

**DEVM 065** 1-3 Credits Fall, Spring
Mathematics Lab (0-3-0)

Designed to assist students in reviewing and reinforcing course concepts covered by DEVM 050, 060 and 070. Consists of instruction which may include lab instruction, individual student work or group work. Recommended for students who need more time and help to master the material in Developmental Math courses. (Prerequisite: Placement.)

**DEVM 070** 3 Credits Fall, Spring
Intermediate Algebra (3-0)

Second year high school algebra. Operations with rational expressions, radicals, rational exponents, logarithms, inequalities, quadratic equations, linear systems, functions, Cartesian coordinate system and graphing. Also available via Independent Learning. (Prerequisite: DEVM 060 or placement.)

**DEVM 071** 1 Credit Independent Learning Only
Review of Intermediate Algebra

Course reviews material covered by DEVM 070. Individuals who have not taken an intermediate algebra course on the high-school level are recommended to enroll in DEVM 070.

**DEVM 072** 3 Credits Fall, Spring
Alternative Approaches to Math: Intermediate Algebra (3-0)
(Same as CCC 072)

Intermediate algebra. Exponents, radicals, graphing, systems of equations, quadratic equations, inequalities and complex numbers using alternative teaching styles tailored to specific cultural backgrounds of the students. (Prerequisites: DEVM 060 or appropriate placement test scores. Students must meet federal eligibility requirements.)

**DEVM 081** 1 Credit Independent Learning Only
Review of Basic Geometry

High school geometry without formal proofs. Topics include basic definitions, measurement, parallel lines, triangles, polygons, circles, area, solid figures and volume. (Prerequisite: DEVM 060.)

**DEVM 082** 1 Credit Fall, Spring
Hands-On Geometry (1-0)

Basic concepts and uses of geometry. Emphasis on 'hands-on' and applied problems. (Prerequisite: A solid knowledge of arithmetic -- no algebra required.)

**MATHMATICS**

**MATH 107** 3 Credits Fall, Spring
Functions for Calculus (3-0)

A study of algebraic, logarithmic, and exponential functions, together with selected topics from algebra. Note: No credit may be earned for more than one of MATH 107 or 161. Also available via Independent Learning. (Prerequisites: Two years of high school algebra and MATH 107 placement or higher.)
MATH 305 3 Credits As Demand Warrants
Geometry (3+0)
Topics selected from such fields as Euclidean and non-Euclidean plane geometry, affine geometry, projective geometry, and topology. (Prerequisite: MATH 202 or permission of instructor.)

MATH 306 3 Credits Alternate Spring
Introduction to the History and Philosophy of Mathematics (3+0)
Includes a detailed study of certain important periods of history as examined by such thinkers as Plato, B. Russell, D. Hilbert, L.E.J. Brouwer and K. Godele. For students of mathematics, science, history and philosophy. (Prerequisite: MATH 202 or permission of instructor. Next offered: 1996-97.)

MATH 307 3 Credits Fall
Discrete Mathematics (3+0)
Logic, counting, sets and functions, recurrence relations graphs and trees. Additional topics chosen from probability theory. (Prerequisite: MATH 201 or permission of instructor.)

MATH 308 3 Credits Spring
Abstract Algebra (3+0)
Theory of groups, rings and fields. (Prerequisite: MATH 215 or permission of instructor. Recommended: MATH 307 and/or MATH 314.)

MATH 310 3 Credits Fall
Numerical Analysis (3+0)
Direct and iterative solutions of systems of equations, interpolation, numerical differentiation and integration, numerical solutions of ordinary differential equations, and error analysis. (Prerequisite: MATH 310 or permission of instructor. A knowledge of FORTRAN or BASIC is desirable. Also a knowledge of differential equations is desirable.)

MATH 314 3 Credits Fall, Spring
Linear Algebra (3+0)
Linear equations, finite dimensional vector spaces, matrices, determinants, linear transformations, and characteristic values. Inner product spaces. (Prerequisite: MATH 201.)

MATH 371 3 Credits As Demand Warrants
Probability (3+0)
Probability spaces, conditional probability, random variables, continuous and discrete distributions, expectation, moments, moment generating functions, and characteristic functions. Materials fee: $5.00. (Prerequisite: MATH 202.)

MATH 401W 3 Credits Fall
Advanced Calculus (3+0)
A rigorous treatment of one and several dimensional calculus. Includes mappings from n-space and their continuity, differentiability and integrability properties as well as sequences and series. Materials fee: $10.00. (Prerequisites: MATH 215 and 202 for MATH 401; MATH 401 for MATH 402.)

MATH 404W,0 3 Credits
As Demand Warrants
Topology (3+0)
Introduction to topology, set theory, open sets, compactness, connectedness, product spaces, metric spaces and continua. (Prerequisites: MATH 202 and 215. Recommended: MATH 314 and/or 308.)

MATH 408 3 Credits As Demand Warrants
Mathematical Statistics (3+0)
Distribution of random variables and functions of random variables, interval estimation, point estimation, sufficient statistics, order statistics, and test of hypotheses including various criteria for tests. Materials fee: $5.00. (Prerequisites: MATH 371 and STAT 200.)

MATH 412 3 Credits Alternate Spring
Differential Geometry (3+0)
Introduction to the differential geometry of curves, surfaces, and Riemannian manifolds. Basic concepts covered include the Frenet-Serret apparatus, surfaces, first and second fundamental forms, geodesics, Gaussian curvature and the Gauss-Bonnet Theorem. Time permitting topics such as minimal surfaces, theory of hypersurfaces and/or tensor analysis may be included. (Prerequisites: MATH 314, Corequisite: MATH 402 or permission of instructor. Next offered: 1996-97.)

MATH 421 4 Credits Fall
Applied Analysis I (4+0)
Vector calculus, including gradient, divergence, and curl in orthogonal curvilinear coordinates, ordinary and partial differential equations and boundary value problems, and Fourier series and integrals. Materials fee: $10.00. (Prerequisite: MATH 302.)

MATH 422 4 Credits Spring
Applied Analysis II (4+0)
Topics in multi-variate calculus, including boundary value problems and partial differential equations of mathematical physics complex functions, including series, integrals, residues, conformal mapping, and potential theory. Materials fee: $10.00. (Prerequisite: MATH 421.)

MATH 423 3 Credits As Demand Warrants
Applied Mathematics (3+0)
Topics to be determined at the time of registration to fit the needs of the students. (Prerequisite: Senior standing or permission of instructor.)

MATH 460 3 Credits Fall
Mathematical Modeling (3+0)
Analysis, construction, and interpretation of mathematical models. Applications to the physical, biological, and social sciences. Topics selected from combinatorics, probability, statistics, perturbation, numerical analysis, and differential equations. Students develop a modeling project. Materials fee: $10.00. (Prerequisite: MATH 201. Recommended: One or more of MATH 302, 314, STAT 300, 401; and some programming experience.)

MATH 490 1 Credit Fall
Senior Seminar (1+0)
Advanced topics selected from areas outside the usual undergraduate offerings. A substantial level of mathematical maturity is assumed. (Prerequisites: At least one of MATH 308 or 401.)

MATH 600 1 Credit Fall, Spring
Teaching Seminar (1+0)

MATH 608 3 Credits As Demand Warrants
Partial Differential Equations (3+0)

MATH 611 3 Credits Alternate Fall
Mathematical Physics (3+0)
(Same as PHYS 611, 612)

MATH 615 3 Credits Alternate Spring
Applied Numerical Analysis (3+0)

MATH 621 3 Credits Alternate Fall
Advanced Applied Analysis (3+0)

MATH 622 3 Credits Alternate Spring
Topics in Applied Analysis (3+0)

MATH 630 3 Credits As Demand Warrants
Advanced Linear Algebra (3+0)

MATH 631 4 Credits Fall
Theory of Modern Algebra I (4+0)

MATH 632 3 Credits As Demand Warrants
Theory of Modern Algebra II (3+0)

MATH 641 4 Credits Real Analysis I (4+0)

MATH 642 3 Credits As Demand Warrants
Real Analysis II (3+0)

MATH 645 4 Credits Spring
Complex Analysis (4+0)

MATH 651 4 Credits Alternate Spring
Topology (4+0)

MATH 655 3 Credits As Demand Warrants
Algebraic Topology (3+0)

MATH 660 3 Credits Alternate Spring
Advanced Mathematical Modeling (3+0)

MATH 661 3 Credits As Demand Warrants
Optimization (3+0)
(Same as CS 661)

MATH 663 3 Credits Alternate Spring
Applied Combinatorics and Graph Theory (3+0)

Mechanical Engineering

A $25.00 per semester student computing facility user fee is assessed for School of Engineering courses. This fee is in addition to any material/laboratory fees.

ME 150 1 Credit Fall
Aerodynamics for Pilots (1+1)
Nature of the atmosphere, elementary airfoil theory, drag and power requirements, performance computations, and introduction to stability. For those with minimum mathematical background who desire a basic understanding of flight. (Prerequisites: High school algebra and general science.)
ME 321 3 Credits Fall
Industrial Processes (2+3)
Manufacturing processes used in modern industry. Primary and secondary manufacturing processes, casting, hot and cold forming, machining, welding, and mass production tools and techniques as related to economic and efficient product design. Laboratory fee: $35.00.

ME 334 3 Credits Fall
Elements of Material Science/Engineering (2+3)
(= Same as ES 334)
Properties of engineering materials. Crystal structure, defect structure, structure and properties, aspects of metal processing, heat treatment, joining, testing, and failure analysis for engineering applications and design. Laboratory fee: $15.00. (Prerequisites: CHEM 106 and PHYS 212.)

ME 403 4 Credits Spring
Mechanical Design II (3+2)
Design and analysis of machines by analytical, experimental and computer methods. Identification of requirements and conceptual design of mechanical systems, detailed design of components, strength, life, reliability, and cost analysis. Laboratory fee: $15.00. (Prerequisites: ME 302 and ES 331.)

ME 404 3 Credits Spring
Stress Analysis (3+0)
Analysis of the strength, stability and rigidity of machine components by analytical and computer methods. (Prerequisites: ES 331, MATH 302, ES 201.)

ME 408 3 Credits Fall
Dynamics of Systems (2+2)
Response of mechanical systems to internal and external forces. Free and forced vibration, random vibration. Discrete and continuous systems. Vibration parameter measurements and stability criteria. Laboratory fee: $15.00. (Prerequisites: ME 201, 301.)

ME 409 3 Credits Spring
Controls (2+2)
Analysis and design of control systems. Block diagrams, transfer functions, and frequency analysis. Closed loop systems and system stability. Industrial controllers and system compensation. Laboratory fee: $15.00. (Prerequisites: ES 201, 301. Corequisite: ME 408.)

ME 414 3 Credits Fall
Thermal Systems Design (3+0)
Introduction to the design of power and space conditioning systems, energy conversion, heating, ventilating, air conditioning, total energy systems, and introduction to thermal system simulation and optimization. (Prerequisite: ES 452.)

ME 415W 2 Credits Fall
Thermal Systems Laboratory (1+3)
Testing and evaluation of components and energy systems such as pumps, fans, engines, heat exchangers, refrigerators, and heating/cooling plants. Laboratory fee: $15.00. (Prerequisites: ES 341, ME 313, ME 441.)

ME 416 3 Credits Fall
Design of Mechanical Equipment for the Petroleum Industry (3+0)
Design, selection, and operation of equipment used in production and processing of crude oil and gas. Instrumentation and control systems used with mechanical equipment. (Prerequisites: ES 341, 346.)

ME 441 3 Credits Spring
Heat and Mass Transfer (3+4)
Fundamental concepts of heat and mass transfer including steady state and transient conduction, laminar and turbulent free and forced convection, evaporation, condensation, ice and frost formation, black body and real surface radiation, and heat exchangers. (Prerequisite: ES 346.)

ME 450 3 Credits Spring
Theory of Flight (3+0)

ME 451 3 Credits Spring
Aerodynamics (3+0)
Aerodynamics of non-lifting and lifting airfoils in incompressible rotational flow, wings of finite span, the Navier-Stokes equations, boundary layers, numerical methods, supersonic and transonic flow past airfoils, rocket aerodynamics, rocket drag. (Prerequisites: ES 341, ES 346, ME 313. Next offered: 1996-97.)
Mechanics-Diesel/Heavy Equipment

MECN 101  7 Credits  Spring
Heavy Equipment I
Introduction to suspension systems, wheel bearings, brakes, air systems, clutches, transmissions (auto. and mech.), drive shafts, and differentials. Topics include disassembly, inspection, and assembly of components, use of tools and instruments, use of fixtures, and shop safety. Materials fee: $100.00.

MECN 102  7 Credits  Spring
Heavy Equipment II
Introduction to electrical and hydraulic systems, and crawler tractor undercarriage.

MECN 112  1 Credit  As Demand Warrants
Basic Auto Maintenance (1+0)
Covers basic automobile system functions, owner maintenance of electrical, cooling, and fuel systems, auto lubricants and fluids, tires and wheels, tune-ups, and cold weather maintenance and operation. For the person without mechanical experience. Materials fee: $10.00.

Military Science

MILS 100  1 Credit  Fall, Spring
Outdoor Skills Laboratory (0+2)
Fundamentals of orienteering, marksmanship, arctic survival, skiing, and snowshoeing. Emphasis on practical work. The same skills are taught both semesters.

MILS 111  2 Credits  Fall
U.S. Army and Society I (2+0)

MILS 112  2 Credits  Spring
U.S. Army and Society II (2+0)
Survey of human behavior and leadership in the army and military environment. Role of the soldier, military training, discipline, ethics, and professionalism presented. Introduction to behavioral dimensions and management techniques used by successful officer-leaders.

MILS 113  2 Credits  Spring
Map Reading and Orienteering (2+0)
Introduction to military and civilian topographical maps and their related informational content. Use of the lensatic compass and map as navigational instruments. Exercises in orienteering complement academic instruction.

MILS 201  2 Credits  Fall
U.S. Defense and World Affairs (2+0)
Effect of current world events on the military leader and defense structure. Relationship of historical and political events to the decision-making processes. Sociopolitical influence on military thought of the effect of geography on the economic base of a nation. Current military strengths and weaknesses of power groups.

MILS 202  Credits  Spring
Communications Arts for the Military Leader (2+0)

MILS 250  3 Credits  Summer
Basic Camp
A six-week camp in basic military skills and leadership experience in preparation for entrance into the advanced course. For students who did not take the basic course. (Prerequisite: At least two years of schooling remaining upon completion of camp. Admission by arrangement with professor of military science.)

MILS 300  1 Credit  Fall, Spring
Outdoor Skills Laboratory (0+2)
Advanced training in orienteering, marksmanship, arctic survival, skiing and snowshoeing. Students assist in instruction and in organizing and managing the lab. May be repeated for a maximum of two credits at each level. (Prerequisite: Junior or senior standing in military science.)

MILS 301  3 Credits  Spring
Military Science
Introduction to leadership and decision-making processes. Emphasis on the nature of American society, leadership, and management principles. Role of the military in shaping the nature of American society while reflecting the character of the society it serves. Also available via Independent Learning. (Prerequisite: Sophomore standing or permission of instructor.)

MILS 350  3 Credits  Spring
Advanced Leadership (3+1)
(Same as BA 303)
An interdisciplinary approach to the study of leadership in the contemporary environment. Analysis of individual skills, emphasizing a behavioral approach to effective decision making. For ROTC cadets, class and laboratory includes preparation for MILS 350. (Prerequisite: Junior standing in MILS or permission of instructor.)

MILS 356  3 Credits  Fall
Advanced Camp
Six-week camp structured as a leadership workshop allowing students to utilize leadership skills in a variety of situations in a military environment. (Prerequisites: Must be enrolled as an advanced course cadet and have completed MILS III.)

MILS 360  3 Credits  Fall
Seminar on Tactical Operations (3+1)
A study of tactical operations from the time of Hannibal to the present. Introduces a variety of historical examples where application or violation of sound tactical principles, or various styles and types of leadership, have produced success or failure. (Prerequisite: Senior standing in MILS or permission of instructor.)

MILS 364  3 Credits  Spring
History of the American Military (3+0)
(Same as HIST 442)
The military's place in American life and society from the Colonial era to the present. Role of the military institution in shaping the nature of American society while reflecting the character of the society it serves. Also available via Independent Learning. (Prerequisite: Sophomore standing or permission of instructor.)

Mineral Preparation Engineering

MPR 601  3 Credits  Fall
Froth Flotation (2+3)

MPR 606  3 Credits  Alternate Fall
Plant Design (2+3)

MPR 611  3 Credits  Alternate Fall
Hydrometallurgy (3+0)

MPR 612  3 Credits  Alternate Fall
Solution Concentration and Purification (3+0)

MPR 684  3 Credits  Spring
Mineral Preparation Research (1+0)

MPR 688  1 Credit  Fall
Graduate Seminar I (1+0)
(Same as MIN 688)

Mining Engineering

MIN 101  3 Credits  Fall
Minerals, Man and the Environment (3+0)
A general survey of the impact of the mineral industries on man's economic, political, and environmental systems. Course fee: $20.00.
### COURSE DESCRIPTIONS

**MIN 102** 1 Credit  
Introduction to Minerals Industry (1+0)  
Spring  
Fundamentals of the mineral industry.

**MIN 104** 1 Credit  
Mining Safety and Operations Laboratory (0+3)  
Fall  
Practical training at the Silver Fox Mine in mining operations and safety. Course complies with Mine Safety and Health Administration (MSHA) 40 Hour New Miner Training. Course fee: $50.00.

**MIN 202** 3 Credits  
Mine Surveying (2+3)  
Spring  
Surveying principles for surface and underground control of mining properties. Field and office procedures for preparation of maps and engineering data. (Prerequisites: MATH 107, 108.)

**MIN 301** 3 Credits  
Spring  
Plant Design (3+0)  
Quantitative study and design of various systems and equipment used in haulage, hoisting, drainage, pumping and power (compressed air and electricity). Importance of the natural conditions and production level in the equipment selection procedure emphasized. (Prerequisites: ES 208, 307, 341.)

**MIN 302** 3 Credits  
Spring  
Underground Mine Environmental Engineering (2+3)  
Analysis of underground mine ventilation systems, ventilation planning, design and engineering control, mine ventilation network. (Prerequisite: MIN 103.)

**MIN 304** 3 Credits  
Alternate Fall  
Introduction to Metallurgy (3+0)  
Overview of the extractive metallurgy of gold, silver, and platinum group metals; from gravity concentration to cyanidation and smelting. (Prerequisites: CHEM 211, PHYS 212. Next offered: 1995-96.)

**MIN 313** 3 Credits  
Alternate Fall  
Introduction to Mineral Preparation (2+3)  
Elementary theory and principles of unit processes of liberation, concentration, and solid-fluid separation as applied to mineral benefications. Materials fee: $20.00. (Prerequisite: Junior standing or permission of the instructor. Next offered: 1995-96.)

**MIN 314** 3 Credits  
Alternate Spring  
Unit Preparation Processes (1+4)  
Liberation and concentration by gravity, electro-magnetic, and electrostatic methods. Economic analysis and flowsheets for different ores developed. (Prerequisite: MIN 313. Next offered: 1995-96.)

**MIN 370** 3 Credits  
Spring  
Rock Mechanics (2+3)  
Physical and mechanical properties of rock; rock mass classification systems; stress distribution in the vicinity of mining openings, design criteria and support for structures in rock mass, instrumentation and monitoring of opening's stability as well as strata control and surface subsidence. (Prerequisites: ES 331 and STAT 451 or equivalent.)

**MIN 400** 1 Credit  
As Demand Warrants  
Practical Engineering Report  
Twelve weeks of practical work in some industry or project related to the student's option, or equivalent. To be taken during one or more of the summer vacations prior to the fourth year.

**MIN 407W** 3 Credits  
Fall  
Mine Reclamation and Environmental Management (3+0)  
Principles and practices of mine reclamation and waste disposal Pre-mining assessments and plans. Design of settling and tailings ponds and waste impoundments. Streambed restoration and revegetation. Course fee: $20.00. (Prerequisite: ES 341.)

**MIN 408O** 3 Credits  
Spring  
Mineral Valuation and Economics (3+0)  
Introduction to engineering economics, ore sampling and reserve calculations, and mine feasibility studies. (Prerequisites: GEOS 332, GE 372 or MIN 301.)

**MIN 409** 3 Credits  
Spring  
Operations Research and Computer Applications in Mineral Industry (3+0)  
Use of operations research and computer techniques for understanding, analysis, forecasting and optimization of mining operations and systems. (Prerequisites: MIN 301 or concurrent registration, ES 201, and STAT 301 or 451.)

**MIN 415** 3 Credits  
Alternate Fall  
Coal Preparation (2+3)  
Unit operations, flowsheets, washability characteristics, and control by sink-float methods for coal preparation plants. Market requirements and economics of preparation. (Prerequisite: MIN 313. Next offered: 1996-97.)

**MIN 418** 3 Credits  
Spring  
Emission Spectroscopy, X-Ray Spectroscopy, and Atomic Absorption (2+3)  
Can be taken for any combination of parts A, B, C as demand warrants. (Admission by special arrangement.)

**MIN 418A** - Theory and application of emission spectroscopy: two one-hour classes and one three-hour lab per week for five weeks. One credit.

**MIN 418B** - Theory and application of x-ray spectroscopy and diffractometer: two one-hour classes and one three-hour lab per week for five weeks. One credit.

**MIN 418C** - Theory and application of atomic absorption spectrophotometry: two one-hour classes and one three-hour lab per week for five weeks. One credit.

**MIN 433** 3 Credits  
Alternate Fall  
Mining Access, Safety and Environmental Law  
History of mining law, Laws and regulations governing access to property, safety and environmental control as they pertain to mining. (Next offered: 1995-96.)

**MIN 443** 3 Credits  
Fall  
Rock Fragmentation (3+0)  
Selection and design of modern mining rock breaking and disintegrating techniques. In particular, cutting, drilling, blasting, water jets and other methods are covered. (Prerequisite: MIN 370.)

**MIN 445** 3 Credits  
Alternate Spring  
Design of Surface Mines for Conventional and Arctic Conditions (3+0)  
Surface mining methods. Principles and reclamation techniques, design of surface mine infrastructure. (Prerequisite: MIN 443 or concurrent registration.)

**MIN 446** 3 Credits  
Alternate Spring  
Underground Mining Methods and Their Design (3+0)  
Design of main development openings; mining methods such as room and pillar, open stoping, supported stopes and caving systems; selection of mining method and mine planning processes covered. (Prerequisites: MIN 301, 302, and 370.)

**MIN 447** 3 Credits  
Alternate Spring  
Placer Mining (3+0)  
Placer formation and identification, reserve estimation, mine and wash plant design. Includes surface and underground mining methods, equipment specification, environmental compliance and reclamation. Course fee: $20.00. (Prerequisites: MIN 301 and MIN 313. Next offered: 1995-96.)

**MIN 448** 3 Credits  
Alternate Spring  
Open Pit Mining (3+0)  
Modern methods of open pit design and operation. Pit optimization techniques, haul road design, pit operations planning and production scheduling, slope stability, land reclamation. Use of mine design software and optimization. (Prerequisites: MIN 409, MIN 445, or permission of instructor. Next offered: 1995-96.)

**MIN 472** 3 Credits  
Alternate Spring  
Hoist Control (3+0)  
Stability and design for ground control of surface and underground mining excavations; reinforcement and monitoring systems for openings constructed in rock mass. Construction in swelling rock and frozen ground, underground hazards (bursts and water inflow), monitoring of deformation and stresses associated with the opening's presence. (Prerequisites: MIN 370, 443. Next offered: 1995-96.)

**MIN 490W** 3 Credits  
Spring  
Mining Design Project (1+6)  
Design of mine layout including extraction and beneficiation and economic evaluation of a mining project. A comprehensive written report of the design and analysis is required. (Prerequisites: MIN 408, 445, 446, and 447; MIN 408 can be taken concurrently.)

**MIN 621** 3 Credits  
Fall  
Advanced Mineral Economics (3+0)  

**MIN 631** 4 Credits  
Alternate Fall  
Research Methods in Mineral Engineering (3+3)  

**MIN 635** 3 Credits  
Spring  
Geostatistical Ore Reserve Estimation (2+3)  
(Same as GE 635)

**MIN 637** 3 Credits  
Alternate Fall  
Mine Systems Simulation (2+3)

**MIN 646** 3 Credits  
Alternate Spring  
Mining Engineering in the Arctic (3+4)

**MIN 647** 2 Credits  
Alternate Fall  
Advanced Underground Mine Design (1+3)
Museum Studies

**MSM 211 3 Credits Alternate Fall**
Fundamentals of Museum Studies I (3+0)
Origin, structure and development of museums; types of museums and their functions, professional directions and ethics. Collection management systems and techniques, role and ethics of museum conservation. (Prerequisite: Sophomore standing or permission of the instructor. Next offered: 1995-96.)

**MSM 212 3 Credits Alternate Spring**
Fundamentals of Museum Studies II (3+0)
Museum education, including educational goals and objectives, the museum visitor, program development and publicity. A comprehensive survey of exhibits theory and practices, museum management, administrative frameworks, legal considerations, and financial management. (Prerequisite: MSM 211. Next offered: 1995-96.)

**MSM 311 3 Credits Alternate Fall**
Museum Administration (3+0)
Administrative philosophy and procedures in public and private, large and small museums; the types and sources of support and interactions with local and national supportive groups. (Prerequisites: MSM 211 and 212 or permission of the instructor. Next offered: 1995-96.)

**MSM 312 3 Credits Alternate Spring**
Museum Collection Management (3+0)
Basic curatorial techniques and problems. Field collecting and other forms of acquisition through accessioning, cataloging, preparation, exhibit, teaching, and research. (Prerequisites: MSM 211 and 212 or permission of the instructor. Next offered: 1995-96.)

**MSM 487 3 Credits As Demand Warrants**
Museum Practice
Supervised participation in one or more phases of museum operations or disciplines. (Prerequisites: MSM 211 and 212 and permission of the instructor.)

**MSM 488 3 Credits As Demand Warrants**
Individual Research: Field Collecting Museum Specimens
Philosophies, purposes and goals of field collection, procedures for collecting museum specimens, and methods of handling before they reach the museum. Field trips may be required. By arrangement with the appropriate curator(s), may be repeated for credit with permission of instructor. (Prerequisites: MSM 211 and 212 and prior disciplinary preparation or permission of the instructor.)

Music

**APPLIED MUSIC**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Type</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS 161, 162</td>
<td>2 or 4</td>
<td>Private Lessons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS 261, 262</td>
<td>2 or 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS 361, 362</td>
<td>2 or 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS 461, 462</td>
<td>2 or 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS 490</td>
<td>0</td>
<td>Recital Attendance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS 581</td>
<td>0</td>
<td>Junior Recital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS 490</td>
<td>0</td>
<td>Senior Recital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MUS 661</td>
<td>2 or 4</td>
<td>Advanced Private Lessons</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Private instruction in piano, organ, voice, orchestral and band instruments, or guitar. Private instruction shall consist of one private lesson and one master class per week. Music performance majors may enroll for four credits. All others will normally enroll for two credits. See accompanying box for private lesson fees. (Prerequisite: Admission by audition. Course may not be audited. Credit-No Credit grading not permitted.)
MUS 103 3 Credits Fall, Spring
Music Fundamentals (3+0) h
An introductory study of the language of music. Includes basic notation, melodic and rhythmic writing, scales, bass and treble clefs, and basic harmony. Also available via Independent Learning.

MUS 123 3 Credits Spring
Appreciation of Music (3+0) h
A guide to the richer enjoyment of classical music through a study of the main periods, styles, and composers from the time of the Gregorian chant to the present.

MUS 124 3 Credits Fall
Music in World Cultures (3+0) h
A survey of traditional and folk music around the world, with an emphasis on Oriental and African music. Examines different uses of music in various societies, and includes demonstration of ethnic musical instruments.

MUS 317 1 Credit Fall, Spring
Arctic Chamber Orchestra (0+3) h
Chamber Music. (Admission by audition.)

MUS 319 1 Credit Fall, Spring
UAF Chamber Singers (0+3) h
The UAF Chamber Singers is an auditioned vocal ensemble of no more than 24 singers, male and female. The music learned and performed will be primarily, but not limited to, a cappella pieces with an emphasis on pre-classical and 20th century music. The group will perform alone and with other UAF music groups. (Prerequisites: Admission and permission of instructor.)

MUS 606 1-2 Credits As Demand Warrants
Advanced Chamber Music (0-3)-(1-3)

MUSIC THEORY, MUSIC HISTORY AND MUSIC EDUCATION

MUS 233 1 Credit Fall
Advanced Ear Training (0+2)
Continued training in sight singing and melodic dictation skills begun in MUS 133 and 134. Harmonic dictation and error detection skills also included. (Prerequisites: Concurrent enrollment in MUS 231 for 233 and 232 for 234 required unless exempted by music theory placement test.)

MUS 309 3 Credits Fall
Elementary School Music Methods (3+0)
(Also as ED 309)
Principles, procedures, and materials for teaching music to children at the elementary level.

MUS 315 2 Credits Fall, Spring
Music Methods and Techniques (1+2)
Instruction in voice and the basic instruments of band and orchestra. Emphasis on teaching methods. Course may be repeated for credit. See Music Department Handbook. Materials fee: $75.00 for brass section only. (Prerequisite: Permission of instructor.)

MUS 319 1 Credit Fall, Spring
UAF Chamber Singers (0+3)
An auditioned vocal ensemble of no more than 24 male and female singers. The music learned and performed will be primarily, but not limited to, a cappella pieces with general basis on pre-classical and 20th century music. The group will perform alone and with other UAF music groups. (Prerequisites: Admission and permission of instructor.)

MUS 331 3 Credits Alternate Spring
Form and Analysis (3+0) h
Formal and stylistic musical elements in historical context with special application to problems of proper stylistic performance. (Prerequisite: MUS 232 or permission of instructor. Next offered: 1995-96.)

MUS 351O 3 Credits Alternate Fall
Introduction to Computer-based Music Technology (1+3) h
An introduction to personal computer-based software and music synthesis hardware to enable the student to print music scores and/or develop MIDI format sequence files. May be repeated for credit. (Prerequisites: MUS 232 or equivalent permission of instructor. MUS 452 recommended. Next offered: 1995-96.)

MUS 405W 3 Credits Spring
Secondary School Music Methods (2+3)
Principles and methods of teaching music in junior and senior high school with emphasis on philosophies, management, objectives, teaching techniques, choral, and instrumental programs. Includes use of teaching plans in classroom and rehearsal settings. (Prerequisite: Permission of instructor. Should be taken prior to ED 453.)

MUS 410 3 Credits Alternate Fall
Women in Music History (3+0) h
(Same as WMS 410)
Lives and works of female musicians, composers, and performers will be traced from the earliest days of the ancient and mythological through the medieval, Baroque Classical, and Romantic periods with special emphasis on composers of the 20th century. (Prerequisite: Junior standing or permission of instructor. Next offered: 1995-96.)

MUS 421W 3 Credits Alternate Fall
Music before 1620 (3+0) h
Music from its origins in Greek antiquity through the Middle Ages and the Renaissance up to and including the emergence of opera at the turn of the seventeenth century. Includes study of prominent composers, early musical forms, original sources in translation, development of musical notation, and development of early musical instruments. (Prerequisites: MUS 221 and 222 or permission of instructor. Next offered: 1995-96.)

MUS 422W 3 Credits Alternate Spring
Music in the Seventeenth and Eighteenth Centuries (3+0) h
Style and performance practices of opera, oratorio, cantata, sonata, and concerto, as well as chamber music. Development of keyboard instruments as well as other instrumental genres: strings, winds, and brasses. Style study of representative works from early Baroque composers through Bach, Handel, Bach's sons, Haydn, Mozart, Beethoven, and others. Musical developments in Italy, England, France, Germany, Austria, and cross-cultural influences. (Prerequisites: MUS 221 and 222 or permission of instructor. Next offered: 1995-96.)
Natural Resources Management

NRM 101 3 Credits Fall Natural Resources Conservation and Policy (3+0)
Concepts, management practices and issues/concerns associated with the conservation of natural resources; natural and social science aspects of resource conservation and policy; resource communities and the land management opportunities for developing a personal philosophy related to natural resources. Majors in all fields welcome. (Prerequisite: Placement in ENGL 111.)

NRM 102 1-2 credits Fall, Spring Practicum in Natural Resources Management
Practical experience in natural resources management. Supervised individual study on a farm, in a greenhouse, managed forest, agency or business, or another approved location. (Prerequisites: Natural Resource Management majors only and permission of instructor.)

NRM 122 3 credits Spring Food Facts, Fads and Consumer Choices (3+0)
Consideration of the food supply and its safety, available alternatives in the marketplace and applied basic nutrition as it relates to food choices and health.

NRM 204 3 Credits Spring Natural Resources Legislation and Policy (3+0)
Background on selected federal land management legislation and agency policies affecting resources conservation, development, and preservation.

NRM 211 3 Credits Fall Introduction to Applied Plant Science (2+3)
Basic principles and requirements for plant growth and development with special attention to the production and management of field and greenhouse grown crops. (Prerequisite: A basic course in the subject area.)

NRM 215 3 Credits Alternate Fall Plant Propagation (2+3)
Principles and practices of plant propagation useful in horticulture, botany, forestry, agronomy, revegetation projects and plant research. Emphasis on both macro- and micropropagation (tissue culture) of Alaska native plants by seeds, spores and vegetative propagules such as cuttings. (Prerequisite: NRM 211 or permission of instructor. Next offered: 1996-97.)

NRM 251 4 credits Spring Silvics and Dendrology (3+3)
Addresses ecological requirements and characteristics of tree species of the Northern Forest and western North American forest; silvical characteristics including range, climate, soils, shade tolerance, growth, and principal enemies. Family and species characteristics for identification on sight or with a key. Field trips required. Laboratory fee: $20.00. (Prerequisites: BIOL 105, 106 and 271 or permission of instructor.)

NRM 277 3 Credits Alternate Spring (Same as BIOL 277) Introduction to Conservation Biology (3+4)
Introduction to the basic ecological, genetic, management, legal, and historical developments in conservation biology and focused efforts to manage biological diversity resources, with a stress review of important habitats and endangered species. (Prerequisites: BIOL 105, 106. Next offered: 1995-96.)

NRM 290 1 Credit Spring Resource Management Issues at High Latitudes (0+3)
Broad perspective of high latitude resource management issues. On-site analyses of resource management needs, opportunities, and/or conflicts in the industries of: agriculture, forestry, mining, seafood, petroleum, recreation, and tourism. Includes 10 day field trip. May be repeated for credit with instructor's permission. (Prerequisites: Permission of instructor. Graded pass/fail.)

NRM 300 1-6 Credits Fall, Spring, Summer Internship in Natural Resources Management
Supervised pre-professional experience in a business or agency (public or private). Open to students majoring or minoring in natural resources management only. Course may be repeated for credit up to a maximum of 6 credits. (Prerequisites: NRM 101, junior standing, 3.0 gpa, permission of instructor, and an approved internship plan.)

NRM 303 3 Credits Spring Environmental Ethics and Actions (3+0)
Exploration of the history of modern Western views of the relationship between people and nature, alternative foundations for an environmental ethic (utilitarian, spiritual activity, rights-based, and respect-based ethics) and practices of such ethics in business, profession, and general life-style today. (Prerequisite: At least junior standing or permission of instructor.)

NRM 304O 3 Credits Fall Perspectives in Natural Resources Management (3+0)
Analysis of philosophical/ethical, economic, scientific, and political foundations of diverse natural resource management perspectives. (Prerequisites: NRM 101, COMM 131X or 141X, junior standing or permission of instructor.)

NRM 305 3 Credits Alternate Fall Nutrition for Children, Adolescents and Adults (3+3)
Application of basic nutrition principles to health and well-being of children, adolescents and adults including nutritional and related health problems found among Alaskans. (Prerequisite: BIOL 105 or CHEM 105 or equivalent, or permission of instructor. Next offered: 1995-96.)

NRM 310O 3 Credits Fall Agricultural Concepts (3+0)
Food and fiber origins are traced through world production techniques and use patterns to show how components of the agricultural industry (government, multinational corporations and consumers) are affected by and can affect policy, production, marketing and end-products. (Prerequisites: BIOL 105, 106.)

NRM 312 3 Credits Alternate Spring Introduction to Range Management (3+0)
Applied ecological treatment of soil, plant and grazing animal relationships on unencultivated lands. Origin of the discipline, management practices, important rangelands of North America; emphasis on Alaska's rangelands and grazers. (Prerequisites: BIOL 105, 106, BOT 239 or permission of instructor; NRM 320, 321 recommended. Next offered: 1996-97.)
NRM 313 4 Credits Alternate Spring
Introduction to Plant Pathology (3+3)
Plant pathology: non-pathetic and parasitic causes of plant diseases; methods of plant infestation and mechanism of plant defenses; epidemiology and disease control. (Prerequisites: BIOL 105, 106; BOT 239 recommended. Next offered: 1996-97.)

NRM 320 3 Credits Alternate Fall
Introduction to Animal Science (2+3)

NRM 321 3 Credits Alternate Fall
Applied Animal Nutrition (2+3)
Application of feeding standards and feedstuffs analysis to the nutrition of farm animals. Comparative anatomy of the digestive system of pig, horse, and cow. (Prerequisite: A course in general biology. Next offered: 1995-96.)

NRM 338 3 Credits Fall
Introduction to Geographic Information Systems (2+3)
(Same as GEOG 338)
Geographic data concepts including mapping systems, data sources, editing data, GIS analysis and computer mapping. Introduction to Global Positioning Systems. GIS applications in natural resources management. Materials fee: $35.00. (Prerequisite: Knowledge of PC and UNIX workstations desirable.)

NRM 340 3 Credits Spring
Natural Resources Measurement and Inventory (2+3)
Techniques and implementations used to measure and inventory natural resources, including land, timber, range, wildlife, water, and recreation resources. (Prerequisite: Junior standing or permission of instructor.)

NRM 341 4 Credits Spring
GIS Analysis (3+3)
GIS analysis of natural resources including spatial query, attribute query, vector, grid, image, topographic and network analysis techniques. (Prerequisite: NRM 338.)

NRM 345W 3 Credits Spring
Principles of Outdoor Recreation Management (2+3)
Theories, practices, economics, and problems fundamental to the use and related natural resources for recreation. (Prerequisite: Junior standing or permission of the instructor.)

NRM 370 3 Credits Fall
Introduction to Watershed Management (2+3)
The hydrologic cycle and the influence of land management techniques on water quantity, quality, and timing. Water yield, soil erosion, and non-point pollution, snowpack management, and land use alternatives. (Prerequisites: NRM 101 and GEOG 101 or permission of instructor.)

NRM 375 3 Credits Fall
Forest Ecology (2+3)
Basic forest ecology concepts including work on the physical (wind, temperature, water, etc.), biotic (population and community dynamics), genetic and successional and landscape dynamics and how this basic information can be used in development of wise management plans for forest ecosystems. (Prerequisite: NRM 338, 339.)

NRM 380W 3 Credits Fall, Spring
Soils and the Environment (2+3)
Soil development and classification: physical and chemical properties; biological activity; water movement and nutrient cycling in natural and manipulated ecosystems. (Prerequisite: CHEM 105.)

NRM 400 3 Credits Fall
Fisheries Science (3+3)
(Same as FISH 400)
The subject of fishery science is reviewed to reflect the emerging concept of a study area integrated over a broad sweep of disciplines: oceanography, limnology, marine biology, fish population dynamics, aquaculture, economics, processing, product quality and development, and marketing. Demonstrates how such different subjects have feedback loops to one another and stresses the science fundamentals involved. Laboratory fee: $10.00. (Prerequisite: one 200-level biology class. Corequisite: STAT 200 [STAT 207.373-J].)

NRM 401 3 Credits Fairbanks, Spring
Fisheries Management (3+0)
(Same as FISH 401)
Principles, concepts and techniques of fisheries management in terms of their biological, economic, social and political aspects. Topics are stock and introductions, habitat manipulation, sustainable yield, regulation, management organization and their responsibilities. Examples of several fisheries are used to clarify concepts and practices. (Prerequisite: BIOL 271. Next offered Juneau: 1995-96.)

NRM 404 3 Credits Spring
Processes of Natural Resources Decision Making (3+3)
Analysis of decision-making models and evaluation criteria within the institutional and social constraints of federal and state agencies. (Prerequisites: NRM 101 and sophomore standing.)

NRM 405W 2 Credits Fall, Spring
Senior Thesis in Natural Resources Management (2+3)
Problem-solving with emphasis on writing and analysis. Individual project under the guidance of faculty sponsor involving formulation of a question in natural resources management, development of a proposal, and preparation of a formal, comprehensive written report. Must be repeated for a maximum of 4 credits. (Prerequisites: NRM core, senior standing, senior thesis orientation workshop, or permission of instructor.)

NRM 407 3 Credits Spring
Environmental Law (3+3)
The role of common law theory in regulatory, statutory, and constitutional interpretation in the field of environmental protection, including air and water pollution, toxic substances, and land-use regulation. (Prerequisite: Junior or senior class standing or permission of instructor.)

NRM 412 3 Credits Alternate Fall
Field Crop Production (3+4)
Agronomic principles and practices involved in the production, storage, marketing, and utilization of field crops. (Prerequisite: NRM 211. Next offered: 1996-97.)

NRM 420 3 Credits Alternate Spring
Animal Nutrition and Metabolism (3+0)
Nutrition and metabolism of domestic animals; ruminant and monogastric. (Prerequisite: CHEM 105, 106; biochemistry recommended. Next offered: 1995-96.)

NRM 422 3 Credits Alternate Spring
Grazing Management and Production Systems (2+3)
Functional biology of large herbivores (ungulates) and the management of world's grazing systems. Production strategies (cropping, herding, ranching, and farming) as they pertain to productive and/or commercial management of wild ungulates with emphasis on Alaska's species. Laboratory presents specific examples with guest lecturers, films, and an introduction to modeling of grazing systems. (Prerequisites: BIOL 105X, 106X and a wildlife or animal science course or permission of instructor. Next offered: 1996-97.)

NRM 430 3 Credits Fall
Land-Use Planning (3+3)
History, legal framework, principles, processes, and practices of land use planning. Important Alaskan issues and problems. (Prerequisite: Upper division standing.)

NRM 431 3 Credits Spring
Wildlife Policy and Administration (3+0)
(Alternate Spring)
Study of laws and agencies shaping wildlife management in North America. History and current status of major policy issues. Organization of and funding sources for state and federal programs in wildlife conservation. (Prerequisite: A 3 credits course in wildlife management principles or permission of instructor.)

NRM 438 3 Credits Spring
Arc Macro Language GIS Programming (3+3)
(Same as GEOG 438)
Arc macro language. Programming of pop-up menus and tools for GIS editing, display, and analysis. (Prerequisite: NRM 338 or equivalent. Next offered: 1996-97.)

NRM 445 4 Credits Fall, Spring
Managing Food Production Systems (3+3)
Principles of firm applied to development of a diversified plan for food production. Budget and cash flows, using a personal computer. (Prerequisites: NRM 310, 320, basic economics [can be taken concurrently], and basic knowledge of operation of a personal computer, or permission of instructor. Next offered: 1995-96.)

NRM 450 3 Credits Fall
Forest Management (3+3)
Forest land management for production of goods and services; relationship of timber production to other forest land uses. Sustained yield, allowable cut, information needs, valuation, decision making. (Prerequisites: NRM 251, 340, ECOW 235 (or equivalent), or permission of instructor. Next offered: 1996-97.)

NRM 451W 3 Credits Spring
Silviculture (2+3)
Examines biological, environmental, and silvicultural considerations essential for successful regeneration and maintenance of boreal and western North American forests. For persons in land management, including timber, woodlot, wildlife habitat, streamside, aesthetics. Provides intense look at science and art of forest stand management. Involves considerable critical writing. Field trips required. (Prerequisites: NRM 251, BIOL 271, junior standing or permission of the instructor. Next offered: 1996-97.)
### Northern Studies

For information on studying at McGill University, Montreal, Canada; or opportunities for study in the U.S.S.R., see Study Abroad.

**NORS 484** 3 Credits  
Seminar in Northern Studies (3+0)  
Alternative Spring  

An interdisciplinary seminar focusing on topics relating to the North with emphasis on the physical sciences, the peoples and the socioeconomic and political aspects of the area. Specialists in the various fields will assign readings and conduct discussions. (Prerequisite: At least junior standing or permission of instructor.)

**NORS 600** 3 Credits  
Pershpectives on the North (3+0)  
Fall  
(Same as HIST 600)

**NORS 601** 3 Credits  
Research Methods and Sources in the North (3+0)  
Fall

**NORS 606** 3 Credits  
Science, Technology and Development in Northern Regions (3+0)  
Alternative Fall

**NORS 610** 3 Credits  
Northern Indigenous Peoples and Contemporary Issues (3+0)  
Alternative Fall  
(Same as ANTH 610)

**NORS 614** 3 Credits  
Human Adaptation to the Circumpolar North (3+0)  
Alternative Spring  
(Same as PSY 614)

**NORS 616** 6 Credits  
Lab Theatre I "Write Theatre" (3+9)  
As Demand Warrants  
(Same as THR 416)

**NORS 618** 6 Credits  
Lab Theatre II "Do Theatre" (3+6)  
As Demand Warrants  
(Same as THR 418)

**NORS 620** 3 Credits  
Images of the North (3+0)  
Alternative Spring  
(Same as ENGL 620)

**NORS 625** 3 Credits  
Visual Images of the North (3+0)  
Alternative Spring

**NORS 630** 3 Credits  
Economic Issues of the Circumpolar North (3+0)  
Alternative Fall  
(Same as ECON 630)

**NORS 637** 3 Credits  
Geography of Northern Development (3+0)  
Alternative Fall  
(Same as GEOG 637)

**NORS 640** 3 Credits  
Ethics and Reporting in the Far North (3+0)  
Fall  
(Same as JB 440 and 640)

**NORS 648** 3 Credits  
Environmental Politics of the Circumpolar North (3+0)  
Alternative Spring  
(Same as PS 648)

**NORS 650** 3 Credits  
Comparative Government and Politics in the Circumpolar North (3+0)  
Alternative Spring  
(Same as PS 650)

**NORS 651** 3 Credits  
Law, Justice and Society in the Circumpolar North (3+0)  
Alternative Spring  
(Same as PS 651)

**NORS 652** 3 Credits  
International Relations of the North (3+0)  
Alternative Spring  
(Same as PS 652)
### Office Management and Technology

A $25 per semester student computing facility user fee will be assessed for any ABUS, CAPS or OMT course of 2 credits or more at the 100-level of higher. This fee is in addition to any labmaterial fees.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
</table>
| NOMS 661 | 3 Credits | History of Alaska (3+0)  
(Same as HIST 461) |
| NOMS 664 | 3 Credits | History of Russia (3+0)  
(Same as HIST 464) |
| NOMS 665 | 3 Credits | Russian Eastward Expansion (3+0)  
(Same as HIST 465) |
| NOMS 680 | 3 Credits | Comparative Education (3+0)  
(Same as ED 680) |
| NOMS 681 | 3 Credits | Polar Exploration and its Literature (3+0)  
(Same as HIST 481) |
| NOMS 682 | 3 Credits | History of Circumpolar Research (3+0)  
(Same as HIST 482 and LS 483) |
| NOMS 683 | 3 Credits | 20th Century Circumpolar History (3+0)  
(Same as HIST 483) |
| NOMS 690 | 3 Credits | Researching and Writing Public Northern History (1+3)  
(Same as HIST 690) |

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
</table>
| OMT 100 | 3 Credits | As Demand Warrants  
Alphabetic Shorthand (3+0)  
Introduces alphabetic shorthand, including alphabet, shortcuts, phrasing, and other abbreviating devices. |
| OMT 103 | 1-3 Credits | As Demand Warrants  
Keyboarding I/Beginning Typewriting (1-3+0)  
Basic keyboarding skills with emphasis on correct techniques and development of speed and accuracy. Introduction to centering, typing of personal and business letters, envelopes, simple tables and manuscripts. For those with no previous typing training. May be taken in 1 credit segments in the Office Professions lab. Materials fee: $10.00. |
| OMT 104 | 1 Credit | As Demand Warrants  
Typing Skill Building (1+0)  
Supervised training to improve speed and/or accuracy on straight and numerical copy. May be repeated up to 3 credits. Materials fee: $5.00. (Prerequisite: OMT 103 or permission of instructor.) |
| OMT 105 | 3 Credits | As Demand Warrants  
Keyboarding II/Intermediate Typewriting (3+0)  
Instruction and training to attain at least minimal typing skill, experience and knowledge necessary for typist beginning an office career. Lab arranged. Materials fee: $10.00. (Prerequisite: OMT 103 or one year high school typing or permission of instructor.) |
| OMT 106 | 3 Credits | As Demand Warrants  
Keyboarding III/Advanced Typewriting (3+0)  
Training and practice to achieve level of typing skill, experience, knowledge and production output required in business office positions. Lab arranged. Materials fee: $10.00. (Prerequisite: OMT 105 or permission of instructor.) |
| OMT 107 | 3 Credits | As Demand Warrants  
Medical Terminology (3+0)  
Study of medical terminology, including analysis of its roots and origins. Anatomical, diagnostic, operative, and laboratory terminology of the human body systems, and selected medical specialties. Emphasis on spelling and pronunciation. |
| OMT 109 | 1 Credit | As Demand Warrants  
Proofreading (1+0)  
Provides instruction and practice in finding, making and correcting errors commonly made but often overlooked in business communication. Practice in recognizing frequently-made errors, where they are likely to occur and special techniques of finding them. Open lab. |
| OMT 110 | 3 Credits | As Demand Warrants  
Office Procedures (3+0)  
Duties and responsibilities of general office employees including filing, processing mail, telephone communication, meeting the public, office supplies, banking, employment procedures and grooming. |
| OMT 131 | 3 Credits | As Demand Warrants  
Business English (3+0)  
Comprehensive review of grammar, punctuation, capitalization and spelling, with emphasis on business and office occupations. |
| OMT 151 | 1-3 Credits | As Demand Warrants  
WordPerfect (1-3+0)  
Provides practice on an IBM/PC or Macintosh computer using WordPerfect software. The applications cover basic, intermediate and advanced topics. Materials fee: $10.00. (Prerequisite: Keyboarding speed of 35 wpm or permission of instructor.) |
| OMT 203 | 2 Credits | As Demand Warrants  
Calculating Machines (2+0)  
Provides basic operating knowledge of the electronic calculator for such applications as discounting, amount and percent of change, prorating interest, commissions and payroll. Development of proficiency in use of machines for initial job placement. Open lab. (Prerequisite: ABUS 155 strongly recommended.) |
| OMT 207 | 2 Credits | As Demand Warrants  
Machine Transcription (2+0)  
Training in machine transcription with emphasis on mailable copies. Review of language skills and vocabulary included. Materials fee: $10.00. (Prerequisite: OMT 105 or permission of instructor.) |
| OMT 210 | 3 Credits | As Demand Warrants  
Legal Typewriting (3+0)  
Provides legal procedures background and skill improvement in typewriting and transcription. Emphasis on understanding legal processes as well as developing expertise in typewriting and office procedures. Materials fee: $10.00. (Prerequisite: OMT 105 or demonstration of equivalent proficiencies.) |
| OMT 211 | 2 Credits | As Demand Warrants  
Medical Typing (2+0)  
Provides training for employment as an office worker, particularly as a forms typist, in a hospital or medical bureau or office or toward qualifications as a medical assistant or secretary. (Prerequisite: OMT 105 or demonstration of equivalent proficiencies.) |
| OMT 214 | 1 Credit | As Demand Warrants  
Medical Machine Transcription (1+0)  
Instruction and practice in formatting medical papers including a Medicare form, an admission form, a dental report; preparing patient histories, medical reports, file cards and other medical documents. Practice in transcribing from machine dictation and in using medical terminology correctly. Materials fee: $5.00. (Prerequisite: OMT 105 and 207.) |
| OMT 215 | 1 Credit | As Demand Warrants  
Legal Machine Transcription (1+0)  
Instruction and practice in formatting legal papers including a lease, bill of sale, subpoena, stipulations, interrogatories, notices and various types of orders. Transcription from machine dictation; using the language of the law correctly. Materials fee: $5.00. |
| OMT 221 | 3 Credits | As Demand Warrants  
Filing/Records Management (3+0)  
Instruction in basic alphabetic storage with filing rules and cross-referencing and procedures for retrieving records manually. Includes adaptations of the alphabetic storage method including geographic, numeric and subject; storing and retrieving special records (card files, visible records, microrecords); organization and operation of records management programs and control of records systems. |
| OMT 222 | 1-2 Credits | As Demand Warrants  
CPS Review  
Prepares students for the CPS (Certified Professional Secretary) examination. Review sessions offered in six areas covered by the exam: behavioral science in business, business law, economics and management, accounting, office administration and office technology. One credit is granted for any combination of three of the above review topical areas. Materials fee: $10.00. |
Paralegal Studies

PLS 101  3 Credits  As Demand Warrants
Introduction to Paralegal Studies (3+0)
A general survey of the skills required to work as a paralegal in today's job market. Focus on paralegal regulation, licensing and ethical issues; use of law library to locate and research legal issues; use of interviewing, investigating and discovery techniques to develop facts of a case. Legal vocabulary of approximately 200 words is learned and discussed. Research project on topic selected by student replaces final exam. Materials fee: $10.00.

PLS 203  3 Credits  As Demand Warrants
Torts (3+0)
Study of the basic essentials needed to effectively assist an attorney in the filing or defense of claims based on personal and property damage. A basic vocabulary of legal terminology associated with tort law is studied together with important statutes and case law. Emphasis on Alaska law. Materials fee: $10.00. (Prerequisite: PLS 101 or instructor permission.)

PLS 210  3 Credits  As Demand Warrants
Civil Procedure (3+0)
Basic vocabulary and concepts essential to effectively assist an attorney with the procedural aspects of civil litigations. Materials fee: $10.00. (Prerequisite: PLS 101 or instructor permission.)

PLS 213  3 Credits  As Demand Warrants
Criminal Law for Paralegals (3+0)
Study of both the substantive criminal law and the rudiments of criminal procedure, focusing on both Alaska law and procedure and important constitutional considerations associated with due process, search and seizure and Fifth Amendment rights. Learn and work with a basic vocabulary unique to criminal law and procedure. Materials fee: $10.00. (Prerequisite: PLS 101 or instructor permission. Does not substitute for JUST 352. Next offered: 1995-96.)

PLS 215  3 Credits  As Demand Warrants
Contracts/Real Property (3+0)
Basic vocabulary and concepts essential to effectively assist an attorney with the preparation of contracts and real property transactions. Materials fee: $10.00. (Prerequisite: PLS 101 or instructor permission.)

PLS 240  3 Credits  As Demand Warrants
Family Law (3+0)
Basic vocabulary and concepts essential to understanding family law and assisting a practicing attorney. Materials fee: $10.00. (Prerequisite: PLS 101 or instructor permission.)

PLS 299  3 Credits  As Demand Warrants
Paralegal Studies Practicum (3+0)
An internship involving a minimum of 150 hours of work under the supervision of an attorney, and, when available, a practicing paralegal for that attorney in a local law office or law related situation. Must seek approval of faculty advisor for admittance. Materials fee: $10.00. (Prerequisites: Must have completed at least 75% of paralegal studies degree requirements with a minimum 2.5 cumulative grade point average or approval of UAF faculty advisor. Note: Students meet as a class only once. All subsequent classes or meetings with UAF faculty advisor are arranged by individual students and advisor.)

Petroleum Engineering

A $25.00 per semester student computing facility user fee is assessed for Petroleum Engineering courses at the 400-level or higher. This fee is in addition to any material/lab fees.

PETE 103  1 Credit  Fall
Survey of the Energy Industries (1+0)
Overview of global energy supply and demand, alternate energy options, and petroleum production technology.

PETE 205  3 Credits  Fall
Introduction to Petroleum Drilling and Productions (3+0)
Fundamental principles of drilling, well completions, production engineering; field trips to Alaskan oil fields if possible. (Prerequisite: MATH 200.)

PETE 211  1-2 Credits  Spring
Drilling Laboratory (0+3 or 6)
Measurement of physical properties of drilling mud; optional BOP certification and drilling rig operation experience during spring break. (Prerequisite: PETE 205 or permission of instructor.)

PETE 301  4 Credits  Fall
Reservoir Rock and Fluid Properties (4+0)
Fundamental concepts of reservoir rock and fluid properties including porosity, permeability, fluid saturations, capillary pressure, relative permeabilities, classification of petroleum reservoirs by fluid phase contents, oil, gas and water properties, fluid sampling, and PVT analysis. (Prerequisites: MATH 201, ES 346 and GEOS 101 or GE 261.)

PETE 302  3 Credits  Spring
Well Logging (3+0)
Comprehensive treatment of modern well logging methods including formation and production logging tools and techniques and basic concepts of log interpretation. (Prerequisite: Junior standing in engineering or geoscience.)

PETE 303W  1 Credit  Spring
Reservoir Rock and Fluid Properties Laboratory (0+3)
Measurement of essential properties of reservoir rock and reservoir fluids; determination of porosity, permeability, fluid saturations, capillary pressures, specific gravity, viscosity, surface tension, PVT properties and interpretation of PVT reports for reservoir fluid samples. (Prerequisite: PETE 301.)

PETE 321  3 Credits  Fall
Advanced Thermodynamics for Petroleum Engineers (3+0)
Thermodynamics in the transport of petroleum fluids from the formation to the surface with an emphasis on multi-phase, multi-component equilibrium processes. (Prerequisites: MATH 302, CHEM 321 and ES 346 and concurrent registration in ES 341.)

PETE 400  1 Credit  Fall
Practical Engineering Report (0+3)
Report on practical experience from petroleum engineering summer job. (Prerequisite: Senior standing in engineering or geoscience, or permission of instructor.)

PETE 407  3 Credits  Fall
Petroleum Production Engineering (3+0)
Well completion, workovers, surface and subsurface equipment design, sucker-rod pumping, gas lift, stimulation techniques, sand control. Laboratory includes measurement of gas and oil streams. (Prerequisites: ES 341 and ES 346.)

PETE 411W  1 Credit  Spring
Drilling Fluids Laboratory (0+3)
Design, composition and measurement of drilling fluid properties, evaluation of mud activities and chemical treatment of contaminated drilling fluid. (Prerequisites: PETE 205 and concurrent enrollment in PETE 426.)

PETE 421  3 Credits  Spring
Reservoir Characterization (3+0)
Application of well logs to delineate reservoir rock properties and its spatial variations. Estimation of petroleum in place. Impact of facies variation and depositional models for the design of production policies. Impact of formation structure on enhanced oil recovery methods. Reservoir surveillance. (Prerequisites: PETE 301, 302, and GEOS 370)

PETE 426  3 Credits  Spring
Drilling Engineering (3+0)
Principles of drilling, drilling fluids, drilling mud, drilling problems, mud logging, drill stem testing, rig types, rig design and selection. Drilling optimization. Well control. (Prerequisites: ES 331, 341.)

PETE 431  2 Credits  Fall
Natural Gas Engineering (2+0)
Natural gas production and condensate reservoirs. Design of processing, transportation, distribution and flow measurement systems. (Prerequisite: PETE 301.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PETE 456</td>
<td>3</td>
<td>Spring</td>
<td>Petroleum Evaluation and Economic Decisions (3+0) Economic appraisal methods for oil field developmental project evaluations including risk analysis, probability, and statistics in decision making and evaluations. Case studies. (Prerequisites: MATH 202 and PETE 476.)</td>
</tr>
<tr>
<td>PETE 466</td>
<td>3</td>
<td>Fall</td>
<td>Petroleum Recovery Methods (3+0) Flow and physicochemical principles of oil recovery by water, chemical, thermal and miscible floods. Prediction of recovery for each of these methods. (Prerequisites: PETE 301 and PETE 476.)</td>
</tr>
<tr>
<td>PETE 476</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Petroleum Reservoir Engineering (3+0) Quantitative study and prediction of the behavior of oil and gas reservoirs under primary, secondary, and tertiary recovery mechanisms. (Prerequisites: PETE 301, 405.)</td>
</tr>
<tr>
<td>PETE 478</td>
<td>2</td>
<td>Spring</td>
<td>Well Test Analysis (2+0) Transient flow of fluids through porous media, application of solutions of the diffusivity equation to pressure buildup, drawdown, interference testing and log-log type curve analysis and effect of reservoir heterogeneities on pressure behavior. (Prerequisites: PETE 476 and MATH 302)</td>
</tr>
<tr>
<td>PETE 481W</td>
<td>3</td>
<td>Fall</td>
<td>Well Completions and Stimulation Design (2+3) Design of casing programs, cementing, open-hole and side-trough completions, well stimulation, completion and workover fluids; and evaluation of sand control and workover operations. (Prerequisites: PETE 205, ES 341 and PETE 426.)</td>
</tr>
<tr>
<td>PETE 487W</td>
<td>2</td>
<td>Spring</td>
<td>Petroleum Project Design (2+0) Emphasis on design and analysis of petroleum exploration, production and reservoir engineering systems by analytical, experimental and computer methods. Identification of requirements, conceptual and detailed project design and cost analysis. Completion of an engineering project. (Prerequisite: Senior standing.)</td>
</tr>
<tr>
<td>PETE 489</td>
<td>2</td>
<td>Fall, Spring</td>
<td>Reservoir Simulation (2+0) The theory and use of computer reservoir simulation in petroleum reservoir and production engineering. (Prerequisites: MATH 310 and PETE 476.)</td>
</tr>
<tr>
<td>PETE 607</td>
<td>3</td>
<td>Fall</td>
<td>Advanced Production Engineering (3+0)</td>
</tr>
<tr>
<td>PETE 610</td>
<td>3</td>
<td>Fall</td>
<td>Advanced Reservoir Engineering (3+0)</td>
</tr>
<tr>
<td>PETE 630</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Waterflooding (3+0)</td>
</tr>
<tr>
<td>PETE 661</td>
<td>3</td>
<td>Spring</td>
<td>Advanced Well Testing (3+0)</td>
</tr>
<tr>
<td>PETE 662</td>
<td>3</td>
<td>Every Third Semester</td>
<td>Enhanced Oil Recovery (3+0)</td>
</tr>
<tr>
<td>PETE 663</td>
<td>3</td>
<td>Fall</td>
<td>Advanced Reservoir Simulation (3+0)</td>
</tr>
<tr>
<td>PETE 665</td>
<td>3</td>
<td>Every Third Semester</td>
<td>Advanced Phase Behavior (3+0)</td>
</tr>
<tr>
<td>PETE 666</td>
<td>3</td>
<td>Every Third Semester</td>
<td>Advanced Drilling and Completions (3+0)</td>
</tr>
<tr>
<td>PETE 670</td>
<td>3</td>
<td>Fall</td>
<td>Fluid Flow Through Porous Media (3+0)</td>
</tr>
<tr>
<td>PETE 683</td>
<td>3</td>
<td>Every Third Semester</td>
<td>Advanced Natural Gas Engineering (3+0)</td>
</tr>
<tr>
<td>PETE 684</td>
<td>3</td>
<td>Fall</td>
<td>Computational Methods in Petroleum Engineering (3+0)</td>
</tr>
<tr>
<td>PETE 685</td>
<td>3</td>
<td>Every Third Semester</td>
<td>Non-Newtonian Fluid Mechanics (3+0)</td>
</tr>
</tbody>
</table>

### Philosophy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHIL 201</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Introduction to Philosophy (3+0) h Terms, concepts, and problems as reflected in writings of great philosophers. (Prerequisite: Sophomore standing or permission of the instructor.)</td>
</tr>
<tr>
<td>PHIL 202</td>
<td>3</td>
<td>Spring</td>
<td>Introduction to Eastern Philosophy (3+0) h Basic assumptions, problems and systems of the major philosophical traditions of the Far East. (Prerequisite: PHIL 201 or permission of the instructor.)</td>
</tr>
<tr>
<td>PHIL 204</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Introduction to Logic (3+0) h Principles of deductive and inductive logic and application of these principles to critical thinking in science and other fields; brief introduction to symbolic logic and its application. (Prerequisite: Sophomore standing.)</td>
</tr>
<tr>
<td>PHIL 321</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Aesthetics (3+0) h The nature of aesthetic experience in poetry, music, painting, sculpture and architecture; studies in relation to artistic production and the role of art in society. (Prerequisite: PHIL 201. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PHIL 322X</td>
<td>3</td>
<td>Fall and Spring</td>
<td>Ethics (3+0) h Examination of ethical theories and basic issues in moral thought. (Prerequisite: At least junior standing.)</td>
</tr>
<tr>
<td>PHIL 341O</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Epistemology (3+0) h The nature of knowledge, truth and certainty. (Prerequisite: PHIL 201. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>PHIL 342</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Metaphysics (3+0) h Theories of reality and their relationship to science, philosophy and religion. (Prerequisite: PHIL 201. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>PHIL 351</td>
<td>3</td>
<td>Fall</td>
<td>History of Philosophy and Science (3+0) h Ancient and medieval periods. (Prerequisite: Six credits in philosophy and/or natural and social science.)</td>
</tr>
<tr>
<td>PHIL 352</td>
<td>3</td>
<td>Spring</td>
<td>History of Philosophy and Science (3+0) h Renaissance, modern, and recent periods. (Prerequisite: Six credits in philosophy and/or natural and social science.)</td>
</tr>
<tr>
<td>PHIL 381</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Topics in Logics (3+0) h An advanced explanation of problems, philosophies and approaches in logics, including classical, symbolic and comparative logics. (Prerequisites: Completion of PHIL 204 or its equivalent and permission of the instructor.)</td>
</tr>
<tr>
<td>PHIL 471</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Contemporary Philosophical Problems (3+0) h Ideological issues facing the modern world. (Prerequisite: Nine credits philosophy or permission of the instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>PHIL 481</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Philosophy of Science (3+0) h Comparison and discussion of various contemporary methodological positions. (Prerequisite: Junior standing. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PHIL 482</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Comparative Religion (3+0) h Seven world faiths represent answers to questions of man's duty, his destiny and his nature. (Prerequisite: Permission of the instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PHIL 483</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Philosophy of Social Science (3+0) h Comparison and analysis of various contemporary methodological positions in the social sciences. (Prerequisite: Junior standing. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>PHIL 485</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Topics in Comparative Philosophies (3+0) h Explores, on an advanced level, modern and traditional philosophical questions, problems, and approaches to and within different cultural settings. Student should have at least an acquaintance with a second language and some multicultural experience. (Prerequisite: Nine credits in philosophy.)</td>
</tr>
<tr>
<td>PHIL 486</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>B.A. Thesis in Philosophy (1+2+var) h Independent research on a topic demonstrating both student's ability to philosophically analyze as well as ability to do cultural and historical research. (Prerequisite: Completion of all major requirements in philosophy.)</td>
</tr>
</tbody>
</table>

---

**COURSE DESCRIPTIONS / 179**
Physical Education

PER 100-199 1 Credit  Fall, Spring
Physical Activities and Instruction (0+3)
Instruction, practice, and activity in a variety of physical activities, sports, and
dance in separate sections. Courses may be taken for credit one time only.
Laboratory fees as indicated.
PER 101 - Multifitness Conditioning
PER 102 - Running for Fitness
PER 103 - Cycling for Fitness
PER 104 - Walking for Fitness
PER 105 - Weight Training for Fitness
PER 106 - Aerobics
PER 107 - Low Impact Aerobics
PER 108 - Power Lifting
PER 109 - Beginning Ice Skating
PER 110 - Intermediate Ice Skating
PER 111 - Ice Skating for Conditioning
PER 112 - Beginning Ice Dancing
PER 113 - Intermediate Ice Dancing
PER 114 - Advanced Ice Dancing
PER 115 - Beginning Ice Hockey
PER 116 - Intermediate Ice Hockey
PER 117 - Speed Skating
PER 118 - Curling
PER 119 - Beginning Swimming
PER 120 - Intermediate Swimming
PER 121 - Advanced Swimming
PER 122 - Conditioning Swimming
PER 123 - Aquatic Aerobics
PER 124 - Water Polo
PER 125 - Springboard Diving
PER 126 - Synchronized Swimming
PER 127 - Beginning Fencing
PER 128 - Intermediate Fencing
PER 129 - Advanced Fencing
PER 130 - Beginning Aikido
PER 131 - Intermediate Aikido
PER 132 - Advanced Aikido
PER 133 - Beginning Taekwondo
PER 134 - Intermediate Taekwondo
PER 135 - Advanced Taekwondo
PER 136 - Beginning Tai Chi Chuan
PER 137 - Intermediate Tai Chi Chuan
PER 138 - Advanced Tai Chi Chuan
PER 139 - Beginning Yoga
PER 140 - Intermediate Yoga
PER 141 - Advanced Yoga
PER 142 - Beginning Karate
PER 143 - Intermediate Karate
PER 144 - Advanced Karate
PER 145 - Basketball
PER 146 - Volleyball
PER 147 - Soccer
PER 148 - Team Handball
PER 149 - Orienteering
PER 150 - Canoeing
PER 151 - Kayaking
PER 152 - Rock Climbing
PER 153 - Mountain Climbing
PER 154 - Racquetball
PER 155 - Tennis
PER 156 - Table Tennis
PER 157 - Badminton
PER 158 - Billiards
PER 159 - Golf
PER 160 - Beginning Bowling (Lab fee: $35)
PER 161 - Intermediate Bowling (Lab fee: $35)
PER 162 - Advanced Bowling (Lab fee: $35)
PER 163 - Beginning Pistol Marksmanship (Lab fee: $35)
PER 164 - Intermediate Pistol Marksmanship (Lab fee: $35)
PER 165 - Advanced Pistol Marksmanship (Lab fee: $35)
PER 166 - Beginning Rifle Marksmanship (Lab fee: $35)
PER 167 - Intermediate Rifle Marksmanship (Lab fee: $35)
PER 168 - Advanced Rifle Marksmanship (Lab fee: $35)
PER 169 - Beginning Tennis (Labs fee: $35)
PER 170 - Intermediate Tennis (Labs fee: $35)
PER 171 - Advanced Tennis (Labs fee: $35)
PER 172 - Beginning Racquetball (Labs fee: $35)
PER 173 - Intermediate Racquetball (Labs fee: $35)
PER 174 - Beginning Ballet
PER 175 - Intermediate Ballet
**COURSE DESCRIPTIONS**

**PE 219** 1 Credit  
Fundamentals of Aquatics (1-3)  
Basic skills in aquatics for adult and youth groups. Emphasis on developing personal performance skills and safety procedures for effective class management.  
*Meets for 7 weeks.*

**PE 220** 1 Credit  
Fundamentals of Wrestling (1-3)  
Basic skills in wrestling for adult and youth groups. Emphasis on developing personal performance skills and safety procedures for effective class management.  
*(Next offered: 1996-97).*  
*Meets for 7 weeks.*

**PE 221** 1 Credit  
Fundamentals of Gymnastics (1-3)  
Basic skills in gymnastics for adult and youth groups. Emphasis on developing personal performance skills and safety procedures for effective class management.  
*(Next offered: 1995-96).*  
*Meets for 7 weeks.*

**PE 222** 1 Credit  
Fundamentals of Track and Field (1-3)  
Basic skills in track and field for adult and youth groups. Emphasis on developing personal performance skills and safety procedures for effective class management.  
*(Next offered: 1995-96).*  
*Meets for 7 weeks.*

**PE 224** 1 Credit  
Fundamentals of Resistant Training (1-3)  
Principles and practices of resistant training for enhancement of muscle strength, strength endurance, cardiovascular endurance, and body composition components of physical fitness with emphasis on development of correct and safe techniques using the various resistant modes available. *(Next offered: 1995-96).*

**PE 225** 1 Credit  
Fundamentals of Cardiovascular Training (1-3)  
Survey of techniques of development of health and performance related to cardiovascular fitness; safe and effective cardiovascular training in various modes (e.g., aerobics, aquatics, running, and mechanical); and system training as it pertains to each mode. *(Next offered: 1995-96).*

**PE 226** 1 Credit  
Fundamentals of Movement Mechanics (1-3)  
Basic principles of body mechanics underlying common (non-athletic) movements and activities. Emphasis on preventative self-care for various populations. *(Next offered: 1995-96).*

**PE 232** 3 Credits  
Analysis of Human Movement (3-4)  
Qualitative analysis of sport and dance through principles derived from the biological and physical sciences and directed towards understanding and improving human performance. *(Next offered: 1995-96)*

**PE 246** 3 Credits  
Advanced First Aid (3-0)  
Knowledge and skills to provide efficient aid and treatment in emergencies. Progresses through the Basic, Standard, and Advanced First Aid packages of the American Red Cross. Successful completion leads to certification by the American Red Cross in Advanced First Aid. Materials Fee: $10.00.

**PE 300** 1 Credit  
Advanced Theory and Techniques for Teaching Gymnastics (1-3)  
In-depth study of advanced skills, strategies, and analysis in gymnastics. *(Prerequisite: PE 221. Next offered: 1996-97).*  
*Meets for 7 weeks.*

**PE 302** 1 Credit  
Advanced Theory and Techniques for Teaching Basketball (1-3)  
In-depth study of advanced skills, strategies, and analysis in basketball. *(Prerequisite: PE 212. Next offered: 1996-97).*  
*Meets for 7 weeks.*

**PE 303** 1 Credit  
Advanced Theory and Techniques for Teaching Ice Sports (1-3)  
In-depth study of advanced skills, strategies, and analysis in teaching ice sports. *(Prerequisite: PE 213. Next offered 1996-97).*  
*Meets for 7 weeks.*

**PE 304** 1 Credit  
Advanced Theory and Techniques for Teaching Snow Sports (1-3)  
In-depth study of advanced skills, strategies, and analysis in teaching snow sports. *(Prerequisite: PE 214. Next offered 1996-97).*  
*Meets for 7 weeks.*

**PE 305** 1 Credit  
Advanced Theory and Techniques for Teaching Volleyball (1-3)  
In-depth study of advanced skills, strategies, and analysis in volleyball. *(Prerequisite: PE 215. Next offered: 1996-97).*  
*Meets for 7 weeks.*

**PE 306** 1 Credit  
Techniques in Teaching Creative Dance (1-3)  
Skill and practice in organizing creative dance experiences for all age groups. Emphasis on learning techniques will free people to create from their own movement vocabularies. Some emphasis on correct body alignment and techniques of moving. *(Prerequisite: PE 216. Next offered: 1995-96).*  
*Meets for 7 weeks.*

**PE 307** 1 Credit  
Techniques in Camping and Outdoor Recreation (1-3)  
In-depth study of advanced skills and organizational techniques in camping and outdoor recreation. One weekend campout required. Laboratory fee: $25.00. *(Prerequisite: PE 217. Next offered: 1995-96.)*  
*Meets for 7 weeks.*

**PE 308** 1 Credit  
Techniques in Track and Field (1-3)  
In-depth study of advanced skills and analysis of track and field. *(Prerequisite: PE 222. Next offered: 1996-97).*  
*Meets for 7 weeks.*

**PE 309** 2 Credits  
Aquatice Instructor (1-3)  
Knowledge and skills to teach swimming to children and adults, beginner through advanced swimmer and lifesaving. For American Red Cross Water Safety Instructor Certificate. Certification fee: $5.00. *(Prerequisites: Current American Red Cross Lifesaving Certificate and swim test.)*

**PE 310** 1 Credit  
Techniques in Teaching Folk and Square Dance (1-3)  
Techniques and practical application in organizing and teaching varying age and ability levels in folk and square dance. Detection include partner and non-partner folk dances, some fad dances and traditional square dance, and practice in cueing and calling. *(Prerequisite: PE 216. Next offered: 1996-97).*  
*Meets for 7 weeks.*

**PE 316** 3 Credits  
Motor Development (3-4)  
Motor skill and behavior development, infancy through old age. Individual differences, issues, applications and appraisal techniques. *(Prerequisites: PSY 101 and junior standing. Next offered: 1995-96.)*

**PE 317W** 3 Credits  
Motor Learning (3-4)  
Physical skills learning processes, patterns, issues, programs, applications, and evaluation. *(Prerequisites: PSY 101 and junior standing. Next offered: 1996-97.)*

**PE 321** 1-6 Credits  
Spring  
Practicum in Physical Education (0-0)  
Supervised training as apprentice instructor or leader in university class or within the community. Planning and conducting activities with increasing responsibility. Class may be repeated. Only 2 credits may count toward department requirement. *(Prerequisites: Appropriate 300 level technique courses and junior standing or equivalent background.)*

**PE 327W,0** 3 Credits  
Spring  
Physical Education for Children (3-4)  
Introduction to a variety of games, fundamental movement activities and sports appropriate for the K-5 student. Practical application of methods and techniques of instruction specific to physical education including lesson planning, behavior control, maintenance of a quality learning environment, observation and evaluation techniques. *(Prerequisites: PSY 101, junior standing and permission of instructor.)*

**PE 337W** 3 Credits  
Spring  
Exercise and Sport Psychology (3-0)  
(Same as PSY 337)  
Theoretical and practical applications of psychological issues related to participation in physical activities, including exercise adherence, performance enhancement, group dynamics, leadership and coaching behaviors, arousal/anxiety, intervention strategies and lifespan participation. *(Prerequisites: PSY 101, PE 316 or 317 or permission or instructor. Next offered: 1995-96.)*

**PE 400** 2 Credits  
As Demand Warrants  
Judging and Coaching Gymnastics (1-3)  
Techniques for teaching, judging, and administering men's and women's gymnastics, including apparatus, tumbling, and floor exercise. *(Prerequisite: Junior standing or previous gymnasric experience.)*

**PE 401** 1 Credit  
Every Third Fall  
Theory of Basketball (2-0)  
Techniques of playing and coaching men's and women's basketball, including theories of offense and defense, contest strategies and psychology of individual and team play. *(Prerequisites: PE 302 and junior standing. Next offered: 1996-97.)*

**PE 405** 2 Credits  
Every Third Fall  
Concepts and Design of Physical Fitness Programs (1-2/1-1/2)  
Problems, methods of achievement, and maintenance of physical fitness. Assessment of personal fitness status, participation in selected fitness activities, and acquisition of skills in basic physical fitness activity. *(Prerequisites: BIOL 111, 112. Next offered 1995-96.)*

**PE 406W.O** 3 Credits  
Alternate Fall  
Instructional Methodology for Physical Activity (2-3)  
Philosophy, curriculum development, methods for facilitating learning/skill development, controlling behavior, measurement and evaluation, observation of community programs, and instructional laboratories for adolescents and adults. *(Prerequisite: Junior standing. Next offered: 1995-96.)*
**Physics**

**PHYS 101  3 Credits**  Fall, Spring

*Introduction to Space Science (3+0)*

An exploration of the discoveries of the space age for the general student. Topics include solar-terrestrial relations, the earth's upper atmosphere and magnetosphere (including the aurora), stratosphere, troposphere, and space communications, with emphasis on fundamental physical processes. (Prerequisite: High school algebra.)

**PHYS 102X  4 Credits**  Spring

*Energy and Society (3+3)*

Exploring the concept of energy as defined by the laws of physics. Investigating the sources, conversion, distribution and ultimate dispersion of energy, as well as the consequences of its use in the development and maintenance of modern society. Designed for non-science majors. Laboratory fee: $20.00. (Prerequisite: Minimum two years of high school algebra.)

**PHYS 103X  4 Credits**  Fall

*College Physics (3+3)*

Classical physics including vectors, kinematics, Newton's Laws, momentum, work, energy, rotational motion, oscillations, waves, gravity, fluids, heat, temperature, Laws of Thermodynamics, and kinetic theory. For mathematics, science and liberal arts majors. Laboratory fee: $20.00 (Prerequisites: High school algebra, trigonometry and geometry or instructor permission.)

**PHYS 104X  4 Credits**  Spring

*College Physics (3+3)*

Coulomb's Law, electrical potential, capacitance, Kirchoff's Laws, magnetic fields, Faraday's Law, electromagnetic waves, physical and geometrical optics, waves and particles, atomic and nuclear physics. For mathematics, science and liberal arts majors. Laboratory fee: $20.00. (Prerequisite: PHYS 103X or instructor permission.)

**PHYS 113  1 Credit**

*Concepts of Physics (1+0)*

Review of experimental and theoretical studies of fundamental interactions of nature leading to major advances in human knowledge. Application of these discoveries to modern technologies, such as solid state electronics, lasers, holography, nuclear fusion, medical diagnostics, remote sensing, etc.

**PHYS 211X  4 Credits**  Fall, Spring

*General Physics (3+3)*

Vectors, kinematics, Newton's Laws, momentum, work, energy, rotational motion, oscillations, waves, gravity, and fluids. For engineering, mathematics and physical science majors. Laboratory fee: $20.00. (Prerequisites: Concurrent enrollment in MATH 201X and one year of high school physics, or instructor permission.)

**PHYS 212X  4 Credits**  Fall, Spring

*General Physics (3+3)*

Heat, temperature, Laws of Thermodynamics, Coulomb's Law, electrical potential, capacitance, Kirchoff's Laws, Biot-Savart Law, Faraday's Law, and electromagnetic waves. For engineering, mathematics and physical science majors. Laboratory fee: $20.00. (Prerequisite: MATH 201; PHYS 211X or ES 208 or concurrent enrollment in ES 210 or instructor permission.)

**PHYS 213X  4 Credits**  Spring

*Elementary Modern Physics (3+3)*

Geometrical and physical optics: elementary-level modern physics including special relativity, atomic physics, nuclear physics, solid-state physics, elementary particles, simple transport theory, kinetic theory, and concepts of wave mechanics. Laboratory fee: $20.00. (Prerequisites: PHYS 211X or 212X or permission of instructor.)

**PHYS 275X  4 Credits**  Fall

*Introduction to Astronomy (3+3)*

The exploration of the universe is one of the most natural of all human drives; people of all eras have sought to determine their basic relationships with the rest of the universe. Examination of the science of astronomy and its social consequences, with an emphasis on the interrelationships between astronomy and other sciences, and on the inseparable nature of our view of the cosmos and our view of ourselves. Designed for non-science majors. Laboratory fee: $20.00. (Prerequisite: Minimum two years of high school algebra or permission of instructor.)

**PHYS 276  3 Credits**  Spring

*Astronomy (3+0)*

Science elective for the general student. Stellar astronomy, physical properties and distribution of stars, interstellar matter, evolution of stars, galactic structure, and cosmology. Evening demonstrations. (Prerequisites: PHYS 275 or permission of instructor.)
### Physics Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 311</td>
<td>4</td>
<td>Thermodynamics and Statistical Physics (4+0) n</td>
<td>Fall</td>
</tr>
<tr>
<td>PHYS 312</td>
<td>4</td>
<td>Newtonian mechanics, motion of systems of particles, rigid body statics and dynamics, moving and accelerated coordinate systems, Lagrangian and Hamiltonian mechanics, continuum mechanics, theory of small vibrations, tensor analysis, rigid body rotations, special theory of relativity. (Prerequisites: PHYS 211X and at least concurrent enrollment in MATH 302; PHYS 311 for 312, or permission of instructor.)</td>
<td>Spring</td>
</tr>
<tr>
<td>PHYS 313</td>
<td>4</td>
<td>Modern Physics (4+0) n</td>
<td>Fall</td>
</tr>
<tr>
<td>PHYS 331</td>
<td>3</td>
<td>Thermodynamic systems, equations of state, the laws of thermodynamics, changes of phase, thermodynamics of reactions, kinetic theory, and introduction to statistical mechanics. (Prerequisite: PHYS 212X or permission of instructor.)</td>
<td>Fall</td>
</tr>
<tr>
<td>PHYS 332</td>
<td>3</td>
<td>Geometrical and Physical Optics (3+3) n</td>
<td>Spring</td>
</tr>
<tr>
<td>PHYS 333</td>
<td>3</td>
<td>Geometrical optics, interference and diffraction theory, non-linear optics, Fourier optics, and coherent wave theory. (Prerequisites: MATH 302, 314 and PHYS 411 or permission of the instructor.)</td>
<td>Spring</td>
</tr>
<tr>
<td>PHYS 381W</td>
<td>3</td>
<td>Electromagnetic Waves (3+0) n</td>
<td>Fall</td>
</tr>
<tr>
<td>PHYS 382W</td>
<td>3</td>
<td>Laboratory experiments in classical and modern physics. (Prerequisite: PHYS 213, PHYS 381 for 382, or permission of instructor.)</td>
<td>Spring</td>
</tr>
</tbody>
</table>

### Electricity and Magnetism (3+0) n
Electrostatics, dielectrics, magnetostatics, magnetic materials, and electromagnetism. Maxwell's equations, electromagnetic waves, radiation, physical optics, and selected topics from electronics. (Prerequisites: PHYS 212X and MATH 202 or permission of instructor.)

### Solid State Physics and Physical Electronics (4+0) n
Theory of matter in the solid state and the interaction of matter with particles and waves. (Prerequisites: MATH 302, 314 and PHYS 411 or permission of the instructor.)

### Political Science Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Description</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>PS 100X</td>
<td>3</td>
<td>Political Economy (3+0) s</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>PS 110</td>
<td>1</td>
<td>As Demand Warrants</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>PS 111</td>
<td>3</td>
<td>Comparative Politics (3+0) s</td>
<td>Fall</td>
</tr>
<tr>
<td>PS 201</td>
<td>3</td>
<td>Cases in Comparative Politics (3+0) s</td>
<td>Spring</td>
</tr>
<tr>
<td>PS 210</td>
<td>3</td>
<td>Alaska Government and Politics (3+0) s</td>
<td>Spring</td>
</tr>
<tr>
<td>PS 212</td>
<td>3</td>
<td>Introduction to Public Administration (3+0) s</td>
<td>Fall</td>
</tr>
<tr>
<td>PS 222</td>
<td>3</td>
<td>Research Methods (3+0) s</td>
<td>Fall</td>
</tr>
<tr>
<td>PS 263</td>
<td>3</td>
<td>Alaska Native Politics (3+0) s</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>Course Code</td>
<td>Credits</td>
<td>Title</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------</td>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>PS 300X</td>
<td>3</td>
<td>Values and Choice (3+0) h</td>
<td>The central question, &quot;What is Justice?&quot; will be posed of both Western and non-Western value and ethical theories. Value choices on issues such as abortion, pornography, gender inequality in the workplace, and alternative lifestyles will be examined. (Prerequisites: At least two lower-division courses in &quot;Perspectives on the Human Condition&quot; or equivalent (PS/ECON 100X, HIST 100X, ANT/HUM/SOC 100X, ART/MUS/TH/B 20X, ENGL/FL/200X, and junior standing.)</td>
</tr>
<tr>
<td>PS 301</td>
<td>3</td>
<td>American Presidency (3+0)</td>
<td>The institution of the presidency in the American political system. (Prerequisite: PS 101 or consent of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 302W.O</td>
<td>3</td>
<td>Congress and Public Policy (3+0)</td>
<td>The American Congress in the political system. (Prerequisite: PS 101. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 303</td>
<td>3</td>
<td>Politics and the Judicial Process (3+0)</td>
<td>The role of federal courts as political institutions. The politics of judicial selection, the nature of judicial decision-making and intracourt politics, litigations as a policymaking device, changes in the nature and scope of judicial power, government attorneys, the legal bureaucracy, and judicial agenda setting. (Prerequisite: PS 101. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 311W</td>
<td>3</td>
<td>Government and Politics of Russia and the Periphery (3+0) s</td>
<td>An examination of current developments in Russia from a number of perspectives: the effect of history and geography on political change; the nature of Russian government and society; the legacies of Lenin, Stalin, Gorbachev, and the ideological nature of regimes and leadership; economic forces and the political struggle in governance; revolution, democracy and reform; and the international role of Russia, particularly in relation to the former Soviet republics, Eastern Europe and other border areas. (Prerequisites: PS 201 or consent of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 312</td>
<td>3</td>
<td>East Asian Governments and Politics (3+0) s</td>
<td>Modern East Asia (including China, Taiwan, Japan, North and South Korea) politics and society, including governmental institutions, political processes and regional and global foreign relations. (Prerequisite: PS 201 or consent of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 314W</td>
<td>3</td>
<td>Political Ideologies (3+0) s</td>
<td>An examination of the purpose of ideology as an orienting set of political ideas with mass appeal. Analysis of twentieth century ideologies, including anarchism, communism, liberalism, socialism, environmentalism, and feminism. (Prerequisite: PS 101 or consent of instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>PS 315S</td>
<td>3</td>
<td>American Political Thought (3+0) s</td>
<td>Political ideas in the United States from colonial times to the present: Puritanism, revolutionary ideas, Constitutionalism, nature of the Union, Progressive movement, pragmatism. (Prerequisite: PS 101 or consent of instructor. HIST 131 and 132 strongly recommended. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 317W</td>
<td>3</td>
<td>International Politics (3+0) s</td>
<td>Introduction to the problems, literature and terminology of international relations. Provides a basis for understanding current international affairs. Examines relations between nations, regions and groups, as well as ideas of conflict, security, trade, technology, negotiation, cooperation, revolution, modernization and community.</td>
</tr>
<tr>
<td>PS 322</td>
<td>3</td>
<td>International Law and Organization (3+0) s</td>
<td>Case studies in international law (rights and duties of states, jurisdiction and sovereignty, treaties, use of force and adjudication processes); development of regional organizations and integration; the United Nations. (Prerequisite: PS 321 or consent of instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>PS 323</td>
<td>3</td>
<td>Issues of International Political Economy (3+0) s</td>
<td>Exploration of the manner in which political and economic forces interact to affect international flows of goods, money, investments, and technology. International political economic relations are examined in several contexts. (Prerequisite: PS 100X. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 325</td>
<td>3</td>
<td>Native Self-Government (3+0) s</td>
<td>Indigenous political systems, customary law and justice in Alaska emphasizing the organization of Native governance, federal Indian law and Alaska state charted local government. Comparisons between Alaska Native political development and those of tribes in the contiguous 48 states and northern hemispheric tribal people. (Prerequisites: HIST 100, PS 263.)</td>
</tr>
<tr>
<td>PS 330O</td>
<td>3</td>
<td>Law, Justice and Society (3+0) s</td>
<td>Examines legal reasoning and major legal theories through lecture, debate and discussion. Recommended as preparation for PS 435 and 456 (Constitutional Law I and II) and for pre-law students. (Prerequisites: PS 101.)</td>
</tr>
<tr>
<td>PS 401W</td>
<td>3</td>
<td>Political Behavior (3+0) s</td>
<td>Attitudes, opinions, beliefs of the American electorate and the impact of these factors on political behavior; role of political organizations (parties and interest groups) in modern American politics.</td>
</tr>
<tr>
<td>PS 403W</td>
<td>3</td>
<td>Public Policy (3+0)</td>
<td>Discussion of how policy process works and how policy analysis is conducted. Examples of policy issues from recent cases, especially in Alaska. (Prerequisites: PS 101 or consent of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 404</td>
<td>3</td>
<td>Introduction to Legal Research and Writing (3+0)</td>
<td>(Same as JUST 404) Methods of legal research and preparation of legal materials. Introduction to the resources of law libraries and the techniques of presenting issues in legal form. (Prerequisites: PS 101 or JUST 110.)</td>
</tr>
<tr>
<td>PS 411W</td>
<td>3</td>
<td>Classical Political Theory (3+0) h</td>
<td>(Same as ANS 425) Political ideas from ancient Greece, Rome, and the Judeo-Christian tradition. Theories of Plato, Aristotle, Cicero, Augustine, and Aquinas. (Prerequisites: PS 101 or consent of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 412W</td>
<td>3</td>
<td>Modern Political Theory (3+0) s</td>
<td>Political ideas from the Renaissance to the modern world. Theories of Machiavelli, Hobbes, Locke, Rousseau, Burke, Marx, and Lenin. (Prerequisites: PS 101 or consent of instructor; PS 411 strongly recommended. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 415</td>
<td>3</td>
<td>As Demand Warrants Contemporary Political Theory (3+0) s</td>
<td>An examination of contemporary theories about &quot;What is democracy?&quot; including theoretical investigation of the nature of existing &quot;democracies.&quot; Theory is used to provide an account of the process of determination of policy in democratic capitalist systems. Evaluation of existing &quot;democratic&quot; systems by comparing their nature with the realizable democratic ideals. (Prerequisite: PS 101 or consent of instructor.)</td>
</tr>
<tr>
<td>PS 420</td>
<td>3</td>
<td>Environmental Politics (3+0) s</td>
<td>Examination of politics of federal environmental policy decisions focusing on the environmental movement as a force reshaping American society. Topics include limits to growth thesis, impact assessment policy, and wilderness politics. (Prerequisite: PS 101 or consent of instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>PS 425</td>
<td>3</td>
<td>Federal Indian Law and Alaska Natives (3+0) s</td>
<td>The &quot;special relationship&quot; between the federal government and Native Americans based on land transactions and recognition of tribal sovereignty. Federal Indian law and policy evolving from this relationship. Legal rights and status of Alaska Natives. (Prerequisites: PS 101 and HIST 100; or consent of instructor; PS 263 is recommended.)</td>
</tr>
<tr>
<td>PS 435W</td>
<td>3</td>
<td>Constitutional Law I: Institutions and Governmental Powers (3+0) s</td>
<td>Constitutional doctrines and historical evolution of federalism and the separation of powers in the United States. Emphasis on the courts role in arbitrating intergovernmental and interbranch disputes, the constitutional status of the administrative bureaucracy, and the control of the war power and foreign policy. (Prerequisite: PS 101 or consent of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>PS 436W</td>
<td>3</td>
<td>Constitutional Law II: Civil Rights and Civil Liberties (3+0) s</td>
<td>Origin and development of civil rights and civil liberties in the United States. Emphasis on the social, political and philosophical justifications of rights as expressed in judicial decision and constitutional doctrine. (Prerequisite: PS 101 or consent of instructor. Next offered: 1995-96.)</td>
</tr>
</tbody>
</table>
PSY 230 3 Credits As Demand Warrants

Psychology of Adjustment (3+0) s
Study of the psychology of adjustment, growth, and creativity, including advances in personal psychology, understanding personality patterns, and an exploration of techniques and methods for furthering creative potential. (Prerequisite: PSY 101.)

PSY 240 3 Credits Fall, Spring
Developmental Psychology in Cross-Cultural Perspective (3+0) s
Individual development examined from both a psychological and cross-cultural perspective. Development of cognition, personality, and social behavior; attention to relevant research on those cultures found in Alaska. Also available via Independent Learning. (Prerequisite: PSY 101.)

PSY 250 3 Credits Fall, Spring
Introductory Statistics for Behavioral Sciences (3+0)
(Same as SOC 250)

Purpose and procedures of statistics; calculating methods for the description of groups (data reduction) and for simple inferences about groups and differences between group means. (Prerequisite: MATH 107 or equivalent.)

PSY 255 3 Credits As Demand Warrants
Foundations of Counseling (3+0)
(Same as HMSC 255)
Survey of counseling philosophy, approaches, and types of counseling systems in use. Topics include approach and system match; psychoanalysis, behavior therapy, and humanistic approaches; counseling ethics and ethical problems. (Prerequisites: PSY 101 and 240 or permission of instructor.)

PSY 304 3 Credits Fall
Personality (3+0) s
Psychological and social/cultural determinants of personality formation including appropriate theories in both areas. (Prerequisite: PSY 101.)

PSY 310 3 Credits Alternate Spring
Cross-Cultural Psychology (3+0) s
Major theories and research related to understanding the impact of culture on psychological development, cognition, social behavior, perception, and models for the conceptualization of distress and disease. Models for research and inquiry across culture will be discussed in the context of examining the cross-cultural research on selected topics. (Prerequisites: PSY 101 and PSY 250. Next offered: 1996-97.)

PSY 330 3 Credits Spring
Social Psychology (3+0) s
(Same as SOC 330)
Analysis of intergroup relationships in terms of process and value orientation, their influences on the personality, and aspects of collective behavior on group and person. Aspects of social interaction that have cultural and intercultural variation. (Prerequisite: PSY 101 or SOC 101.)

PSY 337W 3 Credits Alternate Spring
Exercise and Sport Psychology (3+0) (Same as PE 337)
Theoretical and practical applications of psychological issues related to participation in physical activities, including exercise adherence, performance enhancement, group dynamics, leadership and coaching behaviors, arousal/attention, intervention strategies and lifespan participation. (Prerequisites: PSY 101, PE 316 or 317 or permission or instructor. Next offered: 1996-97.)

PSY 345 3 Credits Fall
Abnormal Psychology (3+0)
A study of abnormal behavior, its causes, treatment, and social impact. The major classifications of disorders are presented. (Prerequisite: PSY 101.)

PSY 350 3 Credits Alternate Spring
Comparative Psychology (3+0) s
An integrated multidisciplinary behavioral approach emphasizing basic premises, causal factors, functional consequences and interrelationships. Synthesis of animal behavior and ethology in development and maintenance of behavioral patterns in individual organisms and social groups. (Prerequisites: PSY 101, BIOL 105, 106 and/or permission of instructor. Next offered: 1996-97.)

PSY 360O 3 Credits Alternate Spring
Psychology of Women Across Cultures (3+0) s
(Same as WMIS 360)
Major theories, research and empirical data which describes the psychology of women as a discrete field, philosophical values of feminism and history of women's roles in society. The impact of culture on women interpersonally and intrapersonally examined across cultures. (Prerequisite: PSY 101 or permission of instructor. Next offered: 1996-96.)

COURSE DESCRIPTIONS / 185
### PSY 370 3 Credits Alternate Fall
**Drugs and Drug Dependence (3+0) s**
(Same as SOC 370)
A multidisciplinary approach emphasizing acute and chronic alcoholism, commonly abused drugs, law enforcement and legal aspects of drug abuse, medical uses of drugs, physiological, psychological and sociological aspects of drug abuse, recommended drug education alternatives and plans, and treatment and rehabilitation of acute and chronic drug users. Also available via Independent Learning. (Prerequisite: PSY 101 or SOC 101 or permission of instructor. Next offered: 1996-97.)

### PSY 380 3 Credits Alternate Fall
**Human Behavior in the Arctic (3+0) s**
Loving systems in Alaska and behavioral characteristics that have to do with stress and isolation. Material includes structural design as related to behavioral research. (Prerequisite: PSY 101. Next offered: 1995-96.)

### PSY 440 3 Credits Alternate Spring
**Learning (3+0) s**
Theory and research on the fundamentals of learning. Topics include animal learning, classical conditioning, instrumental learning, discrimination learning, biological constraints on learning, and cross-cultural differences in learning styles. (Prerequisite: PSY 101. Next offered: 1995-96.)

### PSY 445W 3 Credits Fall
**Community Psychology (2+3) s**
Survey of principles and applications of community psychology, emphasizing person-environment interactions and societal and cultural impacts upon individual and community functioning. Attention given to interventions which facilitate psychological competencies, self-empowerment, prevent disorder and promote social change. Experiential learning emphasized through community experience/volunteer lab requirement. (Prerequisites: PSY 101 and PSY/SOC 330.)

### PSY 455 3 Credits Spring
**Clinical Psychology (2+3)**
Survey of clinical psychology methods and approaches with considerations of psychological assessment and treatment. Topics include specific counseling strategies such as psychoanalysis, behavior therapy, crisis intervention, rational-emotive and humanistic approaches, along with ethics in clinical practice and issues in cross-cultural counseling and psychological assessment and treatment. A clinical lab will allow students to apply their classroom learning and get hands-on experience in clinical skills. (Prerequisites: PSY 240 and PSY 345.)

### PSY 460 4 Credits Alternate Fall
**Physiological Psychology (3+3) n**
An integrated multidisciplinary approach to the study of neuroanatomy and neurophysiology emphasizing the basic principles, cortical and subcortical organization, functional mechanisms, and the physical-chemical foundations in physiological bases of behavior with special reference to neuroanatomy, neurochemistry, and electrophysiological measures employed in the study of behavior and brain activity. Research topics include brain dynamics, the neural bases of learning, the neural substrates of emotion and motivation, states of consciousness, and stress and psychosomatic relationships. (Prerequisite: PSY 101, BIOL 105, 106 or BIOL 211, 212 and/or permission of instructor. Next offered: 1995-96.)

### PSY 470 3 Credits Alternate Spring
**Sensation and Perception (3+0) n**
An integrated psychophysiological inquiry emphasizing principles, functions and organization, fundamental mechanisms, and the structural complexity extant in the sensory physiology of audition, gustation, kinesthesia, olfaction, proprioception, somesthesis, and vision. Theoretical models and systems of perception with reference to biological, cultural, developmental, hereditary, physiological, psychological, and social effects on sensory perceptions. (Prerequisites: PSY 101, PSY 460, and BIOL 105, 106 or BIOL 211, 212 and/or permission of instructor. Next offered: 1995-96.)

### PSY 473W 3 Credits Fall
**Social Science Research Methods (3+0) s**
(Same as SOC 473)
Techniques of social research: sampling, questionnaire construction, interviewing and data analysis in surveys; field and laboratory experiments, and attitude scaling. (Prerequisite: PSY/SOC 250.)

### PSY 475 4 Credits Alternate Spring
**Experimental Psychology (2+6) s**
An integrated approach to the study of experimental psychology. Emphasis on research methodologies and techniques. Design, execution, and analysis of individual projects involving both animal and human subjects. (Prerequisites: PSY 101, PSY/SOC 250 or STAT 200, and PSY/SOC 473. Special permission of instructor is required if prerequisites have not been met. Next offered: 1996-97.)

### PSY 610 3 Credits As Demand Warrants
**Alcohol: Pharmacology and Behavior (3+0)**

### PSY 614 3 Credits Alternate Spring
**Human Adaptation to the Circumpolar North (3+0)**
(Same as NORS 614)

### PSY 615 3 Credits As Demand Warrants
**Drug Action: Physiology and Behavior (3+0)**

### PSY 618 3 Credits As Demand Warrants
**Community Treatment Alternatives (3+0)**

### PSY 620 3 Credits As Demand Warrants
**Treatment of Drug and Alcohol Dependency (3+0)**

### PSY 625 3 Credits As Demand Warrants
**Prevention of Alcohol and Drug Dependency (3+0)**

### PSY 630 3 Credits Fall
**Community Psychology (3+0)**

### PSY 631 3 Credits Spring
**Community Psychology: Cross-cultural Applications and the Ethics of Change (3+0)**

### PSY 635 3 Credits Spring
**Field-Based Research Methods (3+0)**

### PSY 638 3 Credits Alternate Fall
**Proseminar in Community Psychology (3+0)**
(Same as SOC 638)

### PSY 645 3 Credits As Demand Warrants
**Prevention Theories and Strategies (3+0)**
(Same as SOC 645)

### PSY 646 3 Credits As Demand Warrants
**School Counseling (3+3)**
(Same as COUN 646)

### PSY 650 3 Credits As Demand Warrants
**Cross-Cultural Psychopathology (3+0)**

### PSY 655 3 Credits Alternate Spring
**Healing: Implications for Clinical/Community Practice (3+0)**

### PSY 660 3 Credits Fall
**Counseling Theories and Applications (3+0)**
(Same as COUN 663)

### PSY 661 3 Credits Fall
**Cross-Cultural Counseling (3+0)**
(Same as COUN 660)

### PSY 662 3 Credits Alternate Spring
**Counseling Theories and Applications II (3+0)**

### PSY 663 3 Credits Fall
**Clinical Methods and Assessment (3+0)**

### PSY 664 3 Credits As Demand Warrants
**Behavior Therapy (3+0)**

### PSY 665 3 Credits As Demand Warrants
**Psychoanalytic Theory and Clinical Methods (3+0)**

### PSY 666 3 Credits As Demand Warrants
**Family and Network Therapy (3+0)**

### PSY 667 3 Credits As Demand Warrants
**Existential Psychotherapy (3+0)**

### PSY 668 3 Credits Spring
**Crisis Intervention (3+0)**

### PSY 674 3 Credits Spring
**Group Counseling (3+0)**
(Same as COUN 674)

### PSY 677 3 Credits As Demand Warrants
**Psychological Assessment - Intelligence (3+0)**

### PSY 678 3 Credits Spring
**Psychological Assessment - Personality (3+0)**

### PSY 688 Fall, Spring
**Practicum in Community Psychology (2+7)**

### PSY 690 Full, Spring
**Internship in Community Psychology (0+40)**
### Religion

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>As Demand Warrants</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RELG 205</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Introduction to the Bible (3+0) h</td>
</tr>
<tr>
<td>RELG 211</td>
<td>2</td>
<td>As Demand Warrants</td>
<td>Arctic Native Religion: Shamanism (2+0) h</td>
</tr>
<tr>
<td>RELG 221</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Religions of the World (3+0) h</td>
</tr>
</tbody>
</table>

A study of the Bible as literature of ancient Israel and the early Christian Church.
Basic principles and beliefs of Shamanism with emphasis on North American and Arctic Shamanism. Introduction to traditional functions of Shamanism; past and present perceptions of Shamanism.
A survey of the development of major religions of the Eastern and Western world including contemporary world religions.

### Rural Development

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>As Demand Warrants</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RD 200</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Community Development in the North (3+0) s</td>
</tr>
<tr>
<td>RD 245</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Issues in Alaskan Maritime Development (3+0)</td>
</tr>
<tr>
<td>RD 250</td>
<td>1-3</td>
<td>As Demand Warrants</td>
<td>Grant Writing for Community Development (1-3+0)</td>
</tr>
<tr>
<td>RD 255</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Rural Alaska Land Issues (3+0)</td>
</tr>
<tr>
<td>RD 256</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Co-Management of Renewable Resources (1.5+Arr)</td>
</tr>
<tr>
<td>RD 265</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Perspectives on Subsistence in Alaska (3+0) s</td>
</tr>
<tr>
<td>RD 280</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Resource Management Research Techniques (3+0)</td>
</tr>
<tr>
<td>RD 300</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Rural Development in a Global Perspective (3+0-s)</td>
</tr>
<tr>
<td>RD 315</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Tribal People and Development (3+0-s)</td>
</tr>
<tr>
<td>RD 325</td>
<td>3</td>
<td>Spring</td>
<td>Community Development Strategies (3+0-s)</td>
</tr>
</tbody>
</table>

Examines rural community development efforts in circumpolar countries and the impact of these efforts on Northern communities and indigenous peoples.
Introduction to the current concepts, strategies, and issues of maritime development in Alaska, including community development, fisheries quotas and sustainable development efforts. Emphasis on environmental and cultural impact assessments of maritime development. (Prerequisite: ENGL 111X. Next offered: 1996-97.)
Focuses on basic elements of grant proposals and processes of preparing proposals for governmental and private funding sources. Emphasis on applied skills through preparation of actual grant proposals.
The history and significance of ANCSA, ANILCA and other land issues in rural areas of Alaska.
Examines efforts of cooperative management of natural resources among users and federal and state management agencies. Recent initiatives in Alaska and Canada involving salmon, migratory birds, marine mammals, and brown bear discussed.
Examines the socio-economic, cultural, legal and political dimensions of subsistence in Alaska.
Overview of standard methods of field-based scientific research conducted by resource management agencies in rural Alaska including elementary statistical concepts, survey techniques, and tools used in land and renewable resources research. (Prerequisites: NRM 101 and BIOL 104X.)
A comparative and theoretical approach to the process of change and development in cross-cultural contexts, particularly in relation to their effects on rural communities. (Prerequisite: Junior standing or permission of instructor.)
Comparative examination of socio-economic development processes on tribal peoples in third and fourth world societies. Attention to implications of these processes for Alaska Native people. (Prerequisite: Junior standing or permission of instructor. Next offered: 1995-96.)
Examines community development/organizational strategies appropriate for a variety of institutional and community situations.

### Rural Human Services

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Alternate Semesters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHS 110</td>
<td>2</td>
<td>Alternate Semesters</td>
<td>Cross-Cultural Bridging Skills (2-1)</td>
</tr>
<tr>
<td>RHS 115</td>
<td>2</td>
<td>Alternate Semesters</td>
<td>Issues of Personal Development in the Delivery of Rural Human Services (2+1)</td>
</tr>
</tbody>
</table>

Issues and impacts relevant to effective cross-cultural communication. Understanding barriers to effective cross-cultural communication in rural settings and development of effective cross-cultural communication skills from a Native perspective. Development of bridging and networking skills that integrate Native values and principles. Student must spend one week in intensive study at selected delivery site.
Dynamics and impacts of personal development issues relevant to the delivery of rural human services focusing on understanding types, application, and processes of personal development. Facilitating personal development through processes that integrate or reflect Native values and principles. Student must spend one week in intensive study at selected delivery site.
RHS 120 2 Credits Alternate Semesters
Family Systems I (2+1)
Survey of historical forces that exerted influence on Alaska Native families, the impacts of those forces, and discussion of their contemporary effects from a Native perspective. Focus on developing options and strategies for developing healthy Native families as the foundation for healthy Native communities. Emphasis on developing the understanding and skills necessary to facilitate development and maintenance of healthy families through healthy individuals. Student must spend one week in intensive study at selected delivery site.

RHS 130 2 Credits Alternate Semesters
Processes of Community Change (2+1)
Contemporary foundations of rural social development and relevant issues from a Native perspective. Developing the understanding and skills necessary for facilitating positive individual, family, and community development based on an ecological systems approach. Emphasis on developing the skills necessary to identify, develop, and mobilize individual, family, and community resources in rural Native communities. Student must spend one week in intensive study at selected delivery site.

RHS 140 2 Credits Alternate Semesters
Alaska Native Values and Principles (2+1)
Traditional Native values and principles, their applicability to today's world, and issues relevant to their integration into today's lifestyles. Developing understanding and skills necessary for facilitating formulation of positive world views within Native individuals, families, and communities. Emphasis on developing an understanding of self-appreciation, value development, and the growth of spirituality as a value. Development and skills necessary to integrate Native healing theory and problem solving into the delivery of rural human services. Student must be willing and able to work independently outside the classroom and in the community.

RHS 150 2 Credits Alternate Semesters
Introduction to Rural Counseling (2+1)
Identification and examination of issues relevant to the delivery of rural counseling services focusing on developing the understanding and skills necessary for the effective delivery of rural counseling services. Opportunities for development of basic rural counseling skills with emphasis on integration of Native values and principles and exploring strategies that facilitate positive individual, family, and community growth and development through enhancement of healthy lifestyles in rural Native communities. Student must spend one week in intensive study at selected delivery site.

RHS 220 2 Credits Alternate Semesters
Family Systems II (2+1)
The dynamics and issues relevant to personal healing and recovery from a Native perspective focusing on developing the understanding and skills necessary to healing and recovery in Native individuals, families, and communities. Emphasis on developing understanding and skills through self-understanding based on truth, griev­ing, and positive proactive repositioning. Student must spend one week in intensive study at selected delivery site.

RHS 250 2 Credits Alternate Semesters
Rural Counseling II (2+1)
An examination and discussion of the differences and similarities between Native and Western counseling skills. Identifies and examines issues relevant to the development and delivery of basic rural counseling skills and services. Focuses on identifying and building on individual, family, and community strengths as the foundation for development of intervention strategies. Addresses the importance of integrating Native traditional values and principles into intervention strategies and service delivery. Emphasis on developing and enhancing basic rural counseling skills and short- and long-term intervention strategies. Student must spend one week in intensive study at selected delivery site.

RHS 260 2 Credits Alternate Semesters
Addictions: Intervention and Treatment (2+1)
Dynamics, issues, impacts, treatment options, and intervention strategies relevant to behavioral and chemical addictions. Understanding addictive processes and developing treatment options and intervention strategies from a Native perspective. Emphasis on development of treatment options and intervention strategies that integrate Native values and principles. Student must spend one week in intensive study at selected delivery site.

RHS 265 2 Credits As Demand Warrants
Interpersonal Violence (2+1)
Types, causes, and impacts of interpersonal violence focusing on developing an understanding of interpersonal violence and development of treatment options and intervention strategies from a Native perspective. Emphasis on development of treatment options and intervention strategies that integrate Native values and principles. Student must spend one week in intensive study at selected delivery site.

RHS 270 2 Credits Alternate Semesters
Networks, Negotiating, and Conflict Resolution (2+1)
The dynamics of networking, negotiation, and conflict resolution from a Native perspective. Focusing on Alaska Native individuals, families, and communities, identification, examination and discussion of issues relevant to developing effective communication skills. Emphasis on identifying and understanding issues impacting conflict resolution, focusing on developing and strengthening networking and negotiating skills relevant to the delivery of effective rural human service. Student must spend one week in intensive study at selected delivery site.

RHS 285 2 Credits Alternate Semesters
Case Management (2+1)
Identification and discussion of issues, components, procedures, responsibilities, skills, and processes for case management in rural settings with diverse populations. Emphasis on case management processes unique to rural and village Alaska and to the fields of mental health, addictions, and interpersonal violence. Oral and written communication skills essential to effective case management explored. Student must be willing and able to work independently outside the classroom and in the community.

RHS 287 4 Credits Alternate Semesters
Rural Human Services Practicum
Taken as part of the final sequence of courses in the Rural Human Services Certificate Program, practicum provides students with 100 hours of supervised learning experience in an approved rural human service organization/agency. Provides students with opportunities for personal and professional development, self-analysis, growth of skills, and experiences in case management processes. Student must spend one week in intensive study at selected delivery site.

RHS 288 1 Credit Alternate Semesters
Directed Study: Resource Assessment (1+1)
Provides students with an opportunity to demonstrate an ability to develop, implement, and evaluate a village-based community development project through a supervised, professional experience. Focus on developing positive, effective, meaningful development projects that are culturally appropriate. Emphasis on developing a process that facilitates community ownership and responsibility for the project. Student must be willing and able to work independently outside the classroom and in the community.

RHS 289 1 Credit Alternate Semesters
Directed Study: Community Development (1+1)
Provides students with an opportunity to demonstrate an ability to develop, implement, and evaluate a village-based community development project through a supervised, professional experience. Focus on developing positive, effective, meaningful development projects that are culturally appropriate. Emphasis on developing a process that facilitates community ownership and responsibility for the project. Student must be willing and able to work independently outside the classroom and in the community.

RHS 290 2 Credit As Demand Warrants
Grief and Healing (2+1)
Exploration of the dynamics of grief and healing from an Alaska Native perspective. Special emphasis on Native values and principles focused on developing culturally relevant, understandings, awareness, and professional skills. (Prerequisites: Concurrent enrollment in RHS 220; 250; 260.)

Russian

For information on studying in Russian-speaking countries, see Study Abroad; on compulsory placement tests, see Course Placement; on "bonus credit", see Alternative Ways to Earn Credit.

RUSS 075 3 Credits As Demand Warrants
RUSS 076 3 Credits As Demand Warrants
Conversational Russian I and II (3+0)
An introductory course for students who wish to acquire the ability to speak Russian. Students first learn to understand simple spoken language, then to speak simple Russian developing a beginning level of communicative competence in the language. (Prerequisite: RUSS 075 for 076.)

RUSS 100A 3 Credits Fall
RUSS 100B 3 Credits Spring
Beginning Russian I and II (3+0)
An introductory course in the Russian language and culture with an emphasis on the spoken and written language. After completion of RUSS 100A and 100B the student will be able to continue on to RUSS 102. Note: Both RUSS 100A and RUSS 100B must be taken to equal one semester of the foreign language core requirement.
SCIA 130  1 Credit  As Demand Warrants
Moose Ecology (1+0)
Natural history of moose, the ecological concepts of energy flow, nutrient cycling, food webs and population dynamics. Attention to the Seward Peninsula moose population and factors used in making wildlife management decisions.

SCIA 150  1 Credit  As Demand Warrants
Subarctic Horticulture (0+3)
Soils, plant propagation, disease and insect control, variety selection, fertilization, greenhouse construction, and care and gardening techniques. Emphasis on development and care of greenhouses and gardens in the Nome area.

SCIA 157  1 Credit  As Demand Warrants
Alaska Plants (1+0) n
Introduction to the topics of plant taxonomy and identification with specific reference to common Alaskan plants and vegetation types. (Next offered: Fall 1994.)

SCIA 161  1 Credit  As Demand Warrants
Birds of Alaska (1+0)
Biology of birds including behavior, anatomy, physiology, ecology, systematics and field identification.

SCIA 162  1 Credit  As Demand Warrants
Mammals of Alaska (1+0) n
Introduction to the mammals of Alaska and their importance to the local ecology and economy from a scientific research standpoint. Emphasis on important or common species for study of classification, habitat, life cycle and economic importance. (Prerequisite: Background or interest in general science or natural history or permission of instructor. Next offered: Fall 1994.)

SCIA 230  2 Credits  As Demand Warrants
Biological and Management of King Crab in Norton Sound (1+3)
Anatomy, physiology and ecology of the King Crab. Topics include scientific methodology, field biologist's duties and problems of fishery management. Students work with Alaska Department of Fish and Game biologists in an ongoing study. Six-student limit in lab; may register for lecture portion only.

SCIA 251  3 Credits  As Demand Warrants
Horticultural Science in a Subarctic Environment (2+3)
Plant anatomy, physiology, genetics, ecology, propagation, insect and disease control, soils, greenhouse construction and care and gardening techniques. Students will develop and conduct a horticultural research project in the Nome area.

Social Work

SWK 103  3 Credits  Fall, Spring
Social Work in the Human Services (1+0)
Introduction to the profession of social work and the human services delivery system. Examines historical development of social work focusing on the knowledge, values, and skills that characterize the social worker. Orientation to the context for social work, including the diversity of human needs, human services, social policy and legislation. Services, programs, and career opportunities within rural and urban Alaska, as well as nationally, are discussed.

SWK 225  2 Credits  As Demand Warrants
Case Management (2+0)
(Same as HMSV 225)
Basic knowledge and skills to develop service plans in human service work and to maintain appropriate case records. Legal and ethical issues in case management considered and discussed. (Prerequisite: PSY 101, SOC 101, or permission of instructor.)

SWK 303  3 Credits  As Demand Warrants
Indian Child Welfare Act: Origins and Implementation (3+0)
Examination of the social and political conditions affecting the enactment and implementation of the Indian Child Welfare Act, including legal interpretations, provisions, amendments, implementations, and applications in Alaska. (Prerequisites: SWK 103.)

SWK 306  3 Credits  Fall
Social Welfare: Policies and Issues (3+0)
Social policies and how they effect the delivery of social services. Factors influencing development of the current social service system. Analysis of dilemmas which develop in a welfare system attempting to deal with rapid social change. Alternative approaches to the solution of social problems and possible future developments. (Prerequisites: SWK 103, SOC 100X, ECON/PS 100X.)

SWK 320  3 Credits  Spring
Rural Social Work (3+0)
Preparation for practice in rural areas characterized by the need for multiple delivery systems, unique local customs, and inadequate resources. Emphasis on preparation for practice nationally with unique features of Alaska incorporated at key points. (Prerequisites: SWK 103, SOC 100X.)
### Sociology

**SOC 100X**  3 Credits  Fall

*Individual, Society and Culture (3+0)*  
An examination of the complex social arrangements guiding individual behavior and common human concerns in contrasting cultural contexts. Also available via Independent Learning and via the television as a self-paced, computer-aided course. Special telecourse fee: $30.00.

**SOC 101**  3 Credits  Fall, Spring

*Introduction to Sociology (3+0)*  
The science of the individual as a social being, emphasizing the interactional, structural, and normative aspects of social behavior. An attempt is made to construct a cross-cultural framework in understanding and predicting human behavior. Also available via Independent Learning or via television as a self-paced, computer-aided course; special telecourse fee: $30.00.

**SOC 160**  3 Credits  As Demand Warrants

*Current Woman (3+0)*  
Explores both past history and current influences on Feminist Movement. Changing personal, sexual, family, economic and political roles of women. Emphasizes psychological impact of these changes on women's lives today.

**SOC 201**  3 Credits  Fall

*Social Problems (3+0)*  
A study of major contemporary social problems, analysis of factors causing these problems. Emphasis on cross-cultural differences in Alaska and other parts of the world. Also available via television as a self-paced, computer-aided course; special telecourse fee: $30.00.

**SOC 242**  3 Credits  Spring

*The Family: A Cross-Cultural Perspective (3+0)*  
Contemporary patterns of marriage and family relationships. Developmental, systemic, and social psychological approaches used to analyze these relationships. Family life cycle stages examined include mate selection, marriage, early marital interaction, parenthood, the middle and later years, and possible dissolution. Attention given to cross-cultural differences in Alaska as well as in other parts of the world. Also available via Independent Learning. (Prerequisite: SOC 101 or permission of instructor.)

**SOC 250**  3 Credits  Fall, Spring

*Introductory Statistics for Behavioral Sciences (3+0)*  
(Same as PSY 250)

Purposes and procedures of statistics; calculating methods for the description of groups (data reduction) and for simple inferences about groups and differences between group means. (Prerequisite: MATH 107 or equivalent.)

**SOC 301**  3 Credits  Spring

*Rural Sociology (3+0)*  
Social processes, changing values, economic development, demographic change, agrarian reforms, planned change, and rural community networks. Part of focus on rural communities of Alaska. Special telecourse fee: $30.00. (Prerequisite: SOC 101 or permission of instructor.)

**SOC 307**  3 Credits  Fall

*Demography (3+0)*  
A study of formal demographic variables such as fertility, mortality, and migration and their interaction with social demographic variables like social class, religion, race, residence, attitudes, and values. Aslanan population dynamics examined.

**SOC 309**  3 Credits  As Demand Warrants

*Urban Sociology (3+0)*  
Origin and development of urban society as an industrial-ecological phenomenon; the trends of migration and urbanization with futuristic implications; and the urban-rural dichotomy in the Alaskan context.

**SOC 310**  3 Credits  Alternate Spring

*Sociology of Later Life (3+0)*  
An analysis of the social status and role of the aging in America, with comparisons with elderly in Alaska as well as elsewhere. (Prerequisite: SOC 101. Next offered: 1995-96.)

**SOC 330**  3 Credits  Spring

*Social Psychology (3+0)*  
(Same as PSY 330)

Analysis of intergroup relationships in terms of process and value orientation, their influence on the personality, and aspects of collective behavior on group and person. Aspects of social interaction that have cultural and intercultural variation. (Prerequisite: SOC 101 or PSY 101.)

**SOC 335**  3 Credits  Fall

*Sociology of Deviant Behavior (3+0)*  
A study of the causes of deviant behavior, both criminal and non-criminal, with emphasis on the nature of social interaction in the examination of the social control groups and institutions. (Prerequisite: SOC 101.)

**SOC 345**  3 Credits  As Demand Warrants

*Sociology of Education (3+0)*  
(Same as ED 345)

The influence of social, political, and economic forces upon schools. Examines how school organization affects teaching practices, how peer groups affect student learning, and how national political and economic concerns determine what becomes an educational issue. (Prerequisites: SOC 101 and junior standing.)

**SOC 363**  3 Credits  Fall

*Social Stratification (3+0)*  
The differential distribution of social power, privilege, and life chances in class and caste as the basis for social organization. Emphasis on occupational, educational, and other correlates which determine social structure. Also includes a comparative study of class and caste in India and the United States. (Prerequisite: SOC 101.)
SOC 370 3 Credits Alternate Fall
Drugs and Drug Dependence (3+0) s
(Same as PSY 370)
A multidisciplinary approach emphasizing acute and chronic alcoholism, communally abused drugs, law enforcement and legal aspects of drug abuse, medical uses of drugs, physiological, psychological and sociological aspects of drug abuse, recommended drug education alternatives and plans, and treatment and rehabilitation of acute and chronic drug users. Also available via Independent Learning. (Prerequisite: PSY 101 or SOC 101 or permission of instructor. Next offered: 1995-96.)

SOC 402 3 Credits Spring
Theories of Sociology (3+0) s
Major sociological theories and theorists of Western civilization. Review of important contributions and approaches of various "national schools" with emphasis on current American and European trends. (Prerequisite: SOC 101.)

SOC 405 3 Credits
Social Change (3+0) s
Philosophy and change and its affiliation to socio-cultural change in terms of history, technology, axiology, and social movement. (Prerequisite: SOC 101 or permission of instructor.)

SOC 407 3 Credits Alternate Fall
Formal Organization (3+0) s
Theoretical and analytical approaches to the study of contemporary complex formal organizations, including their coordination, status and role interrelationships, and their diverse publics. Formal organizations unique to Alaska's multicultural population considered. (Prerequisite: SOC 101. Next offered: 1995-96.)

SOC 408 3 Credits Alternate Fall
American Minority Groups (3+0) s
An examination of the status of minority groups and intergroup relations in America, including changes in sociological, economic and political status. Theories and concepts of minority role behavior and intergroup relationships are applied to American and Alaskan racial and ethnic groups. Special telecourse fee: $30.00. (Prerequisite: SOC 101. Next offered: 1995-96.)

SOC 473W 3 Credits Fall
Social Science Research Methods (3+0) s
(Same as PSY 473.)
Techniques of social research: sampling, questionnaire construction, interviewing and data analysis in surveys; field and laboratory experiments, and attitude scaling. (Prerequisite: PSY/SOC 250.)

SOC 638 3 Credits Alternate Fall
Proseminar in Community Psychology (3+0) s
(Same as PSY 638.) Materials fee: $3.00. (Prerequisite: SOC 101. Next offered: 1995-96.)

SOC 645 3 Credits Alternate Fall
Prevention Theories and Strategies (3+0) s
(Same as PSY 645.) Materials fee: $3.00. (Prerequisite: SOC 101. Next offered: 1995-96.)

Spanish

For information on studying in Spanish-speaking countries, see Study Abroad; on compulsory placement tests, see Course Placement; on "bonus credit," see Alternative Ways to Earn Credit.

SPAN 075 3 Credits As Demand Warrants
SPAN 076 3 Credits As Demand Warrants

Conversational Spanish I and II (3+0) s
An introductory course for students who wish to acquire the ability to speak Spanish. Students first learn to understand simple spoken language, then to speak. Simple Spanish developing a beginning level of communicative competence in the language. (Prerequisite: SPAN 075 or 076.)

SPAN 100A 3 Credits As Demand Warrants
SPAN 100B 3 Credits As Demand Warrants

Beginning Spanish I and II (3+0) s
An introductory course in the Spanish language and culture with an emphasis on spoken and written language. After completion of SPAN 100A and 100B the student will be able to continue on to SPAN 102. Note: Both SPAN 100A and SPAN 100B must be taken to equal one semester of the foreign language core requirement.

SPAN 101 5 Credits Fall
Elementary Spanish I and II (5+0) h
Introduction to the language and culture: development of competence and performance in the language through understanding, recognition and use of linguistic structures, increasing emphasis on listening comprehension and speaking; basic vocabulary of approximately 1000 words; exploration of the cultural dimension, implicitly through language and explicitly through texts and audiovisual materials. Materials fee: $3.00. (Prerequisite for SPAN 102: SPAN 101 or SPAN 100A or SPAN 100B or the equivalent.)

SPAN 113 3 Credits As Demand Warrants
Spanish for Tourists (3+0) h
For students with no background in Spanish who wish to learn useful phrases and basic language. Cultural and travel information on Spain and Latin America.

SPAN 201 3 Credits Fall
SPAN 202 3 Credits Spring
Intermediate Spanish I and II (3+0) h
Continuation of SPAN 102. Increasing emphasis on reading ability and cultural material. Conducted in Spanish. Materials fee: $5.00. (Prerequisite: SPAN 102 or equivalent.)

SPAN 301 3 Credits Fall
SPAN 302 3 Credits Spring
Advanced Spanish (3+0) h
Discussions and essays on more difficult subjects or texts. Translations, stylistic exercises, and special grammatical problems. Conducted in Spanish. Materials fee: $5.00. (Prerequisite: SPAN 202 or equivalent or instructor permission.)

SPAN 431 3 Credits Fall
Studies in the Culture of the Spanish Speaking World (3+0) s
Study of the cultures of the Spanish speaking world. Conducted in Spanish. Students may repeat course for credit if topic varies. Materials fee: $3.00. (Prerequisites: SPAN 302 or equivalent; junior standing or permission of instructor.)

SPAN 432 3 Credits Spring
Studies of Literature in Spanish (3+0) h
Intensive study of authors, literary texts, movements, genres and/or critical approaches. Conducted in Spanish. Students may repeat course for credit when topics vary. Materials fee: $3.00. (Prerequisites: SPAN 302 or equivalent and at least junior standing and permission of instructor.)

SPAN 482 3 Credits As Demand Warrants
Selected Topics in Spanish (3+0) h
Intensive course focusing on topics not covered in SPAN 431 or SPAN 432. Course may be repeated for credit if topics vary. Materials fee: $4.00. (Prerequisites: SPAN 302 or equivalent; junior standing, or permission of instructor. Next offered: Spring 1996.)

SPAN 488 3 Credits As Demand Warrants
Individual Study: Senior Project h
Designed for the student to demonstrate ability with the language and the culture through the analysis and presentation, in Spanish, of a problem chosen by the student in consultation with the department. The student must apply for senior project and submit a project outline by the end of the 6th week of the semester preceding the semester following the student's graduation. Conducted in Spanish. (Prerequisite: At least 10 credits in upper division Spanish or permission of instructor.)

Statistics

STAT 200 3 Credits Fall, Spring
Elementary Probability and Statistics (3+0) h
Descriptive statistics, frequency distributions, sampling distributions, elementary probability, estimation of population parameters, hypothesis testing (one- and two-sample problems), correlation, simple linear regression, and one-way analysis of variance. Parametric and nonparametric methods. Materials fee: $10.00. (Prerequisites: MATH 107, 161, 181 or consent of instructor)

STAT 300 3 Credits Spring
Statistics (3+0) h
A calculus-based course emphasizing applications. Topics include probability, point and interval estimation including maximum likelihood, one and two sample hypothesis tests including likelihood ratio tests, simple linear regression, and one-way analysis of variance. A student may not use STAT 200 and 300 to meet the requirement of a year's sequence course in statistics. (Prerequisite: MATH 200, 262, 272 or equivalent.)
STAT 401  4 Credits  Fairbanks, Juneau
Regression and Analysis of Variance (3+3)
A thorough study of multiple regression including multiple and partial correlation, the extra sum of square principle, indicator variables, and model selection techniques. Analysis of variance and covariance for multifactor studies in completely random and randomized complete block designs, multiple comparisons and orthogonal contrasts, Materials fee: $10.00. (Prerequisite: STAT 200 or STAT 373 J or STAT 300 or consent of the instructor.)

STAT 402  3 Credits  Fall
Scientific Sampling (3+0)
Sampling methods, including simple random, stratified and systematic; estimation procedures, including ratio and regression methods; special area and point sampling procedures; optimum allocation. Materials fee: $10.00. (Prerequisite: STAT 200 or STAT 300 or consent of the instructor.)

STAT 461  3 Credits  Alternate Spring
Applied Multivariate Statistics (3+0)
Estimation and hypothesis testing, multivariate normality and its assessment, multivariate one and two sample tests, confidence regions, multivariate analysis of variance, discrimination and classification, principal components, factor analysis, clustering techniques, and graphical presentation. Statistical computing packages utilized in assignments. Materials fee: $10.00. (Prerequisite: STAT 401 or consent of instructor. Next offered: 1995-96.)

STAT 602  3 Credits  Fairbanks, Alternate Spring
Experimental Design (3+1)
Juneau, As Demand Warrants

STAT 621  3 Credits  Fairbanks, Alternate Fall
Distribution-Free Statistics (3+2)
Juneau, As Demand Warrants

STAT 631  3 Credits  Alternate Fall
Categorical Data Analysis (3+0)

STAT 640  3 Credits  Fairbanks and Juneau
Exploratory Data Analysis (2+2)
As Demand Warrants

STAT 661  3 Credits  Fairbanks, Alternate Spring
Sampling Theory (3+0)
Juneau, As Demand Warrants

STAT 680  3 Credits  Alternate Fall
Data Analysis in Biology (2+3)
(Same as BIOL 680 and WLF 680)

Note: The following courses are statistical in orientation. A description and listing of prerequisites for undergraduate courses may be found in the appropriate departmental course listings.

ANTH 421 - Analytical Techniques
BA 350 - Production/Operations Management
ECON 227 - Intermediate Statistics for Economics and Business
ECON 626 - Econometrics
EM 621 - Operations Research
FISH 601 - Quantitative Fisheries Science
GEOS 430 - Statistical and Data Analysis in Geology
MATH 371 - Probability
MATH 408 - Mathematical Statistics
PSY 250 - Introductory Statistics for Behavioral Sciences
WLF 621 - Vertebrate Population Dynamics

Theatre

THR 101, 201
THR 301, 401  1-3 Credits  Fall, Spring
Theatre Practicum (0+Var.) h
Participation in drama workshop or lab production as performer or technical staff member. Credit in this course may not be applied to a major program in theatre.

THR 121  3 Credits  Fall, Spring
Fundamentals of Acting (3+0) h
Basic stage acting techniques for persons with little or no prior acting experience. Emphasis on physical, emotional and imaginative awareness. Scene work fundamentals introduced.

THR 161  3 Credits  Fall
Introduction to Tuna Theatre (2+3) h
(Same as ANS 161)
For Native and non-Native students with no prior acting or theatre experience. Includes both academic and practical components to examine traditional Alaska Native theatre mythology, ritual, ceremony and performance methods. Application of exercises and developmental scenes drawn from the Alaska Native heritage.

THR 206X  3 Credits  Fall, Spring
Aesthetic Appreciation: Interrelation of Art, Drama, and Music (3+0) h
(Same as ART 200X and MUS 200X)
Understanding and appreciation of art, drama, and music through an exploration of their relationship. Topics include the creative process, structure, cultural application and diversity, the role of the artist in society, and popular movements and trends. Materials fee: $25.00. (Prerequisite: Sophomore standing or permission of instructor.)

THR 212  3 Credits  As Demand Warrants
Russian Theatre and Culture (3+0) h
Classes in Russian art and theatre; tour of St. Petersburg museums; attendance of theatre performances, workshops and lectures given by leading figures in the theatre and arts in Russia. Translation provided for lectures and workshops. (Prerequisites: Basic course in theatre and/or a background working in theatre. Letter of application and resume required. Russian language desirable but not necessary. Next offered: Summer 1993.)

THR 215  3 Credits  Fall
Dramatic Literature (3+0) h
Studies of drama and forms of plays such as tragedy, comedy, melodrama, farce, tragic comedy. Reading plays of the classic theatre designed to give basic knowledge of masterpieces of the world drama.

THR 220  3 Credits  As Demand Warrants
Voice and Diction for the Theatre (2+2)
Development of fluency and clarity in the voice, study and practice to improve speech and eliminate faults of articulation and pronunciation. Emphasis on preparing the student for vocal work in theatre, radio, and television, including individual analysis and tape recordings. (Prerequisite: Any 100 level oral communication course or permission of instructor.)

THR 221  3 Credits  Spring
Intermediate Acting (3+4) h
Continued development of physical, emotional and imaginative awareness. Text and character analysis, scene and monologue study and presentation. Introduction to improvisation. (Prerequisite: THR 212 or permission of the instructor.)

THR 225  3 Credits  Alternate Spring
Movement for the Actor (1+4) h
Principles of stage movement, body awareness, and control as explored through analysis, exercise, study of historical dance and scene work. (Next offered: 1995-96.)

THR 241  3 Credits  Fall
Basic Stagecraft (2+2) h
Materials of scene construction and painting and their use.

THR 245  3 Credits  Fall
Stage Management (3+4) h
Organizational skills for a successful stage manager, completion of a prompt script including creating all forms and schedules necessary, working with actors, directors and designers. (Prerequisites: THR 121, THR 211, THR 241 or permission of instructor.)

THR 247  3 Credits  Fall
Introduction to Theatrical Design (3+0) h
Introduction to all the design elements used in the theatre. Analysis of line, texture, color, and how they relate to designing for the theatre including costumes, scenery and lighting.

THR 254  3 Credits  Fall, Spring
Beginning Costume Design and Construction (3+4) h
Introduction to theory and practice of costume design for the theatre, methods used to make costumes out of a variety of media. Projects include simple hatmaking, maskmaking, stenciling, hot gluing and body padding.

THR 311  3 Credits  Alternate Spring
Theatre Management (2+3) h
Introduction to the organizational, economic, and administrative aspects of theatre. Focus on ticket sales, budgeting, and promotion. (Prerequisite: 6 credits in theatre and completion of MATH 131. Next offered: 1995-96.)

THR 312W  3 Credits  As Demand Warrants
Moscow-St. Petersburg: Russian Theatre Today (3+0) h
Introduction to the present state of theatre in Russia; study of performances of theatre by companies in Russia; master classes and workshops with leading Russian theatre professionals and scholars. (Prerequisites: THR 200X or THR 211 or demonstrated equivalent experience in theatre study.)

THR 321O  3 Credits  Alternate Fall
Advanced Acting I (1+4) h
Refinement of physical, emotional and imaginative awareness. Introducing a variety of character building methods. Study and performance of scenes and short plays. Introduction of audition techniques. (Prerequisite: THR 221, or permission of the instructor. Next offered: 1995-96.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Term/Alternate</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>THR 325</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Theatre Speech (2+2) h Vocal techniques for actors. Standard stage direction and foreign dialects. (Prerequisite: THR 221 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 329</td>
<td>3</td>
<td>Fall</td>
<td>Children's Theatre (1+6) h Rehearsal and performance of children's plays. Rehearsals during the first half of the semester will be followed by performances. Emphasis on audience-actor relationship and performance style for the child audience. (Prerequisites: Audition, THR 121, THR 221, or permission of instructor.)</td>
</tr>
<tr>
<td>THR 331</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Fundamentals of Stage Direction (1+4) h Introduction to the history, theory, basic concepts of stage direction, interpretive script analysis, creative visualization, conceptualization, use of space, working with actors and designers. Direction of short scenes and plays. (Prerequisite: THR 221 or permission of instructor. Next Offered: 1995-97.)</td>
</tr>
<tr>
<td>THR 341</td>
<td>3</td>
<td>Spring</td>
<td>Intermediate Stagecraft (2+2) h An examination of the less common scenic materials with methods and techniques for their use. Students will spend approximately $40 for materials. (Prerequisite: THR 241 or permission of instructor.)</td>
</tr>
<tr>
<td>THR 343</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Scene Design (3+0) h Principles and techniques of theatrical scene design. Includes designing projects directed at solving particular scenic problems or in a specific scenic style with specific physical limitations. Materials fee: approximately $40. (Prerequisite: THR 241 or permission of the instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 347</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Lighting Design (3+0) h Principles and techniques of theatrical lighting design. The student will conduct practical experiments and design projects applying the experience gained from the experiments. Materials fee: approximately $40. (Prerequisite: THR 343 or permission of the instructor. May be taken concurrently with THR 343. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 348</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Sound Design in the Theatre (2+2) h Exploration and application of the elements of design as they relate to sound for theatre, dance, other art forms, and life in American and other cultures. Production work is required. (Prerequisite: THR 241 or permission of the instructor. Next offered: 1997-98.)</td>
</tr>
<tr>
<td>THR 351</td>
<td>3</td>
<td>Spring</td>
<td>Makeup for Theatre (1+4) h Theatrical makeup for actors, teachers, directors, and other theatre workers; makeup materials and use, straight and character makeup, illusion and plastic relief, national types, and influence of lighting. Materials fee: approximately $85. (Prerequisite: Any lower division theatre course or permission of the instructor.)</td>
</tr>
<tr>
<td>THR 355</td>
<td>3</td>
<td>Fall</td>
<td>History of Fashion and Dress (3+0) s Social history of costume in Western Civilization, from Ancient Greece to the present time. Includes instruction in the methods of research used to find visual source materials, and assignments that exercise these research skills. (Prerequisite: HIST 101 or HIST 102 or permission of the instructor.)</td>
</tr>
<tr>
<td>THR 361</td>
<td>3</td>
<td>Spring</td>
<td>Advanced Alaska Native Performance (2+3) h In-depth study of Alaska Native theatre techniques and technique, including traditional dance, song and drumming techniques, mask characterizations and performance application and presentation of a workshop production developed by the students during the semester. (Prerequisite: ANS/THR 161.)</td>
</tr>
<tr>
<td>THR 380</td>
<td>3</td>
<td>Alternate Years</td>
<td>Film and Video Directing (1+6) h Introduction to the history, theory, basic concepts of film and video direction, script preparation, story board, blocking actors and staging the camera, sound, editing, direction and shooting short videos. (Prerequisite: THR 331 or ENGL 217 or permission of instructor. Next offered: 1996-97.)</td>
</tr>
<tr>
<td>THR 411</td>
<td>3</td>
<td>Alternate Years</td>
<td>Theatre History I (3+0) h Theatrical form and practice from its origins in story telling and ritual through the French Neoclassic Theatre. (Prerequisites: Junior standing and THR 211 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 412W</td>
<td>3</td>
<td>Alternate Years</td>
<td>Theatre History II (3+0) h Theatrical form and practice from the English Restoration through the present. (Prerequisites: Junior standing and THR 211 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 413W</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Playscript Analysis (3+0) h Investigation of the structure of play scripts designed to develop skills in analysis and interpretation for performance. (Prerequisites: Junior standing, THR 211 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 416W</td>
<td>6</td>
<td>As Demand Warrants</td>
<td>Lab Theatre I &quot;Write Theatre&quot; (3+9) h (Same as NORS 616) An intensive course for actors, directors and playwrights interested in script development/training with the participation of Russian professionals. Experience working in a multicultural environment developing new scripts up to stage readings. Selected dramatic material will be workshoped under Russian and/or American directors. Work required: dramatic scenes, writing, acting, keeping a journal. (Prerequisites: Basic theatre classes/training. Letter of application and resume. Russian language desired but not necessary.)</td>
</tr>
<tr>
<td>THR 418</td>
<td>6</td>
<td>As Demand Warrants</td>
<td>Lab Theatre II &quot;Do Theatre&quot; (3+6) h (Same as NORS 618) Production oriented course for actors, directors, stage managers, technical directors, and designers. Hands-on experience in a professional environment for a multicultural audience, with a mixed Russian and American cast and crew. Exposure to new artistic concepts and production traditions through search for theatricality and visualization in performance. Includes a one week run of each show within a repertory season. (Prerequisites: Basic acting and/or technical courses. Letter of application and resume. Russian language desired but not necessary.)</td>
</tr>
<tr>
<td>THR 421</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Advanced Acting I (1+4) h Acting techniques for periods and styles. Intensive scene and monologue work. Introduction of ensemble work. Public performance of short plays. Intensive audition work. (Prerequisite: THR 221 or permission of the instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 435</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Advanced Stage Direction (1+4) h Major theories and current trends in stage direction including different styles, periods and stage configurations. Emphasis on practical preparation for production, from concept to execution, of a one act play for public performance. (Prerequisite: THR 331 or permission of instructor. Next offered: 1995-96.)</td>
</tr>
<tr>
<td>THR 437</td>
<td>3</td>
<td>Alternate Fall</td>
<td>Lighting Design II (2+2) h Further exploration and application of elements of design (color, texture, intensity, line, composition) as they relate to lighting for theatre, dance, other art forms, and life. Production work required. (Prerequisite: THR 347 or permission of the instructor. Next offered: 1997-98.)</td>
</tr>
<tr>
<td>THR 456</td>
<td>3</td>
<td>Spring</td>
<td>Advanced Costume Design and Construction (3+0) h Examination of the methods and materials used in the design and construction of costumes for the theatre. Special projects in design, pattern drafting, and advanced construction. (Prerequisite: THR 254 or permission of instructor.)</td>
</tr>
<tr>
<td>THR 461</td>
<td>3</td>
<td>Spring</td>
<td>Tuma Theatre Seminar (2+4) h Advanced study and application of Alaska Native Performance techniques. Active participation in playwriting, acting, directing or designing in the development and performance of either a workshop or fully mounted Tuma Theatre production. (Prerequisites: ANS/THR 161, ANS/THR 361 or permission of instructor.)</td>
</tr>
<tr>
<td>THR 480</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Thesis in Northern Theatre (2+4) h Specialized and applied research may include Tuma Theatre play direction, playwriting, design, acting in a major role, or other research relevant to the study of Northern Theatre. (Prerequisites: ANS/THR 161 and ANS/THR 361; permission of instructor.)</td>
</tr>
<tr>
<td>THR 499</td>
<td>3</td>
<td>Fall, Spring</td>
<td>Thesis Project (1+4) h Final step in acting/directing/design or playwright training which involves performing a leading role on main stage, or a one-person show, or a directing/designing/writing project for the UAFA season. (Prerequisite: Permission of instructor.)</td>
</tr>
</tbody>
</table>

**Trades and Technology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Term/Alternate</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCH 101</td>
<td>2</td>
<td>As Demand Warrants</td>
</tr>
</tbody>
</table>
TITCH 105 1 Credit As Demand Warrants
Basic Electrical Wiring (1+0)
Familiarizes the student with fundamental skills and career opportunities in electrical wiring.

TITCH 106 3 Credits As Demand Warrants
Residential Electrical Systems (3+0)
Provides basic electrical theory and technical skills for installation and service of electrical equipment commonly found in the home.

TITCH 113 3 Credits As Demand Warrants
Basic Plumbing (3+0)
Introduction to methods and materials used in household plumbing. Topics include pipe fittings and valves, pipe hangers and brackets, copper and plastic pipe fitting and plumbing fixtures.

TITCH 117A 1 Credit As Demand Warrants
Four-Cycle Engine Repair (1+0)
Covers four-cycle engine theory and principles of operation. Classroom activities include step-by-step disassembly, inspection and assembly of a four-cycle engine.

TITCH 117B 1 Credit As Demand Warrants
Two-Cycle Engine Repair (1+0)
Covers two-cycle engine theory and principles of operation. Classroom activities include step-by-step disassembly, inspection and assembly as well as familiarization with tools used in small engine repair.

TITCH 120 4 Credits As Demand Warrants
Refrigeration and Air Conditioning (4+0)
Introduces fundamentals of refrigeration and air conditioning theory for preparation of further study. Topics include compressors, condensers, evaporators, metering devices and related components. Assumes no previous knowledge on part of student.

TITCH 130 3 Credits As Demand Warrants
Blueprint and Schematic Reading (3+0)
Basic blueprint and schematic reading skills used by building maintenance personnel. Introduction to machine drawings, building drawings, hydraulic and pneumatic drawings, electrical schematics and symbols, air conditioning and refrigeration drawings, welding and joining symbols.

TITCH 131 3 Credits As Demand Warrants
Maintenance Mathematics (3+0)
Practical application of mathematics for industry, including arithmetic review, ratios and proportion, powers and roots, algebra, geometry and trigonometry. Mathematical applications of basic physics with reference to units of measurement, use of precision measuring tools, measurement of forces, temperature, fluids and electricity.

TITCH 132 3 Credits As Demand Warrants
Building Maintenance Materials (3+0)
Basic properties, processes and uses of metals and non-metals in tools, machines and building materials. Practical application to building maintenance situations will be emphasized.

TITCH 133 3 Credits As Demand Warrants
Basic Hand and Power Tools (3+0)
Uses, care and maintenance of hand and power tools. Familiarity and skill development with these tools through construction of shop projects.

TITCH 134 1 Credit As Demand Warrants
Maintenance Safety (1+0)
Industrial safety including recognizing safety hazards, working safely, handling materials safely, using machinery safely, personal protective equipment, electrical safety, fire protection and government safety regulations.

TITCH 135 1 Credit As Demand Warrants
Basic Maintenance Troubleshooting (1+0)
Systematic approaches to troubleshooting, scheduled and unscheduled maintenance of plant equipment and systems.

TITCH 136 3 Credits As Demand Warrants
Basic Shielded Metal-Arc Welding (3+0)
Introduction to welding in preparation of further study. Topics include welding safety, electrical welding equipment, electrode identification and selection. Welding practice on mild steel in various welder positions. No previous knowledge of welding required.

TITCH 146 2 Credits As Demand Warrants
Furnace Repair (2+0)
Theory of operation, maintenance and repair of oil burning furnaces, both forced air and radiant. Routine maintenance and upkeep of a furnace and trouble shooting procedures for emergency servicing for the homeowner.

TITCH 147 1 Credit As Demand Warrants
Burner Maintenance and Repair (1+2)
Instruction in troubleshooting 10 common problems, reading manuals, changing parts, setting electrodes, changing nozzles, understanding controls and ordering replacement parts.

TITCH 214 3 Credits As Demand Warrants
Heating Systems Design (3+0)
Comprehensive instruction in installation and systems approach to design of heating systems including installation procedures of current systems, heat loss calculation, heat distribution through hydronic and air systems, and boiler and furnace sizing.

TITCH 300 1-3 Credits Fall, Spring
Internship in Technology (6+12)
Supervised practical experience working with private industry, government units or agencies in technologies. Opportunities to apply theories and practical application and to observe procedures and operations of the businesses or agencies. (Prerequisites: Upper division standing and permission of instructor.)

TITCH 301 3 Credits Fall
Technology and Society (3+0)
Concepts of social change related to the effects of technology on society and application of the concepts and processes of technology as they evolve from ideas to implementation. Emphasis on the expanded study of the creation, utilization, adaptation of tools, machines, materials, and systems to the solutions of problems and the extension of the human potential. (Prerequisites: Upper division standing and permission of instructor.)

TITCH 485 1-6 Credits Fall, Spring
Advanced Technical Experiences: Discipline Area (variable)
Formal technical upgrade training provided by various agencies, manufacturers, businesses, or industries which are evaluated on an individual basis and must support the student's professional objectives. For Bachelor of Technology students only. The National Guide to Educational Credit for Training Programs used. (Prerequisites: Upper division standing and permission of instructor.)

TITCH 099, 199, 299 1-3 Credits
As Demand Warrants Practicum
Individual work and development of skills learned in prior courses.

Welding and Materials Technology

WMT 101 3 Credits As Demand Warrants
Introduction to Welding (2+2)
Introduction and orientation to the processes and procedures involved in the welding field with a "hands-on" approach.

WMT 102 3 Credits As Demand Warrants
Intermediate Welding (2+2)
Continuation of WMT 101. (Prerequisite: WMT 101.)

WMT 103 3 Credits Fall, Spring
Welding I (3+0)
Enter-level course in basic oxy-acetylene, arc welding, and flame cutting. Attendance at first two classes is mandatory. Materials fee: $200.00.

WMT 105 3 Credits Fall, Spring
Welding II (3+0)
Arc welding techniques and basic MIG and TIG welding. Attendance at first two classes is mandatory. Materials fee: $200.00. (Prerequisite: WMT 103 or permission of instructor.)

WMT 110 1-3 Credits As Demand Warrants
Oxy-Acetylene Welding (OAW)
A maximum of three credits awarded for successful completion of any of the four sections: 110A-Certif OAW (1G); 110B-Certif OAW (2G); 110C-Certif OAW (3G); 110D-Certif OAW (4G). Presented in competency-based manner.

WMT 115 1 Credit As Demand Warrants
Bronze Gas Welding (OAW Bronze) (1+0)
Credit is granted for successful completion of the certification test. WMT 115A-Certif OAW (1G). Presented in competency-based manner.

WMT 117 3 Credits As Demand Warrants
Oxy-Acetylene Welding and Cutting (2+5)
Safe oxy-acetylene welding techniques and procedures of common metals. Welding of these metals taught in flat, horizontal, vertical and overhead positions. Attendance at first two class meetings is mandatory. Materials fee: $200.00.
WMT 130  1-3 Credits  As Demand Warrants
Shielded Metal Arc Welding (SMAW)
All positions emphasized for multiple pass fillet welds. A maximum of three credits are awarded for successful completion of any of the four sections: 130A- Certif SMAW (1F); 130B-Certif SMAW (2F); 130C-Certif SMAW (3F); 130D-Certif SMAW (4F). Present in competency-based manner.

WMT 150  1-3 Credits  As Demand Warrants
Gas Tungsten Arc Welding (GTAW)
Use of tungsten and argon gas for aluminum and stainless steel gas welding (formerly called Heliaarc). A maximum of three credits are awarded for successful completion of any of the four sections: 150A-Certif GMAW Alum (1F); 150B-Certif GMAW Alum (2F); 150C-Certif GMAW Alum (3F); 150D-Certif GMAW Alum (4F). Present in competency-based manner.

WMT 160  1-3 Credits  As Demand Warrants
Gas Metal Arc Weld Alum (GMAW)
Prepare student to work on microwire processes. A maximum of three credits are awarded for successful completion of any of the four sections: 160A-Certif GMAW M.Steel (1F); 160B-Certif GMAW M. Steel (2F); 160C-Certif GMAW M. Steel (3F); 160D-Certif GMAW M. Steel (4F). Present in competency-based manner.

WMT 241  3 Credits  Fall
Gas Tungsten Arc and Gas Metal Arc Welding (1.5+5.5)
Enter-level gas tungsten arc welding on aluminum. Materials will be welded in all positions. Gas metal arc welding focuses on ferrous and nonferrous metals welded in all positions. Attendance at first two class meetings is mandatory. Materials fee: $250.00.

WMT 261  3 Credits  As Demand Warrants
Aviation Welding (2+2)
Tungsten inert gas and oxyacetylene are used to weld Moly steel aircraft structural parts. Basic aircraft joints and sheet metal joints are welded. Recommended as a review for licensed Aircraft and Power mechanics as well as those contemplating an A & P license.

Wildlife

WLF 101  1 Credit  Spring
Survey of Wildlife Science (1+0)
Major aspects of wildlife biology and management, research of local wildlife biologists and programs of management agencies. (Prerequisite: Completion of a course emphasizing the biology of non-human organisms.)

WLF 201  3 Credits  Spring
Wildlife Management Principles (2+3)
Application of ecological principles to the study and management of wildlife populations and their habitat. Management of game and non-game species considered. Computer exercises explore population dynamics, habitat use and exploitation strategies. (Prerequisite: BIOL 271, previous microcomputer experience desirable.)

WLF 303  3 Credits  Fall
Wildlife Management Techniques (2+3)
Study of procedures used by wildlife biologists and managers to collect, analyze, and disseminate information. Topics include using wildlife literature and scientific writing; behavioral sampling; nomenclature, identification, and sexing and aging of wildlife; census methods; habitat evaluation and manipulation; biotelemetry; home range; food habits and modeling; and necropsy procedures, animal condition, and wildlife diseases. Term paper required. Laboratory fee: $30.00. (Prerequisites: WLF 201 or equivalent, BIOL 271.)

WLF 304  1-3 Credits  Fall, Spring
Wildlife Internships
Practical experience in wildlife management in public or private agencies. Projects are approved by faculty member and supervised by professional agency staff. May not be substituted for courses required for major. (Prerequisite: Permission of instructor.)

WLF 305  3 Credits  Alternate Spring
Wildlife Diseases (2+3)
Basic concepts of parasitic, infectious, environmental, and nutritional diseases. Specific study of Alaskan wildlife diseases. Basic necropsy technique and chemical immobilization. Laboratory fee: $30.00. (Prerequisites: BIOL 105, 106 or equivalent and permission of instructor. Recommended: BIOL 310 and 317. Next offered: 1995-96.)

WLF 410  3 Credits  Spring
Wildlife Populations and Their Management (2+3)
The characteristics and ecology of wildlife populations and the knowledge necessary for their wise management. Measures of abundance, dispersal, fecundity and mortality, population modeling, competition and predation, and the management of rare species and their habitats. Laboratory fee: $30.00. (Prerequisites: BIOL 271, introductory statistics course and WLF 303 or BIOL 471.)

WLF 419  4 Credits  Alternate Fall
Waterfowl and Wetlands Ecology and Management (3+3)
Ecology of waterfowl and associated wetland habitats. Management of populations, including harvest and manipulation of habitats. Distribution, abundance, taxonomy and identification of North American waterfowl. Laboratory fee: $30.00. (Prerequisite: BIOL 271, 426, and WLF 201 or permission of instructor. Next offered: 1995-96.)

WLF 431  3 Credits  Spring
Wildlife Policy and Administration (3+0)
(Same as NRM 431)
Study of laws and agencies shaping wildlife management in North America. History and current status of major policy issues. Organization of and funding sources for state and federal programs in wildlife conservation. (Prerequisite: A 3 credit course in wildlife management principles or permission of instructor.)

WLF 460  3 Credits  Fall
Nutrition and Physiological Ecology of Wildlife (3+0)
(Same as WLF 660)
Concepts and techniques used by wildlife biologists to understand relationships between wild animals and their habitats. Techniques for constructing energy and nutrient budgets of wild animals and applications of these budgets to population level processes and habitat management. (Prerequisites: BIOL 310, 271, WLF 201.)

WLF 602  3 Credits  Fall
Research Design (3+0)
(Same as BIOL 602)

WLF 603  3 Credits  Alternate Fall
Biotelemetry (2+3)

WLF 611  Credits Arr.  As Demand Warrants
WLF 612  Credits Arr.

WLF 624  3 Credits  Alternate Fall
Wildlife Field Trip

WLF 641  2 Credits  Alternate Spring
Grazing Ecology (2+0)
(Same as BIOL 614)

WLF 658  2 Credits  Alternate Fall
Advanced Topics in Wildlife Management (2+0)

WLF 660  3 Credits  Alternate Spring
Vertebrate Population Dynamics (2+3)

WLF 665  4 Credits  Alternate Spring
Analysis of Vertebrate Population (3+3)
(Same as FISH 665)

WLF 666  4 Credits  Fall
Nutrition and Physiological Ecology of Wildlife (3+3)
(Same as WLF 460)

WLF 680  3 Credits  Alternate Fall
Data Analysis in Biology (2+3)
(Same as BIOL 680 and STAT 680)

WLF 692  1 Credit  Fall, Spring
Graduate Seminar (0+0+1)

Women's Studies

WMS 201  3 Credits  Fall
Introduction to Women's Studies (3+0)
An interdisciplinary introduction to the field of women's studies, exploring its development, subject matter, and methodology. Readings of studies which have become classic examples of the importance of gender in research in many disciplines is examined. (Prerequisite: Sophomore standing.)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Term Offered</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMS 202</td>
<td>3</td>
<td>Alternate Spring</td>
<td>History of Women in America (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as ENGL 302)</td>
</tr>
<tr>
<td>WMS 303</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Gender in a Cross-Cultural Perspective (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as ANTH 303)</td>
</tr>
<tr>
<td>WMS 308</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Language and Gender (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as ANTH 308)</td>
</tr>
<tr>
<td>WMS 331</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Women’s Voices in Japanese Literature (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as JPN 331)</td>
</tr>
<tr>
<td>WMS 333</td>
<td>3</td>
<td>Spring</td>
<td>Women’s Literature (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as ENGL 333)</td>
</tr>
<tr>
<td>WMS 335</td>
<td>3</td>
<td>Spring</td>
<td>Women, Crime and Justice</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as JUST 335)</td>
</tr>
<tr>
<td>WMS 351</td>
<td>3</td>
<td>Alternate Years</td>
<td>Gender and Communication (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as COMM 351)</td>
</tr>
<tr>
<td>WMS 360O</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Psychology of Women Across Cultures (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as PSY 360)</td>
</tr>
<tr>
<td>WMS 375</td>
<td>3</td>
<td>As Demand Warrants</td>
<td>Women and Development (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as RD 375)</td>
</tr>
<tr>
<td>WMS 380</td>
<td>3</td>
<td>Spring</td>
<td>Women, Minorities and the Media (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as JB 380)</td>
</tr>
<tr>
<td>WMS 410</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Women in Music History (3+0) h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as MUS 410)</td>
</tr>
<tr>
<td>WMS 424</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Topics in Women’s History (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as HIST 424)</td>
</tr>
<tr>
<td>WMS 440</td>
<td>3</td>
<td>Alternate Spring</td>
<td>Gender and Education (3+0) s</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Same as ED 440 and ED 640)</td>
</tr>
</tbody>
</table>

A chronological approach to the history of women in America. Introduction to major issues of concern to historians of women, as well as different approaches utilized in the analysis of women’s past; consideration of the multi-racial backgrounds of American women. (Next offered: 1995-96.)

Gender as both cultural construction and social relationship is examined through readings in comparative ethnographies portraying gender roles in a broad variety of societies, from hunter-gatherer to industrial. New theoretical and methodological approaches in anthropology for exploring and understanding women’s experiences in their cultural variety are presented. Materials fee: $5.00. (Next offered: 1995-96.)

Examination of relationships between language and gender, drawing on both ethnographic and linguistic sources. Topics include power, socialization and sexism. Materials fee: $5.00.

A close reading of selected novels, short stories, poems, and diaries by Japanese women from the tenth century to the present which reveal the personal, social, aesthetic and intellectual concerns of women in different periods of Japanese history. Focus on the changing role of women in Japanese society, the role of women writers as social critics, and cross-cultural differences and similarities in women’s issues. (Prerequisites: ENGL 211X or 213X, ENGL/FL 200X, HIST 121, 122, or 331 recommended. Next offered: 1995-96.)

Reading, discussing and analyzing literary works dealing with the social, cultural and political implications of patriarchal structures and traditions from the perspective of feminist theory and criticism. Focus may be on a particular theme, period or genre, but readings will include both primary and secondary texts. (Prerequisite: ENGL 111X; ENGL 211X recommended.)

Interaction of women with the American justice system focusing on women as victims, offenders and working professionals in justice agencies. Materials fee: $10.00. (Prerequisites: JUST 110 and junior standing.)

Basic socialization differences exist in the communication practices of women and men in every culture, resulting in differing cultural constructions of male and female gender. Those differences are addressed in the interpersonal, organizational, and cultural contexts. Exploration of cultural female/male dichotomy as well as individual similarities. (Prerequisite: Any lower division communication course or permission of the instructor. Next offered: 1995-96.)

Major theories, research and empirical data which describes the psychology of women as a discrete field, philosophical values of feminism and history of women’s roles in society. The impact of culture on women interpersonally and intrapsychically examined across cultures. (Prerequisite: PSY 101 or permission of instructor. Next offered: 1995-96.)

The effect of modernization and development processes on the role of women in a variety of Third World and tribal world contexts as well as the increasingly important “new” role women play in these complex processes.

Examination of how women and minorities are portrayed in the mass media, the employment of women and minorities in the media, as well as how accurately the media reflects our society demographically. Presented from a feminist, multiculturalist perspective using a broad feminist analysis encompassing issues of gender as well as class, race, age, and sexual orientation. (Prerequisite: Junior standing.)

An in-depth seminar on a specific topic of current interest. Topics may change and may cover the history of European or American women from the 18th century to the present. (Prerequisites: A lower division history course and junior standing or permission of instructor. Next offered: 1995-96.)

Educational practices and processes and their relation to the changing situation of women in society. Examination of schools as sites of pervasive gender socialization and discrimination as well as offering new possibilities for liberation. Topics include social construction of gender; patterns of access and achievements; gender as an organizing principle in schools and classrooms; and feminist agendas and strategies for change. (Prerequisite: SOC 101 or ED 201 or permission of instructor. Next offered: 1995-96.)
Register

UA Board of Regents
Sharon D. Gagnon, President (1991-1999)
7001 Tree Top Circle, Anchorage, AK 99516
Virginia W. Breeze, Vice President (1989-1997)
P.O. Box 22215, Juneau, AK 99802
Mary Jane Faye, Secretary (1993-2001)
P.O. Box 7111, Fairbanks, AK 99707
R. Dunforth Ogg, Treasurer (1993-2001)
P.O. Box 2754, Kodiak, AK 99615
178 H Street, Anchorage, AK 99501
Eric Forrer (1989-1997)
176 Behrends Avenue, Juneau, AK 99801
9921 Near Point Drive, Anchorage, AK 99507
P.O. Box 71249, Fairbanks, AK 99707
P.O. Box 581, Palmer, AK 99645
879 Vide Way, Fairbanks, AK 99712
755 Grant Street, Ketchikan, AK 99901

UAF Administration
Executive Officers
Chancellor, Joan K. Wadlow
Provost, John P. Keating
Vice Chancellor for Administrative Services, Michael L. Rice
Affirmative Action/Equal Opportunity, Dorothy Jones, Assistant to the Chancellor
Agriculture and Land Resources Management, School of, James V. Drew, Dean
Alaska Cooperative Extension, Hollis Hall, Director
Arctic Biology, Institute of, Robert G. White, Director
Arctic Research, Office of, Ted DeLaca, Director
Engineering, School of, Frank Williams, Dean
Fisheries and Ocean Sciences, School of, Vera Alexander, Dean
Geophysical Institute, Syun-Ichi Akasofu, Director
Graduate School, Joseph Kan, Dean
Liberal Arts, College of, Gorden Heddahl, Dean
Library, Rasmuson, Sharon West, Director
Management, School of, David Porter, Dean
Mineral Engineering, School of, Robert Trent, Dean
Natural Sciences, College of, Paul Reichardt, Dean
Rural Alaska, College of, Ralph Gabrielli, Acting Executive Dean

Bristol Bay Campus, Peggy Wood, Director
Chukchi Campus, Lynn Johnson, Director
Interior-Aleutians Campus, Clara Johnson, Director
Kuskokwim Campus, David Williams, Director
Northwest Campus, Nancy Murdock, Director
Tanana Valley Campus, Ruth Listler, Director
Student Services, Carla Kirts, Dean
University Relations and Institutional Advancement, Karen L. Cedzo, Associate Vice Chancellor

Governance
ASUAF, Joe Hayes, President 1994-95
Faculty Senate, Eric Heyne, President
Staff Council, Marie Scholle, President

Faculty and Staff
The date following each name designates the time of original appointment to the University faculty or staff. (Dates of resignations and reappointments are not indicated.) A second date in parentheses follows each member's present rank and indicates the beginning of service in that rank. The abbreviation that follows this second date indicates the University of Alaska Fairbanks unit in which the employee works.

The abbreviations are:
ACE Alaska Cooperative Extension
AFES Agricultural and Forestry Experiment Station
ANHRDP Alaska Native Human Resource Development Program
ARSC Arctic Region Supercomputing Center
ATHREC Athletics and Recreation
BB Bristol Bay Campus
C&SE Conferences and Special Events
CC Chukchi Campus
CGCSR Center for Global Change and Arctic System Research
CLA College of Liberal Arts
CNS College of Natural Sciences
CRA College of Rural Alaska
FITC Fishery Industrial Technology Center
GI Geophysical Institute
GRAD Graduate School
IAB Institute of Arctic Biology
IAC Interior-Aleutians Campus
IMS Institute of Marine Science
INE Institute of Northern Engineering
JC Juneau Center
KUC Kuskokwim Campus
LIB Elmer Rasmuson Library
MAP Marine Advisory Program
NURC West Coast National Undersea Research Center
NWC Northwest Campus
PDL Petroleum Development Laboratory
PICO Polar Ice Coring Office
PROV Office of the Provost
SALRM School of Agriculture and Land Resources Management
SOE School of Engineering
SOED School of Education
SPOS School of Fisheries and Ocean Sciences
SG Alaska Sea Grant College Program
SME School of Mineral Engineering
SON School of Management
STUSVC Student Services
TVC Tanana Valley Campus
UAM University of Alaska Museum
URIA University Relations and Institutional Advancement
VCAS Vice Chancellor for Administrative Services

Abrahams, Sherry — 1964 — Associate Professor of Library Science (1975), Lib, Bowling Green State University ’58, B.A.; University of Illinois ’59, M.S.L.S.
Abramowicz, Kenneth F. — 1994 — Assistant Professor of Accounting and Information Systems (1994), SOM, University of Tulsa ’82, B.S.B.B.A.; ’83, M.S.; University of Missouri-Columbia ’91, Ph.D.; C.P.A.
Adamczak, Carol — 1993 — Project Manager (1993), VCAS.
Adams, Gall — 1990 — Assistant Student Activities Coordinator (1990), STUSVC, University of Alaska Fairbanks ’90, B.B.A.
Akasofu, Syun-Ichi — 1958 — Director, Geophysical Institute (1986); and Professor of Geophysics (1964), GI, Tohoku University ’53, B.S.; ’57, M.S.; University of Alaska ’61, Ph.D.
Albrecht, C. Earl — 1979 - Affiliate Professor of Medical Science (1979), CNS. Moravian College, Pennsylvania "76 & 78. Moravian Theological Seminary "78, B.D.; Jefferson Medical College '32, M.D.

Alexander, Barbara — 1977 - Associate Professor of Humanities (1985), CLA; University of Zurich '75, Ph.D.

Alexander, Vera — 1962 - Dean, School of Fisheries and Ocean Sciences (1989); and Professor of Marine Science (1987). SFOS/MSIS. University of Wisconsin '55, M.S.; '62, M.S.; University of Alaska '65, Ph.D.

Alexie, Oscar — 1983 - Instructor of Yup'ik Eskimo (1993), KUC/CRA.


Bach of Architecture


Amason, Alvin — 1992 - Assistant Professor of Art (1992), CLA. Central Washington University '74, M.A.; Arizona State University '76, M.F.A.

Anderson, Betty — 1985 - Instructor of Biology, Independent Learning Program (1985), CRA. University of Arizona, Tucson '76, B.S.; '78, B.S.; University of Alaska Fairbanks '83, M.S.

Anderson, Candace M. — 1971 - Coordinator (1986), VACS. Western State University '70, B.A.

Anderson, James H. — 1970 - Library Assistant II, BioSciences Library (1993) and Senior Research Associate (1976), IAB. University of Washington '64, B.S.; Michigan State University '70, Ph.D.; Brigham Young University '93, M.L.I.S.

Anderson, Lydica M. — 1974 - Assistant Director, Wood Center Student Activities (1992), STUSVC. Cuesta College, A.A.

Anderson, Patricia A. — 1992 - Associate Director, Center for Global Change (1992), CC/CRA. University of Iowa '73, B.S.; Dalhousie University '76, M.A.; New York University '82, Ph.D.

Andersen, Patricia A. — 1967 - Director, Honors Program (1990), CLA. University of Illinois '55, B.S.; University of Missouri '58, M.A.; University of California at Santa Barbara '76, Ph.D.

Andrew, Eileen — 1990 - Instructor, Community Health Aid Program (1989), KUC/CRA. MEDEX Northwest, University of Washington '87, Physician Assistant.


Andrews, Susan B. — 1989 - Associate Professor of General Studies and Associate Professor of Journalism and Broadcasting (1994), CC/CRA, Smith College '81, B.A.; University of Oregon '83, M.A.

Ankon, Greg — 1989 - Coordinator of Adult Basic Education (1990), KUC/CRA. University of Alaska '87, B.A.; '90, M.Ed.

Angikak, Andrew P. — 1978 - Director, Upward Bound Program (1982), STUSVC. Washington State University '76, B.A.; University of Washington '78, M.S.W.

Anthony, Anolytu — 1989 - Associate Professor of Theatre (1989), CLA. Institute of Cinematography, U.S.S.R. '75, M.F.A.

Antonius, Otto — 1992 - Research Associate (1992), GI. Diploma (Germany) '83; Bochum '87, Ph.D.

Arnambruster, W. Scott — 1980 - Professor of Botany (1992), CNS, IAB. University of California, Santa Barbara '72, B.A.; University of California, Davis '77, M.S.; '81, Ph.D.


Arps, Peggy J. — 1989 - Research Associate of Biochemistry (1993), IAB. Cornell University '77, A.B. & M.A.; University of Kansas, University '83, M.S.; '85, Ph.D.

Arundale, Robert — 1979 - Associate Professor of Communication (1985), CLA. Rensselaer Polytechnic Institute '63, B.S.; '64, M.S.; Michigan State University '71, Ph.D.

Arundale, W. Yue H. — 1979 - Senior Research Associate (1979), IAB. Brown University '67, A.B.; Michigan State University '72, M.A.; '76, Ph.D.

Arvey, Martha M. — 1988 - Visiting Assistant Professor of Library Science (1989), LIB. Scripps College '63, B.A.; University of California, Los Angeles '64, M.L.S.

Aspnes, John D. — 1978 - Professor of Electrical Engineering (1981), and Head, Department of Electrical Engineering (1983). SOE. University of Wisconsin '65, M.S.; Montana State University '76, Ph.D.; P.E.


Bachner, Nancy — 1974 - Conference Coordinator (1981), C&SE.

Badger, Harry R. — 1990 - Assistant Professor of Natural Resource Policy (1990), SALTRECH. University of Nevada State University '85, B.A.; Drake Law School '86, C.L.E.; Harvard Law School '89, J.D.

Baley, Regina L. — 1990 - Coordinator (1990), PROV. SUC Geneseo '73, B.S.; Troy State University '81, M.S.

Baker, Elshua — 1989 - Associate Professor of Engineering and Science Management (1990), SOE. Clemson University '70, B.S.; '72, M.S.; '75, Ph.D.

Baker, Grant C. — 1988 - Assistant Professor of Mechanical Engineering (1990). SOE. University of Washington '78, B.S.; University of Alaska Fairbanks '83, M.S.; '87, Ph.D.

Gerlach, S. Craig — 1988 — Assistant Professor of Anthropology (1992), CLA. University of Oklahoma. Sc. B.A.; '77; M.A.; Brown University '89, Ph.D.

Getz, Martin — 1982 — Instructor of Mathematics (1982), CLA. University of Alaska South '89, M.S.; University of Alaska Fairbanks '82, M.S.


Gibbens, Tracey — 1992 — Assistant Professor of Music (1992), CLA. University of Northern Iowa. '77, B.M.E.; University of Iowa '89, M.A.


Gilbert, Dana — 1993 — Moore Hall Director (1993), STUSVC. Texas Tech '90, B.A.; '92, M.A.

Gilmore, Perry — 1985 — Associate Professor of Education (1987) SOED. Temple University. '66, B.S.; '76, M.S.; University of Pennsylvania '82, Ph.D.

Gimbel, John G. — 1987 — Professor of Mathematics (1993), CLA. Andrews University. Sc. B.S.; '77, Western Michigan University '84, Ph.D.

Gilson, Gary A. — 1970 — Professor of Mathematics (1984), CLA; and Instructor of Mathematics, Independent Learning Program (1970), CRA. University of Alaska '66, B.S.; University of Alaska '68, M.S.; '70, Ph.D.

Gladden, James N. — 1985 — Associate Professor of Political Science/Justice (1991) and Head, Department of Political Science/Justice (1992), CLA. Indiana University. Sc. B.S.; University of Alaska Fairbanks. '72, B.A.; University of Houston, Texas '77, M.A. Indiana University-Bloomington '84, Ph.D.

Gleason, Thomas A. — 1990 — Accountant, Grant and Contract Services (1990), VCAS. University of Alaska Fairbanks. B.B.A.; C.P.A.

Goering, Douglas J. — 1989 — Assistant Professor of Mechanical Engineering (1989), SOE. University of Washington '81, B.S.; University of Alaska Fairbanks '84, M.S.; University of California, Berkeley '89, Ph.D.

Goering, Gregory E. — 1990 — Associate Professor of Economics (1994), SOM. University of Alaska '84, B.A.; '86, M.S.; Purdue University '88, MS.; '90, Ph.D.

Goering, John J. — 1962 — Professor of Marine Science (1968) and Associate Director of IMS (1969), SFS/IMS. Bethel College '56, B.S.; University of Wisconsin '60, M.S.; '62, Ph.D.

Gold, Carol — 1980 — Professor of History (1994), CLA. Antioch College. '64, B.A.; University of Wisconsin '67, M.A.; '75, Ph.D.

Gorman, Robert F. — 1991 — Assistant Professor (1991), ACE. University of Massachusetts. '67, M.A.; University of Arkansas '74, B.S.A.; Washington State University '77, M.S.

Graham, Jeffrey S. — 1989 — Affiliate Assistant Professor of Agronomy (1989), SALRM. University of Montana '79, B.S.; '83, M.S.; Oregon State University. '89, Ph.D.


Gray, Andrew K. — 1990 — Research Associate (1990), SFS/C. Washington State University. '88, B.S.; University of Alaska '90, M.S.

Greco, Connie M. — 1981 — Fiscal Officer, Physical Plant (1989), VCAS.

Greenberg, Joshua A. — 1990 — Assistant Professor of Resource Economics (1990), SALRM. University of Connecticut. '82, B.A.; University of Alaska Fairbanks. '84, M.A.; Washington State University. '90, Ph.D.

Greene, Barbara E. — 1992 — Visiting Assistant Professor of Extension, Nutrition (1990), ACE. Florida Southern College '57, B.S.; Florida State University '62, M.S.; '66, Ph.D.; University of Alaska Fairbanks '88, M.S.

Greenlund, Mary Anne N. — 1991 — Associate Professor (1991), ACE. Oregon State University. '55, B.S.; Southern Oregon State College. '82, M.S.

Gregory, Gayle — 1984 — Graduation Manager (1988), STUSVC. University of Alaska Fairbanks. '80, B.B.A.

Griekurova, Alla — 1991 — Instructor of Russian (1992), CLA. St. Petersburg State University. '79, M.A.

Gross, Joseph J. — 1992 — Assistant Professor of General Studies (1992), CC/CRA. Idaho State University. '68, B.A.; University of Rochester. '71, M.A.; '74, Ph.D.

Grove, Robert A. — 1989 — Operations Manager (1991), GI. Chico State University. '69, B.A.


Guthridge, George — 1990 — Associate Professor of English and General Studies (1994), BBC/CRA. Portland State University. '70, B.A.; University of Montana '72, M.F.A.

Guthrie, R. Dale — 1963 — Professor of Zoology (1970), Associate Faculty of Anthropology (1987), CNS, IAB. University of Illinois. '58, B.S.; '59, M.S.; University of Chicago '63, Ph.D.

Hageman, Jeanne K. — 1992 — Assistant Professor of French (1992), CLA. University of Wisconsin Madison. '81, B.A.; '83, M.B.A.; '86, M.A.; '91, Ph.D.

Haldorn, Lewis J. — 1990 — Associate Professor of Fisheries (1984), SFS/C. University of Minnesota. '63, B.A.; University of California, Santa Barbara. '73, M.A.; '78, Ph.D.
Index

A
About this Catalog, 1
Academic Advising, 37
Academic Bankruptcy for Returning Students, 10
Academic Calendar
Fairbanks Campus, inside front cover
Academic Computing, 40
Academic Disqualification, 17
Academic Honors, 17
Academic Progress, 17
Academic Regulations, 17
Academic Standards, 17
Access to Records, 19
Accounting, 50
Courses, 106
Accounting and Information Systems
Courses, 106
Accreditation, 1
ACT Tests, 8, 15
Activity Fee, 28
Adding a Class, 15
Adding, Dropping and Withdrawing from Classes, 15
Administration, UAF, 197
Admission Processing Fee, 28
Admission Requirements, 8-14
Admissions, 8
Admissions and Records, 38
Advanced Placement Credit, 12
Advising Center, 37
Agricultural and Forestry Experiment Station, 46
Agriculture and Land Resources Management, School, 47
Airframe and Powerplant, 50
Courses, 107
Alaska Cooperative Fish & Wildlife Research Units, 46
Alaska Cooperative Extension, 4
Alaska Native Language Center, 46
Alaska Native Languages, 51
Courses, 108
Alaska Native Politics Courses, 109
Alaska Native Studies, 52
College, 139
Alaska Resident, 27
Alaska Student Loan Program, 31
Alaska Studies Courses, 111
Alaska Teacher Placement, 37
Alternative Ways to Earn Credit, 12
Alumni Relations, 40
American Sign Language Courses, 111
Anthropology, 52
Courses, 111
Appeal Procedure, 17
Applied Accounting, 53
Applied Art Courses, 113
Applied Business, 53
Courses, 113
Applied Mining Technology, 53
Courses, 115
Applied Photography
Courses, 116
Applied Physics, 54
Applying for Admission, 8
Artistic Engineering, 54
Art, 54
Courses, 116
Asian Studies, 55
ASSET Tests, 8, 15
Association Degrees
Admission Requirements, 8
Degree Requirements, 23
Associate of Arts, 55
Associated Students of the UAF (ASUA), 40
Athletic Coaching, 40
Athletics and Recreation, 40
Atmospheric Sciences, 56
Courses, 118
Attendance, 17
Auditing, 15, 18
Automotive Courses, 118
Aviation Technology, 56
Courses, 118
B
Baccalaureate Core, 18, 23, 105
Bachelor's Degrees
Admission Requirements, 8
Degree Requirements, 24
Bio-Sciences Library, 43
Biochemistry and Molecular Biology, 56
Biological Sciences, 56
Biology, 57
Courses, 120
Board of Regents, 197
Bookstore, 58
Botany, 57
Branch Campuses, 6
Bristol Bay Campus, 6
Business Administration, 57
Courses, 123
C
Campus Resources, 40
Career Development Center, 37
Career Services, 37
Center for Cross-Cultural Studies, 46
Certificate Programs
Admission Requirements, 8
Degree Requirements, 23
Chancellor's List, 17
Change of Grade Policy, 17
Changing from Credit to Audit, 16
Chemistry, 58
Courses, 124
Chukchi Campus, 6
Civil Engineering, 59
Courses, 126
Class Standing, 17
College Board Advanced Placement, 13
College Level Exam Program (CLEP), 13
College Student Personnel Administration Courses, 127
Colleges and Schools, 47
Commencement, 22
Communication, 60
Courses, 127
Community Health, 60
Courses, 128
Community Psychology, 61
Computer Applications, 61
Courses, 129
Computer Information Systems, 61
Computer Science, 61
Courses, 130
Computing, Academic, 40
Computing Your GPA, 18
Conditional and Final Acceptance, 8
Contents, 3
Continuing Education, 41
Cooperative Extension, 4
Core Curriculum, 23
Correspondence Study, see Independent Learning, 14
Counseling Courses, 131
Counseling, Center for Health and, 38
Course Classification Identification, 105
Course Classifications, 18
Course Credits, 103
Course Descriptions, 105
Course Fees, 27
Course Numbers, 105
Course Placement, 110
Credit Reserve Graduate, 20
Transfer, 11
Credit by Examination, 13
Costs, 28
Credit for Prior Learning, 14
Credit-No-Credit Option, 15
Cross-Cultural Communications, 62
Courses, 132
Culinary Arts, 62
Courses, 132
D
Dance
Courses, 133
DANTES-DSST Tests, 13
Dean's List, 17
Degree Requirements, 22
Degrees and Programs, 49
Dentistry, 63
Developmental English
Courses, 134, 145
Developmental Mathematics
Courses, 134, 166
Developmental Studies, 37
Courses, 133
Diesel/Heavy Equipment Mechanics, 63
Courses, 134
Diplomas, 22
Directory, 2
Directory Information, 19
Disabilities, Services for Students with, 39
Downtown Center, 7
Drafting Technology, 63
Courses, 134
Dropping a Class, 16
Duplicate Copy Fee, 28
E
Early Childhood Development, 64
Courses, 135
Early Childhood Education, 64
Courses, 136
Earth Science, 65
Economics, 65
Courses, 137
Education, 66
Courses, 138
Education, School of, 47
Electrical Engineering, 70
Courses, 142
Electronics Technology Courses, 143
Emergency Medical Technology Courses, 149
Emeriti, 212
Engineering and Science Management Courses, 127
Engineering Management, 71
Engineering, School of, 47
Engineering Science Courses, 144
English, 71
Courses, 145
English as a Second Language Courses, 147
Enroll, How to, 8
Entrance Requirements, 8
Environmental Quality Engineering and Science, 72
Environmental Quality Engineering/Science Courses, 147
Espirito, 72
Courses, 148
Exchange Programs, 41
F
Faculty, 5
Faculty and Staff Register, 197
Fairbanks Area, 6
Family Housing, 36
Federal Supplemental Educational Opportunity Grant, 31
Fees and Financial Aid, 27
Film Studies, 72
Financial Aid, 30-34
Fire Science, 72
Courses, 149
Fisheries, 74
Courses, 151
Fisheries and Ocean Sciences, School of, 47
Fishery Industrial Technology Center, 46
Food Science and Nutrition, 74
Courses
Foreign Languages, 75
Courses, 152
Forestry, 75
Courses, 152
Courses,
Student Brenin Humphreys holds qiviut and the attention of a young musk ox at the UAF Large Animal Research Station.

It is the policy of the University of Alaska Fairbanks to provide equal education and employment opportunities and to provide services and benefits to all students and employees without regard to race, creed, color, religion, national origin, sex, age, disability, status as a Vietnam era or disabled veteran, marital status, changes in marital status, pregnancy or parenthood, pursuant to laws enforced by the Department of Education and the Department of Labor, including Presidential Executive Order 11246, as amended, Title VI and Title VII of the 1964 Civil Rights Act, Title IX of the Education Amendments of 1972, the Public Health Service Act of 1971, the Veteran’s Readjustment Assistance Act of 1974, the Vocational Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination in Employment Act of 1967, the Equal Pay Act of 1963, the 14th Amendment, EEOC’s Sex Discrimination Guidelines, and Alaska Statutes Title 18, Chapter 80 and Title 14, Chapter 18. Inquiries regarding application of these and other regulations should be directed either to the University of Alaska Fairbanks, Affirmative Action/Equal Opportunity Office, the Office of Civil Rights, Department of Education, Washington, DC, or to the Office of Federal Contract Compliance Programs, Department of Labor, Washington, DC.

This catalog and its contents shall not be construed as a contract between the University of Alaska Fairbanks and prospective or enrolled students. The catalog is merely a vehicle of information. Although every effort is made to ensure its correctness, regulations of the university and its program requirements change from time to time during the period any student is attending the University of Alaska Fairbanks.

Accordingly, if regulations or program requirements of the university in any way conflict with information contained in this catalog, the current regulations and program requirements govern. The university reserves the right to initiate changes in any of its regulations or program requirements affecting operation of the university and its program requirements; such changes shall become effective upon whatever time periods are required by applicable statutes, university regulations or program requirements.

This publication was released by the University of Alaska Fairbanks and produced at a cost of $1.52 per copy, to inform students and prospective students about UAF programs and guidelines. It was printed in Petersburg, Alaska, by Pilot Publishing, April 1995.